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LIST OF ABREVIATIONS

ABCT:	Austrian Business Cycle Theory
ADHGB:	Allgemeines Deutsches Handelsgesetzbuch *(General German trade law)*
Art.:	article
BFH:	Black-Fama-Hall
CPI:	Consumer Price Index
ed.:	editor
e.g.:	exempli gratia
et al.:	et alii
etc.:	et cetera
f.:	and the following page
ff.:	and the following pages
GAAP:	Generally Accepted Accounting Principles
HGB:	Handelsgesetzbuch *([German]Trade law)*
HIMAX:	Historical Market Index
ibid.:	ibidem
i.e.:	id est
IS/LM:	Investment Saving / Liquidity Preference Money Supply
kg:	kilogram
n.:	note
p.:	page
pp.:	pages
viz :	videlicet
Vol.:	volume

LIST OF SYMBOLS

A:	number of labourers
K:	capital
$:	dollar
t :	time
U:	unit of account
w:	wages

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1. Introduction

1.1 The veil of money on the financial market

What is it that makes many people think of the financial market as a gambling casino? Especially at the present day this analogy does not seem to suggest itself. In the end, even all casinos in the world taken together could never kick off a longstanding global economic crisis like the one we are living through since 2008. The reason why so many people nonetheless assent to this comparison must probably be looked for in that they have no clear idea of the role the financial market plays within the economy. In the eyes of a superficial observer, it does not produce anything tangible or "real," it even does not provide services that could be consumed by anyone. All one can perceive with one's five senses consists in transactions of cash flows against future cash flows, cash flows against options of cash flows, or even promises of cash flows against promises of cash flows. Money is exchanged for money without any visible reason except for gambling in the pursuit of profit. Viewed in this light it does not surprise that the comparison with a gambling casino comes to mind. That the financial market crashes periodically and entails problems in the real economy – most notably unemployment and decline in production – makes things even worse. The financial market not only seems to be surplus to requirements, but even a millstone around the neck of the economy.

And it has to be admitted, in the treatment of the financial market it is tempting to confine oneself to a practise that John Stuart Mill has cautioned against, namely to attend "only to the outward mechanism of paying and spending." His insistence to look rather "directly at the realities of the phenomena"[1] turns out to be particularly hard to implement. You would almost think that there aren't any "realities" at all. In the 20th

[1] Both quotes from Mill (1965, p. 89).

century, probably Joseph Schumpeter[2] coined the term "*veil of money*" which is particularly apt to express this difficulty.[3] In a monetised economy, the realities are, so to speak, *veiled* behind the observable flows of money. A significant part of the present thesis is dedicated to removing this veil from the financial market. What are the realities of the phenomena that can be observed there?

But we won't leave it at that. Although the brushing aside of the veil of money brings some useful results, it does not, as also Schumpeter remarks, allow for a complete comprehension of all relevant processes.[4] After all, it cannot be denied that the "realities of the phenomena" on the financial market are actually effectuated by money transactions. Hence, in order to grasp the rationale of the financial market, it is not enough to understand the "realities" on the one hand, and the cash flows on the other. The *connection between the two* must be clarified, too. Therefore, the following study also provides an in-depth analysis of money and its purchasing power. In the end, the aim is not to merely *remove* the veil of money from the financial market, but to *examine it in detail*.

In modern monetary theory, the link between the "outward mechanism of paying and spending" and the "realities of the phenomena" is dealt with mainly in two different ways. The first one is based on Keynesian short-run macroeconomic analysis. It finds its most familiar expression in the so-called IS/LM–model which is contained in nearly all modern textbooks on macroeconomics. This model traces back to John Hicks[5] who, himself, based it on the famous *General Theory of Employment, Interest, and Money*[6] by John Maynard Keynes. In the IS/LM–model, the link between monetary spending and the "realities" occupies the centre stage. In fact, monetary expenditures

[2] See Klausinger (1990, p. 620), Schumpeter (1908, p. 281).
[3] See Patinkin/Steiger (1989, pp. 131 f.).
[4] See Schumpeter (1908, p. 281).
[5] See Hicks (1937).
[6] See Keynes (1936).

even *determine* the "realities." To be precise, the amount of *production* depends on *aggregate demand*, that is, on the aggregate amount of *expenditures* on goods.[7] The causal nexus is thought to run as follows: The more *money* the citizens, foreigners, and the state *spend* on consumption and investment, the higher becomes aggregate demand and the more will be produced in order to meet this demand.

At this point it is not necessary to go into the details of this chain of reasoning. In some of the chapters of the work in hand it will be picked up again. Suffice it to explain why it does not help to raise the veil of money from the transactions on the financial market. In order to demonstrate this point, it is of avail to have a look at the role the financial market is supposed to play in the theory in question. If aggregate demand is accepted to be the determining variable for the size of production, the financial market can be of importance for production only in so far as it makes an impact on demand. And indeed, the financial market has correspondingly little room in IS/LM–based macroeconomics. According to Keynesian theory, the transmission of impulses from the financial market to the "real" economy – the so-called *monetary transmission mechanism* – exclusively rests upon the influence of the interest rate.[8] Via the interest rate, each of the several channels of monetary transmission affects at least one of the components of aggregate demand, i.e., consumption, investment, or the trade balance.[9] Consequently, the only function of the financial market seems to be to determine the interest rate.[10] The lower the interest rate becomes, the more people invest, consume, and export.[11] The interest rate, in turn, is determined by the total supply and the total demand for money on the financial market.[12] When the demand for money increases, the interest rate tends to rise, and when the supply of money increases,

[7] See e.g. Blanchard (2006, pp. 48 ff.).
[8] See Froyen (2005, p. 122).
[9] See Boivin et al. (2011, pp. 374 ff.).
[10] See Blanchard (2006, pp. 65 ff.), Froyen (2005, pp. 125 ff.), Gärtner (2006, pp. 62 ff.).
[11] See Boivin et al. (2011, pp. 376 ff.).
[12] See Blanchard (2006, pp. 68 ff.).

the rate tends to decline, and vice versa.[13] To sum up, in determining the interest rate, the financial market affects aggregate demand and, in consequence, also the real economy, that is, production.

Although IS/LM–based macroeconomics provides a link between the financial market and the real economy, it does not remove the veil of money from the financial market itself. It only explains the impact of the interest rate on *aggregate* demand. The interest rate, in turn, is also explained by *aggregate* magnitudes only, namely total demand for and total supply of money. Macroeconomics that rests on the IS/LM–model only highlights relationships between *aggregates*. It does not shed light upon the individual cash flows. Therefore, it also does not tell us what is the "real" counterpart of the cash that flows between persons conducting financial transactions. Except for the determination of the interest rate, the financial market could still be taken for a gambling casino.

Considering the subsidiary function of the financial market in traditional Keynesian macroeconomics, it does not astonish that, currently, New- and Post-Keynesian economists construct models that displace it even more. They argue that the interest rate is, in actual life, not determined by market forces on the financial market, but ultimately by the central banks.[14] Therefore, as David Romer maintains, "for a principles-level treatment, one can leave out the money market altogether."[15] Anyhow, after what has been said it should be clear that the aggregative approach, no matter whether the interest rate is determined on the financial market, by the central bank, or both, can not help when it comes to remove the veil of money from the transactions taking place on the financial market.

[13] See Gärtner (2006, pp. 66 ff.).
[14] See Lambsdorff (2011).
[15] Romer (2000, p. 156)

The second way modern theory deals with the transactions on the financial market comes closer to the problem of the veil of money. Commonly, the financial market is thought to exert an allocative function in the economy. More precisely, one holds that it allocates the available *capital* to the most important uses. However, usually the term "capital" is employed in a way that whitewashes the problem at hand. It is anything but unambiguous. In the course of the development of economics, "capital" has acquired numerous different meanings. Inter alia it has been used to denote purely *material things* like produced factors of production or intermediate goods. But it has also been understood as a mere *operand in monetary calculation*, most notably in capital accounting. By stressing the role of capital in financial market theory without clearly defining it, one is able to sidestep the whole problem. For instance, when the renowned economist Frederic Mishkin defines the financial system as "a coordinating mechanism that allocates *capital* to building factories, houses, and roads,"[16] he skips the issue. The expression "capital" does not make clear whether Mishkin is thinking of profit-yielding *money* or of some *material stuff*. One does not learn which of these two, if not both, he considers to be allocated to the "building of factories, houses, and roads." The role of the financial market remains obscure. The veil of money is not removed or explained but even institutionalised, so to speak, in using the expression "capital." It will be shown at the outset of part II that modern economists in general avoid to define capital clearly as either a monetary or a real magnitude. Instead, they treat the financial market in rather vague terms. They do not point out what they consider to be the counterpart of the monetary transactions in the material world.

[16] Mishkin (2008, p. 8, emphasis added)

1.2 Capital, interest, and the financial market

As far as the author of these lines can tell, in modern economics there is no concept that allows for an in-depth analysis of the veil of money on the financial market. The work in hand tries to fill this gap. Its main task will be to flesh out the proposition according to which the financial market allocates "capital." Especially the vagueness of the latter term shall be tackled. Therefore, the two perspectives that seem to be confounded in the term "capital" are separated from each other and both used to analyse the role of the financial market isolatedly. Only after this has been done, they are brought together again and it is demonstrated to what extend they can reasonably be reconciled.

The following study tries to explain all events and institutions as the result of purposeful behaviour. *All theories that are dealt with are therefore analysed with respect to their compatibility with the logic of human action.* Hence, it has become necessary to start with some remarks on human action itself. The corresponding analysis in the first part is based on the methodological work of Ludwig von Mises and the branch of the Austrian School of Economics that follows his lead. However, on one point that is crucial to the topic of this study these authors have to be criticised. They do not properly integrate the *time aspect* into their discussion of the logic of action. This aspect is indispensable for an examination of the financial market as both credit contracts and the phenomenon of interest are *temporal* in nature. Based on the critique uttered by Jörg Guido Hülsmann,[17] chapter 3 refutes the assertion of many Austrian authors to the effect that the time aspect in human action is explained by the *time preference theory*. According to them, time preference is a necessary part of every human *decision*. People, they say, always prefer present goods to future goods. The discussion of their arguments unveils, however, that choices are not determined in this

[17] See Hülsmann (2002).

way. Professor Hülsmann, in his positive theory which is the object of chapter 4, therefore justifiably shifts the emphasis from *choice* towards *action*. He stresses the role of *means* and *ends* – which are categories of action, not of choice – and detects an originary and necessary value-spread between the two. Yet, he overlooks that the decisive economic magnitudes in human action are *costs* and *revenues*, not means and ends. In acting, humans must always trade off between what they give up – the sacrifice or the costs – and what they attain in return – the revenues. This point is elaborated on in chapter 5. In human action, there is an expected value-spread between the incurred costs and the attained revenues. As action always absorbs time, we arrive at a necessary relationship between action and the passing of time, and consequently we obtain the necessary analytical tools to discuss human action on the financial market.

As a by-product of the analysis of human action in the passing of time, some light can also be cast on the phenomenon of interest. In fact, what both the time preference theory as well as Professor Hülsmann's theory say about human action is supposed to explain the existence of interest. Interest is also, as Eugen von Böhm-Bawerk stated, the "soul of credit,"[18] and for that reason alone it must be discussed. Furthermore, interest constitutes the original precedent that created awareness for the veil of money. The question whether it is possible to remove the veil of money from the interest payments has caused endless debates. Thus, there are enough reasons not to bypass the problem.

The difficulty consists in the fact that interest payments appear to flow without any effort being necessary on behalf of the lender.[19] Nothing "real" seems to correspond to the flows of money. The medieval prohibition of interest becomes comprehensible from this point of view. Scattered over the separate chapters of part I, it is argued that interest is not a purely monetary phenomenon without a "real"

[18] Böhm-Bawerk (1921a, p. 22)
[19] See ibid. (p. 1).

counterpart. To the contrary, what can be called *originary interest* is part of every action wilfully effected by humans. In acting, everybody is striving for a subjectively defined surplus of revenues over costs. Monetary interest, as will be added in section 14.2, is only the observable correlate of the overall presence of originary interest in human action.

The results of the discussion of the relationship between human action and the passing of time can also be used to qualify other theories of interest. This is done in chapter 6. The productivity theory, Professor Hülsmann's theory, the time preference theory, and the equilibrium theory of interest are analysed from the viewpoint of the theory developed before. Finally, chapter 7 contains some terminological explanations that are relevant to the topic. Especially the terms "savings," "investment," and "financing" are introduced.

Part II concentrates on the "real," "tangible," or "material" processes underlying the monetary movements on the financial market. It adopts a *technical* standpoint that can be associated with the capital concept called "social capital." It takes a look at the *production process* and explains what is necessary to finance production in a materialistic sense. Whereas modern economists do not provide an answer to this question, the British authors of the *classical school* have employed a concept which is very useful in this regard. Their *wages fund theory* not only provides an explanation of how an economy is financed; it is also compatible with the logic of action. Based on this theory and its refinement by Richard von Strigl,[20] it is demonstrated in chapter 9 that the one and only aspect that has to be taken account of in financing production is constituted by the *sustenance of the people that participate in the production process*. They are supported out of the wages fund which is a fund consisting of consumers' goods. Without the maintenance of the producers – mainly the workers – being assured,

[20] See especially Strigl (1934b).

production can not take place. The maintenance of all other things that are necessary in production, for example machines, tools, buildings, and raw materials, do not make necessary any arrangements distinct from the sustenance of the workers. No additional financing is required. Thus, the role of the financial market in this materialistic sense can only be to help to allocate the available and saved fund of consumers' goods to the producing people.

The wages fund theory or, as it was called later on, the *subsistence fund theory*, has been abandoned at the end of the nineteenth century. Later authors who attempted to resurrect it, especially Frank Taussig,[21] Walter Eucken,[22] and the already mentioned Richard von Strigl, did not succeed. It therefore seems to be appropriate to give an account of why it is employed in the present thesis. For that purpose, chapter 10 presents the main arguments that have been brought forward against the subsistence fund theory. In the end, they are all beside the point. Most of the criticisms stumble over the imprecise use of the term "capital." Whereas the subsistence fund theory rests upon a *materialistic* notion of capital, it is criticised from the point of view of capital concepts that stress the *value* aspect. If one takes this into consideration, it can be shown not only that the subsistence fund theory does not have to be dismissed, but even that it is able to complete some of the concepts that have superseded it. Especially the theory of marginal productivity which John Bates Clark[23] used to combat the classical theory must be mentioned in this connection. All things considered, an up-to-date version of the subsistence fund theory can illustrate from a materialistic point of view what it means to finance the economy.

Part III analyses the topic from the opposite perspective. Its object are the *monetary transactions* themselves. In the market economy, those who direct the

[21] See Taussig (1896).
[22] See Eucken (1954).
[23] See Clark ([1908] 2008).

production processes have never heard of something called “subsistence fund” or “fund of consumers’ goods.” Instead, they orientate their actions by actual or expected market prices. They calculate in money, and their primary end is to make money profit. It can even be maintained that the striving for money income constitutes the organisational principle of the exchange economy.[24] The capital concept that can be associated with this organisational principle is called “business” or “private capital.” The discussion of this concept in the chapters 12 to 14 mainly builds upon the works of Robert Liefmann,[25] Ludwig von Mises,[26] and Hanns Linhardt[27] who all tried to stay in close contact with common business practices. As long as the Generally Accepted Accounting Principles are adhered to, a point which these authors did not pay attention to, capital accounting is perfectly compatible with the logic of action as expounded in part I. In accounting, capital serves as a calculatory device that helps to determine business profits as the spread between money *revenues* and money *costs*. The point of reference of capital in this sense is money *costs*. The capital traded on the financial market, then, can be understood to be money that allows the borrowers to incur costs.

The rest of part III deals with the reconciliation of the business notion of capital with the results of the discussion of the social notion of capital. If the materialistic function of the financial market consists in the allocation of a fund of consumers’ goods, as is shown in part II, the monetary transactions that take place on this market must bear a relationship to this fund. In order to disclose this relationship, the purchasing power of money is discussed at length. Chapter 15 contains some general considerations on the purchasing power of money. In chapter 16 it is shown that to everyone, even to businessmen, the only thing that counts when they calculate in money is the power of the latter to purchase consumers’ goods. Nobody orientates his

[24] See Liefmann (1930, p. 79).
[25] See Liefmann (1923).
[26] See Mises (1949).
[27] See Linhardt (1953).

actions by the power of money to purchase production goods. This is one of the main results of the present study. *There is indeed a connection between the subsistence fund and money. The purchasing power of money does not relate to all goods, but only to those that are considered to be consumers' goods*. This result has been indicated before by economists endorsing the claim theory of money. In chapter 17, however, these authors are criticised for taking an undue shortcut in order to come to their conclusion. Chapter 18 shows that what has been said on the purchasing power of money in general holds for the *financing* of the economy, too. Also the purchasing power of money that is necessary to finance production only relates to the saved fund of consumers' goods that is available to sustain the people. Finally, this argument is extended to the financial market itself in chapter 19. The transfer of money savings, for example in the form of credit, corresponds to the transfer of power to purchase consumers' goods. This point is what the veil of money conceals and that must be considered to be the link between the "real" and the financial sector.

Part IV centres upon the consolidation of our assertion that everyone demands money merely because of its power to purchase consumers' goods. First of all, it is demonstrated in chapter 21 that our results are perfectly compatible with the so-called circulation credit theory of the business cycle Friedrich von Hayek has received the Nobel Prize for.[28] Particularly the original formulation of this theory by Ludwig von Mises[29] and the later version by Richard von Strigl[30] are congenial to our discussion of the purchasing power of money. Furthermore, all versions of the circulation credit theory of the business cycle that do not confirm our results can be proven to contain flawed arguments.

[28] See especially Hayek ([1935] 2008).
[29] See Mises (1912).
[30] See Strigl (1934b).

By reference to the German economic crisis of 1873, chapter 22 describes the effects of artificially created credit on the economy. This constitutes the second way that our theoretical results are substantiated. It can be demonstrated that the events during this episode are compatible with an interpretation of the crisis based on the version of the circulation credit theory of the business cycle which we have found to be the correct one. The additional credit that was inserted into the economy by the financial system after the Franco-Prussian War caused reactions that indicate that the entrepreneurs were calculating as if the subsistence fund had increased. That is, in the eyes of the businessmen, credit in general bore a close relationship to the fund of consumers' goods. Because of the credit expansion they acted under the illusion that more workers could be sustained for a longer time. Especially long-term projects like railways were undertaken and a boom began. As soon as it became apparent that the boom had been built on sand and that, in reality, the subsistence fund did not suffice to finance all started projects, the bust set in. In addition, it can be demonstrated that the accounting rules that were in force in the 1870's have contributed to the strength of the crisis in a way that fits our framework. These rules led many corporations to pay dividends out of unrealised profits. Thus they further diminished the subsistence fund that was too small anyway in the light of the illusion created by the credit expansion.

The extensive discussions that have become necessary to brush aside the veil of money have not left much room for the explicit treatment of economic growth. At some places, for instance section 18.2.1, this topic and the possible connection to our analysis are hinted at. But the main contribution of this work concerning the relationship between the financial market and economic growth must be seen in the clear separation of the two issues that are usually jumbled up in the conventional capital concept. That this weakness has not only stricken financial market–, but also growth theory is pointed

out over the course of the discussion of the conventional capital concept in the beginning of part II.

The work in hand demonstrates how the veil of money can be removed from the activities on the financial market. In order to do so, the text has to adopt a roundabout way of reasoning. Some issues are touched upon that do not seem to be connected to the main stream of argument. Among other things, questions of methodology, monetary theory, and capital accounting are dealt with. This procedure has become necessary because the linkage between the real and the financial sector constitutes one of the most intricate problems of economic theory and could not be treated in depth otherwise. In turn, the results we obtain are not confined to the financial market. We remove the veil of money not only from the financial market itself, but from monetary transactions in general. To return to the expression of John Stuart Mill, the following study contributes to the understanding of the link between “the outward mechanism of paying and spending” and the “realities of the phenomena.”

Part I: Action in the passing of time

2. The logic of choice versus the logic of action

2.1 Methodological individualism

The following study adheres to methodological individualism. As far as it is possible, all phenomena and events are explained by deliberate acts of directly or indirectly involved persons. The arguments do without non-human factors like acts of God, natural disasters, or "mysterious forces that defy any analysis and description."[31] Of course, it cannot be denied that pure coincidences occur frequently and that it would be an interesting and useful task to examine their impact on society. But such an analysis presupposes that one already knows how humans react, and therefore, by implication, how they act and interact. Without this knowledge one either has to explain even the everyday transactions in society by means of "mysterious forces," or one has to hypostatise. Society, then, would appear "as an entity acting of its own accord and on its own initiative."[32]

Such and similar explanatory approaches are avoided. Instead, all institutions and organisations are regarded as a result of interwoven individual acts. *Hence, all theories that are dealt with are checked for their compatibility with individual human action.* It is especially Ludwig von Mises, writing in the tradition of the Austrian School of Economics, who highlights the necessity for the social sciences of staying in touch with the actions of individual.

> In studying the actions of individuals, we learn also everything about the collectives and society. For the collective has no existence and reality but in the actions of individuals. It comes into existence by ideas that move individuals to behave as members of a definite group and goes out of

[31] Mises (1962, p. 82)
[32] Ibid.

> existence when the persuasive power of these ideas subsides. The only way to a cognition of collectives is the analysis of the conduct of its members.[33]

The work in hand applies this individualistic approach to the entity called "financial market." As far as possible, both the monetary phenomena and the "real" processes underlying them will be explained as the result of individual plans and actions. Afterwards it will be easier to find the common ground of the real and the monetary side of the issue.

Before we are able to explain anything by means of human acts, it is necessary to obtain a clear theoretical understanding of human action itself.[34] In this, the following discussion rests heavily on the work of Mises. During his whole career, the latter has shown a profound interest in the methodology of economics, and especially in the logic of action[35] which he calls "praxeology." The scope of praxeology is not to analyse *individual* acts, but "*human action as such*, irrespective of all environmental, accidental, and individual circumstances of the concrete acts."[36] For Mises, all categories that are necessary to interpret social phenomena are already implied in the "indisputable axiom of action,"[37] i.e., the axiom according to which people act purposefully.[38]

> The very category or concept of action comprehends the concepts of means and ends, of preferring and putting aside, viz., of valuing, of success and failure, of profit and loss, of costs.[39]

[33] Ibid. (p. 81), see also Mises (1949, p. 42).
[34] See Hülsmann (2006, p. 128).
[35] See Mises (1933, 1949, 1962, and [1957] 2007).
[36] Mises (1949, p. 32, emphasis added)
[37] Hoppe (1995, p. 26)
[38] See Selgin (1990, p. 14).
[39] Mises (1962, p. 8)

Now, as we are acting beings ourselves and therefore *know* what it means to act, we have an *a priori* knowledge of these categories. And as we *know* about the truth of these categories *a priori*, any theorems that can be deduced from them are likewise *universally* valid.[40] In fact, according to Mises's pupil Murray Rothbard, the whole fabric of economic theory can be spun from the action-axiom. Among others, the law of diminishing marginal utility and the law of optimal returns are immediate logical implications from this premise.[41]

But this is not to say that we do know anything *a priori* about the *concrete content* of actions, that is, about the costs, means and ends themselves.[42] Why people act how they act, why they prefer some goods to others – these questions lie outside the realm of praxeological laws. The concrete actions are, of course, subject to the universal laws of human action as far as they go. But the cause of their *direction* is *human choice*. And the content of the latter, as long as man is regarded as having a free will, cannot be said to follow established laws. Human choices and human preferences are *not determined in advance*.[43] They cannot be explained theoretically, but only historically, that is, out of context.[44] One cannot predict how and when they change. We therefore think it better to define praxeology as the analysis of the *pure logic of action*, not "of the *pure logic of choice*" as Professor Selgin[45] proposes. In this, Murray Rothbard agrees with us: "[T]o the praxeologist, economic theory […] deals not with the content of human valuations, motivations, *and choices*, but with the formal fact that people engage in […] motivated action."[46]

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[40] See Rothbard (1997, pp. 102 ff.), Mises (1949, p. 36).
[41] See Rothbard (1997, p. 104).
[42] See Mises (1962, p. 43).
[43] See Hülsmann (2003a, pp. 63 f.).
[44] See Mises (1949, pp. 30 ff.).
[45] Selgin (1990, p. 18, emphasis added)
[46] Rothbard (1997, p. 34, emphasis added)

To give an example, concrete prices are facts of history. The choices of consumers change – a phenomenon called fashion – and so do the prices of different clothes, houses, fruits, and all other kinds of goods. But the theoretical laws governing the formation of these prices, like the law of diminishing marginal utility, do not change. They hold for all human actions. The praxeological approach to economics is concerned with these universal laws only. Once established, they can be used to help in the interpretation of historical events.

2.2 Interest theory and cost theory

There are some laws of human action that are widely accepted by economists. The law of diminishing marginal utility was just mentioned. But there are other laws or supposed laws that have not yet been formulated in a way to be acceptable to everyone. An important area of vagueness is the relationship between time and action. In this area, Mises's results are objectionable. He does not clarify the relationship between human action and the passing of time beyond any possible doubt. However, this point is essential to the analysis of the financial market. Credit contracts involve at least two transactions – the lending (or borrowing) and the redemption. Each takes place *at a different point in time*. Furthermore, those who borrow money are ready to pay interest. If one wants to explain why individuals are willing to conclude credit contracts and even pay a price for money that is only borrowed for a limited period of time, it is necessary to understand how they integrate the lapse of time into their behaviour. Without an idea of the relationship between human action and time, the whole financial market which mainly consists of intertemporal contracts could not be explained based on methodological individualism.

Therefore, the following three chapters contain a detailed analysis of the relationship between the passing of time and the logic of action. Usually, the whole

problem area is treated as a matter of *choice*. This is true even for Mises and his followers although it is their declared intention to formulate a logic of *action*, not of choice. It will be shown that this approach misses the point. By their very nature, choices take place in *instances of time*. Choices therefore cannot explain phenomena that take a *period of time*. For this reason, we will see, both the opportunity cost theory and the time preference theory of interest cannot be of help in the analysis of the time dimension of human action. They concentrate on *choices* – which are timeless – and neglect *action* – which has a time dimension. Chapter 3 concentrates on the notion of time preference which Mises himself[47] and his followers use to comprise the time aspect of action. Based on arguments advanced by Jörg Guido Hülsmann,[48] the discussion shows that, contrary to what these authors maintain, *time preference is not part of the logic of action*. It therefore also cannot be employed in the explanation of the interest phenomenon as its champions do. Chapter 4 is dedicated to the theory of interest Hülsmann sets against the time preference theory. As he is aware of the latter's weakness, he tries to construct an interest theory which is solely based on the logic of action. Although he turns the debate into the right direction, his positive arguments contain one shortcoming. He stresses the role of *means*, which is a *technical* category, and neglects the role of *costs*, the relevant *economic* category.

The term "costs," however, is anything but unambiguous. The generally accepted opportunity cost theory understands costs as a matter of choice. The costs of any *decision*, it says, are constituted by the forgone opportunities. Referring to George Reisman,[49] chapter 5 demonstrates that opportunity costs are not costs at all. In *choices*, no costs appear. Costs only have to be incurred in *action*. I will argue that they only appear when an actor actually has to *sacrifice potential consumption in order to obtain*

[47] Most notably see Mises (1949).
[48] See Hülsmann (2002).
[49] See Reisman (1998).

future results. It is this aspect that connects human action to the passing of time. As it now incorporates the time aspect, the logic of action can be employed to explain the existence of interest. The veil of money is revealed from this problem. Interest not only exists in the monetary economy, but it is based on the logic of action itself.

In chapter 6, other theories of interest, including the productivity theory of Böhm-Bawerk and the modern equilibrium approach, will be examined critically. Based on the results of the discussion, chapter 7 contains a short description of how the relevant terms “saving,” “investment,” and “finance” are related to the logic of action.

3. The time preference theory of interest

3.1 Originary interest

It has been recognised for centuries that the passing of time is not without influence on human behaviour. And it is especially on the financial market that this becomes visible in the form of *interest* that has to be paid for borrowed money. The longer the period of time that money is borrowed, the higher interest payments become. Now, as Mises and his followers show, the role of interest rate on loans is "one of complete and utter dependence on the rate of interest as determined"[50] elsewhere. According to them, the interest rate pervades the whole economy.[51] All producers in a market economy are producing because they expect to profit "from the *price spread* between their selling price and their aggregate factor prices."[52] These price spreads would even exist if there was no loan and no capital market and therefore no plainly visible interest rate.[53] Without these spreads, there would be no "incentive for investment"[54] in the first place. It is important to add that, in the eyes of the named theorists, these price spreads do not disappear in the *evenly rotating economy*.[55] In other words, they still exist in *equilibrium*, that is, after all "latent forces operating which will go on bringing about price changes" have acted out and, "provided no new data appear, the final price and the final state of rest are established."[56] The *equilibrium* spread between the prices of consumers' goods and the sum of the prices of the factors of production employed in their production is called "originary interest."[57]

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[50] Rothbard ([1962] 2004, p. 425), see also Mises (1949, p. 524), Dorp (1937, p. 62), and Fillieule (2010, p. 126).
[51] See Fillieule (2010, p. 124).
[52] Rothbard ([1962] 2004, p. 423, emphasis by Rothbard), similarly Hülsmann (2002, p. 77).
[53] See Rothbard ([1962] 2004, pp. 425 f.).
[54] Ibid. (p. 425)
[55] See Mises (1949, p. 521).
[56] Both quotes from ibid. (p. 247).
[57] See Mises (1949, p. 521), also Hülsmann (2002, p. 87), Fillieule (2005, p. 5).

If one succeeded in explaining the existence of originary interest based on the logic of action, one would have incorporated the time aspect into the latter. That is why it is dealt with in depth here. Also Mises and his followers try to accomplish exactly this. They try to formulate a theory of originary interest that is based on the logic of human action.

Depsychologising Frank Fetter's exposition,[58] Mises[59] explains the phenomenon of originary interest by the existence of "time preference" – the fact that men "discount future goods as against present goods."[60] As this statement alone would be very general, he confines the discount to present and future goods "of the same kind and quantity."[61] This expression goes back to Böhm-Bawerk. "The core and central point of interest theory," the latter expounds, is that "as a general rule, present goods are worth more than future goods of the same kind and quantity."[62] Mises erases the expression "as a rule" and maintains that this statement holds generally.[63]

It should be noted that this qualification – that only goods of the same kind and quantity are concerned – boils down to the *ceteris paribus* condition.[64] It separates Mises's version of the time preference theory from the one that can be found in modern textbooks. There, time preference depends on the relation between the present and the future endowment of the deciding person. Someone who owns a lot of present consumers' goods, but only few of them in the future, it is said, will "exhibit negative time preference […]. Such a person is willing to forgo 1 unit of current consumption in return for less than 1 unit of future consumption."[65] Thus, it follows that, "[f]or most of us, […] the question of whether time preference is positive, negative, or neutral will be

[58] See Pellengahr (1996, p. 11). Fetter's exposition can be found in Fetter (1915, chapter 20).
[59] See Mises (1949, pp. 521 ff.).
[60] Ibid. (p. 523)
[61] Ibid. (p. 521)
[62] Böhm-Bawerk (1921b, p. 318, see also p. 327). Similarly Fisher (1930, p. 36).
[63] See Hülsmann (2002, pp. 79 f.).
[64] See Huerta de Soto (2009, p. 272, n. 9).
[65] Frank (2008, p. 158, emphasis erased)

a matter of where we happen to be on our indifference map."[66] Aside from the fact that it is difficult to define 1 unit of consumption: in making the concept of time preference depend on the relative endowment of the deciding person in the present and in the future, the *ceteris paribus* condition is violated. As we are looking for a relationship between human action and the passing of time, we must ignore such endowment effects and concentrate on the isolated time aspect. Therefore, the point of view presented in this paragraph is not dealt with in depths in this study.

The expression "preference" as used by the time preference theorists indicates that they think it is subject to human *choice*. This would imply that one could have a preference for time or not, just as one can have a preference for apples or not. But this is not how Mises wants this term to be understood: "*Time preference is a categorial requisite of human action*."[67] It appears in *all* actions, and can therefore not be subject to human discretion. And as time preference – a categorial requisite of human action – manifests itself in the phenomenon of originary interest,[68] originary interest is itself a category of human action.[69] According to Mises, it "is operative in any valuation of external things and can never disappear."[70]

3.2 Time preference and the logic of action

If Mises now went on to show that time preference indeed was a "categorial requisite" of human action, our only point would be that the expression "preference" is misleading. Apart from that, the relationship between action and time would be clarified. Yet, he does not succeed in basing time preference in the logic of action.[71]

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[66] Ibid.
[67] Mises (1949, p. 481, emphasis added)
[68] See ibid. (p. 521).
[69] See ibid. (p. 524).
[70] Ibid. (p. 524)
[71] His arguments also do not seem to be accepted, or even recognised, by other economists: "To our knowledge no one has ever provided convincing evidence that there is in fact normally positive time

First of all, despite his stand that "what praxeology asserts with regard to human action in general is *strictly valid without any exception for every action*,"[72] Mises admits the existence of actions that are *not* affected by time preference.[73] For example, he mentions the miser who "denies himself even the indispensable minimum of food."[74] It should be noted that Mises has no problems with the "normal" miser who "in spending some of his means for a scanty livelihood, prefers some amount of satisfaction in the nearer future to that in the remoter future."[75] *This* miser "does not contradict the universal validity of time preference"[76] as understood by Mises. However, we are only concerned here with the special kind of miser mentioned above that he considers as "extreme."[77] It is of no help to call this behaviour a "pathological withering away of vital energy,"[78] in order to exclude it from the realm of human action. Also the said miser does nothing else than to apply means to achieve his ends. By considering this or similar examples, like suicides,[79] as irrelevant for his theory, Mises violates his own postulate according to which "[t]he ultimate judgments of value and the ultimate ends of human action are given for any kind of scientific inquiry; they are not open to any further analysis."[80] Elsewhere he even admits that

> [t]he polar notions normal and perverse […] can be applied biologically for the distinction between those whose behavior preserves the vital forces and those whose behaviour is self-destructive; […] However, in the frame of a theoretical science of human action, there is no room for such a distinction.[81]

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preference, or even specified an empirical test capable of' determining whether there is or not." (Olson/Bailey 1981, p. 1)
[72] Mises (1962, p. 44, emphasis added)
[73] See Hülsmann (2002, p. 80).
[74] Mises (1949, p. 487)
[75] Ibid.
[76] Ibid.
[77] Ibid.
[78] Ibid.
[79] Ibid.
[80] Ibid. (p. 21)
[81] Ibid. (pp. 95 f.)

We refrain from asking what would happen to the praxeological approach to economics if one were to admit that there are exceptions to the rule that conscious human action is the application of means to attain ends.

But, apart from the exceptions to time preference conceded by Mises, how does the argument itself stand up to closer scrutiny. He says the following:

> The very act of gratifying a desire implies that gratification at the present instant is preferred to that at a later instant. He who consumes a nonperishable good instead of postponing consumption for an indefinite later moment thereby reveals a higher valuation of present satisfaction as compared with later satisfaction. If he were not to prefer satisfaction in a nearer period of the future to that in a remoter period, he would never consume and so satisfy wants. He would always accumulate, he would never consume and enjoy. He would not consume today, but he would not consume tomorrow either, as the morrow would confront him with the same alternative.[82]

Thus, the working of time preference can be seen in the fact that man does not postpone consumption to eternity – *a physiological necessity to survival*. The same point of view can be found already in Frank Fetter and Franz Čuhel, both of whom Mises explicitly[83] follows. According to Frank Fetter "[i]t is not rational (or even possible) to provide for the future until a certain minimum provision, at least, is made for the present." For him, the reason for time preference, i.e., "[t]he impulse to seek immediate gratification," is rooted "deep in man's biologic nature."[84] And Franz Čuhel writes that "men would be in the same dilemma as Buridan's ass," i.e., *they could never consume*, "if the future subjective utility [Verwendungsbegehren] of a specific indivisible good caused the

[82] Ibid (p. 481)
[83] See Mises (1940, pp. 443 f.).
[84] The quotes can be found in Fetter (1915, pp. 239 f.).

same desire [Verwendungsegenz] in them as the present subjective utility of the same good."[85] Thus the desire for the present utility *must*[86] be greater than the desire for the future one. A similar thought is uttered by Richard von Strigl in 1923: "The existential physiological needs must *necessarily* appear on the individual value scale."[87]

From a physiological or biological standpoint, the argument cannot be challenged. Yet, Mises maintains something in addition. He claims that time preference is not only prevalent in "situations in which bare life in the strict sense of the term is at stake."[88] Instead, we

> must conceive that consumption and enjoyment of any kind presuppose a preference for present satisfaction to later satisfaction. The knowledge provided by this insight far *exceeds the orbit for which the physiological facts concerned provide explanation*. It refers to *every kind of want-satisfaction*, not only to the satisfaction of the vital necessities of mere survival.[89]

But "every kind of want-satisfaction" is *not necessarily* the object of human action. *It is a matter of choice* whether one wants to consume more than the physiological minimum or not. In no way can it be said to be a "categorial requisite of human action."

What is more, even the consumption that is essential for survival is not forced on us by praxeological laws. First of all, there are not always enough consumers' goods available to survive. Does this mean that a person in such a situation does not act (until he dies)? Second, and more important, there exist and always have existed men who value specific things more than their own survival. Hülsmann mentions warriors and martyrs.[90] It must be added that even Mises accepts this point elsewhere and in a

[85] Čuhel (1907, p. 304)
[86] See ibid.
[87] Strigl (1923, p. 112, emphasis added)
[88] Mises (1949, p. 484)
[89] Ibid., emphasis added.
[90] See Hülsmann (2002, p. 80).

slightly different context. For the Christian martyrs, he says, "martyrdom appeared the means to attain an end which in the martyr's opinion warranted supreme and everlasting happiness."[91] Also in his opinion, therefore, *the will to consume even the minimum is not fixed in man by some praxeological law*. He only forgets about this in his treatment of time preference. For illustration purposes, the argument can be applied to the case of breathing. Man has to breathe to survive. Nobody would deny that. But it is *not* the logic of action that forces us to breathe.

Before we go on to examine further details of the time preference theory, one possible counter-argument to our analysis shall be discussed. Proponents of the concept of time preference might argue that they could easily explain the mentioned examples – the extreme miser, the warriors, and the martyrs – within their theoretical framework. The miser, they might content, does not at all delay consumption to eternity. Instead, he *does* consume. Only that for him consumption does not consist in eating, drinking, and an easy life, but in frugality and the sensation of hunger. Similar arguments can also be brought forward for the martyrs and warriors. What they do could be said to constitute consumption for them. Thus, even these extreme examples could be said not to contradict time preference. The persons in question also prefer present consumption, that is, present hunger and present self-sacrifice, to future consumption.[92]

Yet, this argument is irreconcilable with the time preference theory itself. For it gives up the distinction between present and future goods. If the saving of the miser is interpreted as an act of consumption, any act can be so. *Everything one does* must be called consumption because, apparently, one *wants* to do it. Someone who saves an apple for next month does not *save* at all. Instead, he *consumes*. He prefers the apple in his fruit bowl to the enjoyment of eating it right now. Hence, the decision whether to eat the apple is not a decision between a present good and a future good. It is rather a

[91] Mises ([1957] 2007, pp. 13 f.)
[92] Professor Thorsten Polleit has drawn my attention to this argument.

decision between a present good on the one hand – eating the apple – and a *combination* of a present good *and* a future good on the other. This is so because in not eating the apple one obtains not only a future good – the eating of the apple next month – but also a present good – *the enjoyment of saving*. *If every act constitutes consumption, there is no pure future good anymore that could be traded off against present goods.* Every sacrifice of a good in order to obtain a future good would be a consumable present good, too, and would have to be *added to* the future good, not *traded off against* it. The term "time preference" would lose its meaning.

To return to our main argument. We have found that it is a matter of preferences, of choice, whether we want to consume or not. *In the formulation that Mises gave to it, time preference is a matter of choice and not a law of action.* This fact is often clouded when the time preference theory is exposed in money terms. The example Mises chooses to illustrate his argument is a case in point. He compares 100 dollars today with 104 dollars next year, the former being the present good, the latter the future one.[93] First of all, Mises's example implies that he regards 100 dollars today as the same good as 100 dollars next year merely because they are physically identical.[94] As Hülsmann remarks, this view "confuses the physical aspect of things with the economic (value) aspect."[95] What is also important, *money is a non-perishable good*. 100 dollars today imply the possibility of having 100 dollars next year. All one has to do is to keep the 100 dollars under the pillow. By having 100 dollars today one has the possibility to choose whether to use them today or next year, and this is, of course, more valuable *ceteris paribus* than only being able to use them next year. This is the case for all non-perishable goods and has nothing to do with time preference. The good "100 dollars next year" is a subset of the good "100 dollars today," the latter, therefore, being valued

[93] See Mises (1949, p. 483).
[94] See Hülsmann (2002, p. 81).
[95] Ibid.

higher than the former. To construct a fitting example Mises should have given the man the choice between "100 dollars today but not next year" and "104 dollars tomorrow but not today."

The same flaws can be found in Rothbard's exposition of the pure (= originary) rate of interest. He states that, "[b]ecause of the universal fact of time preference, a particular good is worth more at present than is the present prospect of its becoming available as a present good at some time in the future."[96] Rothbard here utters the same deterministic view on time preference that was criticised above. Furthermore, he explicitly says that "it is the *same* satisfaction (or "good") that is being compared over the periods of time."[97] So Rothbard as well confuses the physical with the economic aspect.[98] Lastly, he introduces money as being "for the time market as well as for other markets […] *the* present good, and *the future goods* are present expectations of the future acquisition of money."[99] We have shown already that the fact that present money is valued higher does not follow from this theory, but simply from its non-perishable character.

It might be objected that "even money cannot be stored without cost,"[100] and that, therefore, even money interest may become negative.[101] This is, of course, true. Likewise, if money consisted in a perishable good, a negative rate of money interest would also be easily imaginable. However, I conceive the storage costs to be of minor

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[96] Rothbard ([1962] 2004, pp. 375 f., emphasis erased)
[97] Ibid. (p. 15, n. 15, emphasis by Rothbard)
[98] See Hülsmann (2002, p. 81). On this point, see also Hayek (1941, p. 418):
It was only because they [Böhm-Bawerk and his followers] had assumed that constant tastes implied that equal quantities of a commodity at two dates ought to have the same marginal utility to a person at a particular moment that they had to introduce a special explanation as to why this was in fact not the case. In the particular form in which they gave it, their explanation has little meaning. It implies a comparison between the present (absolute) utility of a future commodity and its future (absolute) utility which is regarded as its true utility. Such a comparison does not arise in any act of choice, since by the nature of things it is impossible to contemplate anything at one and the same time both from the standpoint of the present and from the standpoint of the future.

[99] Rothbard ([1962] 2004, p. 376, emphasis changed)
[100] Stigler (1946, p. 213)
[101] See Pellengahr (1996, p. 20).

importance. After all, small amounts of money can be stored nearly without costs, and large amounts of money are usually not stored, but lent out. It is hard to imagine that storage costs could gain significant importance.

After what has been said, Hülsmann is correct in calling Mises's explanation of time-preference "the consumption theory of time preference."[102] It is based on the observation that people consume, which is an empirical or historical fact, but not a praxeological law.

The essence of this point is that time preference cannot be found in the relationship between different ends in mere human choice, like between consumption today and consumption tomorrow. As we have seen, there is no order of ends fixed in the value scales of individuals that forces them to consume at all in order to survive, i.e., that forces them to prefer present ends to future ones. We are here in an area open to human discretion. Time *preference*, therefore, does not explain the relationship between time and action. It is not the cause of originary interest because it does not necessarily exist, at least in the way as it has been presented by Ludwig von Mises. Seeing this shortcoming, Professor Hülsmann[103] looks for originary interest directly in the relationship between ends and means, i.e. *in the logic of action itself*, not in the concrete content of human preferences and choices.

[102] Hülsmann (2002, p. 79). Professor Gunning (2005, p. 83) is searching "in vain" for corresponding textual evidence. However, the passage by Mises he himself quotes seems to contain support enough for this interpretation.
[103] See Hülsmann (2002).

4. Originary interest as value-spread between means and ends

In the last section, it was shown that Mises is not correct in regarding the phenomenon *he* called "time preference" as a necessity of the logic of action. In consequence, also his theory of originary interest cannot be said to be praxeological. He does not succeed in bringing the passing of time and the logic of action together. In his paper, Professor Hülsmann tries to develop a purely praxeological theory of interest without accounting for time preference as a fundamental cause of originary interest. For him, originary interest is to be found in the value-spread between the means and the ends of human actions. "*Originary interest is the fundamental spread between the value of an end and the value of the means that serve to attain this end*."[104] As reason for the fundamental value spread he mentions the fact

> that the purpose of employing a means can only be to attain the end. The end is what really counts for the acting person, whereas the means is merely the thing or the action that is in between his present state of affairs and the state of affairs in which his end is realized. […]
> [I]t follows from this fact that, by their very nature, ends have, in the eyes of the acting person, a higher value than the corresponding means.[105]

In the following five pages, Hülsmann explains why this fundamental value spread has been ignored so far.[106] His main point is that "it did not square with mainstream views on value and value imputation."[107] According to him, also most Austrian economists, following the lead of Carl Menger,[108] have explicitly or implicitly assumed that the

[104] Ibid. (p. 87, emphasis by Hülsmann)
[105] Ibid. (pp. 86 f.)
[106] See ibid. (pp. 88-92).
[107] Ibid. (p. 88)
[108] See Menger (1968).

value of the ends "is fully imputed on the means,"[109] thereby not leaving any value spread that could explain the existence of originary interest.

By claiming this, Professor Hülsmann does not totally do justice to these authors. It is true, even Mises declares that "the value attached to a product is *equal* to the value of the total complex of complementary factors of production."[110] But it is too much to say, in reference to this statement, "that Mises, at least occasionally, did champion value imputation and that he therefore believed there was no value spread between means and ends."[111] For Hülsmann neglects a very important part of the sentence he himself quotes. Mises only holds this equality between means and ends "due allowance being made for time preference."[112] We see that Mises actually pays attention to the value spread between means and ends. This can be seen even better in the following passage:

> The prices of consumers' goods are by the interplay of the forces operating on the market apportioned to the various complementary factors cooperating in their production. As the consumers' goods are present goods, while the factors of production are means for the production of future goods, and as present goods are valued higher than future goods of the same kind and quantity, the sum thus apportioned, even in the imaginary construction of the evenly rotating economy, falls behind the present price of the consumers' goods concerned. This difference is the originary interest.[113]

The difference between Mises and Hülsmann is the cause to which they assign the spread between means and ends. Mises thinks that the cause is time preference, the fact that "present goods are valued higher than future goods of the same kind and quantity."

[109] Hülsmann (2002, p. 89).
[110] Mises (1949, p. 332, emphasis added)
[111] Hülsmann (2002, p. 89)
[112] Mises (1949, p. 332)
[113] Ibid. (p. 521)

For him, this relationship is fundamental. Hülsmann thinks that the spread between means and ends is fundamental and independent of the time factor.

If originary interest is defined, according to Professor Hülsmann, as the value-spread between means and ends, two things are essentially needed as given (or at least determinable). These are the value of the means and the value of the ends. This is the weak spot of Hülsmann's theory of interest. The problem with his argument is the lack of an explanation of how the value of the means is derived. Without the latter one cannot say anything about the nature of the value-spread between means and ends. In addition, when originary interest is to be the *fundamental* value spread between means and ends, it is necessary that the value of the means is determined in a way independent of originary interest. It would be a logical circle to explain the value of the means as depending on originary interest, and then declare that originary interest depends, next to the value of the ends, on the value of the means. Now, Hülsmann himself provides the following explanation as to the value of the means:

> If a means is ever chosen, then the only purpose of this choice is to attain the end it serves. The very nature of a means implies that it is not sought for its own sake.[114]

Thus the value of the means depends on the value of the end it serves. It is not valued for its own sake. In consequence, before the fundamental value spread between means and ends can be explained, first of all the value of the means has to be derived. And this can only be done by the help of (1) the value of the end, and (2) something in addition. Behind this 'something in addition' "lurks implicitly the rate of interest itself."[115]

[114] Hülsmann (2002, p. 87)
[115] Fisher (1930, p. 55)

Hülsmann is trapped in a logical circle. He does not provide for an explanation of the value of the means that does not presuppose originary interest.

Yet, Professor Hülsmann's attempt to explain originary interest praxeologically does not therefore have to be dismissed. His critique of Mises's explanation of time preference as the source of originary interest remains valid. Time preference as the reason of a value-spread between different ends (present and future ones) is a historical, not a theoretical explanation. The explanation of originary interest has rather to be looked for in the logic of action itself, and this is what Hülsmann has done. But, as was shown above, also in his theory the means derive their value from the ends they serve in combination with an already existing originary interest. Contrary to his opinion, the value-spread between them is not self-explanatory. The value-difference between means and ends must *not be seen as explanans, but as an explanandum.*

5. Costs and revenues

5.1 The economic aspects of action in the passing of time

Both theories so far presented contain each a fundamental truth. The time preference theory looks for the relationship between time an action in the relationship between two goods that are both valued independently of each other: a present consumers' good on the one hand, and a future consumers' good on the other. However, it is deterministic. It does not try to find the time aspect in the *logic of action*, but in *concrete choices*. Professor Hülsmann's theory has it the other way round. It correctly looks for originary interest in action, but does not consider that the value spread between means and ends is not fundamental but presupposes originary interest.

If there should happen to exist a fundamental value spread in human action over time, it must be found between two goods that are valued independently of each other. The value of the means employed cannot therefore be taken as part of the explanation. Man does not compare the means with the ends and then only acts in so far as the ends seem more valuable to him than the means he has to give up. That one needs the means A, B, and C in order to produce the consumers' good D is *a technical, not an economic problem*.[116] In order to become a economic one, there has to be a *trade-off* between the means and the end.[117] To employ the means, e.g. exchanging them, destroying them in production etc., however, does not mean to sacrifice them. There is no trade-off. It is the way they fulfil their destiny.[118] They *have* to be employed this way, they have to be used up – it is part of their *technical* function in production. Otherwise, their existence is good for nothing. To be true alternatives, the options the acting person faces must both be directly valuable to him. The problem that constitutes the subject matter of the following sections is to find these true alternatives that are both valuable to the acting

[116] See Plenge (1964, pp. 123 f.) and Liefmann (1923, p. 539).
[117] See Liefmann (1923, p. 334).
[118] Similarly Liefmann (1923, p. 557).

person, and also to find the reason for the supposed value spread over time between these two. It is *there* that the reason for originary interest, if it should happen to exist, has to be looked for: *between something foregone in the present and something obtained in return in the future*, i.e. between what is given up in the present and what is obtained for it in the future.

5.2 Opportunity costs

5.2.1 Opportunity costs as the conventional notion of costs

When it comes to trade-offs and sacrifices, economists usually think of opportunity costs.[119] To understand the term "opportunity costs" one has to take a short look at value theory.

According to economic theory, value is not attached to goods in an absolute sense. In the eyes of an acting person a good is worth either *more* or *less* than another good. The person ranks the goods, but he doesn't measure their value. Value is rather an ordinal or relative concept. It is a "*trilateral* relationship involving one individual and two economic goods."[120]

> A judgment of value does not measure, it arranges in a scale of degrees, it grades. It is expressive of an order of preference and sequence, but not expressive of measure and weight. Only the ordinal numbers can be applied to it, but not the cardinal numbers.[121]

We recognise value only in human behaviour, i.e., when someone prefers alternative A to alternative B.[122] In this way this person demonstrates[123] that he values A higher than

[119] See Pasour (1978, p. 327).
[120] Hülsmann (2003, p. xxxvi, emphasis by Hülsmann)
[121] Mises (1949, p. 97)
[122] Mises (1933, p. 139)
[123] For more on the concept of "demonstrated preferences" see Rothbard (1997, p. 212).

B. He assigns, so to speak, to each alternative a rank on his individual value scale. *Opportunity cost*, now, "is the evaluation placed on the most highly valued of the rejected alternatives or opportunities."[124] In our case the opportunity costs consist in the abandonment of the alternative B.

For most economists, the term opportunity costs is equivalent to the seemingly more general term costs. Says Mises: "Costs are equal to the value attached to the satisfaction which one must forego in order to attain the end aimed at."[125] He could have said shortly: "The theory of costs […] is a theory of opportunity costs."[126] If one is allowed to draw conclusions concerning the predominant opinion from the practice of current textbooks, this latter sentence seems to be widely accepted. As an example, we quote the textbook of which the Nobel laureate of 2008 is one author. It says that "in the end, all costs are opportunity costs."[127]

5.2.2 The position in time of the alternatives and the discounting process

The opportunity costs concept does not seem to be apt to help us in our search for a necessary relationship between action and the passing of time. It cannot explain originary interest as a value spread between something of value foregone today and something of value obtained in exchange in the future. This is the case because the opportunity cost theory does not incorporate the influence of time. Both of the two alternatives A and B, not only the option A that is chosen, may well lie in the future. To give an example, our actor might have to chose between employing his labour and his tools in building a boat or in building a hut. Both options can only be obtained after a considerable lapse of time. *Preferring one to the other does not tell us anything about the valuation of differences in time*. Both options lie in the future.

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[124] Buchanan (2008, p. 198, emphasis erased). See also Thirlby (1946, p. 33) and Coase (1968, p. 118).
[125] Mises (1949, p. 97). Similar Kirzner (1963, p. 184).
[126] Knight (1935c, p. 40). See also Thaler (1980, p. 44).
[127] Krugman/Wells (2009, p. 7). See also Mankiw (2004, pp. 5 f., 51 f.).

This objection might be answered by the following argument. Yes, it is true, the alternative forgone might well lie far in the future, just like the one chosen. But this does not matter when it comes to decide between the two. What matters is the *present value* of each alternative. All that is needed to know the present value of an alternative is "(1) some idea of the value of the future benefits which that article will yield, and (2) some idea of the rate of interest by which these future values may be translated into present values by discounting."[128] In other words, by discounting its future value we get an idea of the present worth of an alternative. We simply derive its present value. And, in reality, what investors do when they have to decide between two or more alternatives of investment is to compare their present values.[129]

This argument has some merits. It cannot be denied that the present value plays a prominent role when it comes to decide between two alternatives. But it does not help us in our search for the relationship between action and the passing of time. For now we have calculated the *present* value of *both* options. When there should happen to be a value spread between the two, it does not say us anything about its relationship to the passing of time. They are both *present* values. Any differences in value in the course of time, however, can only "be understood if the connection of two production-periods […], and not the concept of equilibrium of one period, is taken into consideration."[130]

Furthermore, the present value of the options does not fall from heaven. It presupposes a known rate of interest. Yet, it is in the relationship between present and future goods that originary interest, if it exists, must be found. That is exactly what we are looking for and we cannot presuppose a rate of interest right from the beginning. And even if we could accept the way the present value is derived at, there is another, more general problem with opportunity costs that will be dealt with in the next section.

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[128] Fisher (1930, p. 15)
[129] See e.g. Ross/Westerfield/Jaffe (2005, pp. 60 ff.).
[130] Dorp (1937, p. 5)

5.2.3 Opportunity cost – a matter of choice, not of action

The opportunity cost concept does not allow for the inclusion of time. Opportunity costs, in other words, are not a matter of action but of *choice*. Not only James Buchanan stresses the close relationship between choice and opportunity cost.[131] Also G. F. Thirlby, who published a lot on the cost problem, writes: "By *deciding* to take the preferred course, he [any person] incurs the cost – he displaces the alternative opportunity."[132] According to this opinion, costs appear at the *point of time* when the decision is made and then loose all of their "significance […] because the decision displaces the alternative course of action."[133] However, it seems to be problematical to link cost to choice. *Decisions are not bound up with costs*. To illustrate this hazardous statement, let's have a look at an example.

Small gifts will best maintain friendship. So let us suppose the friends X and Y are on a trip in the mountains. X has two apples in his bag. Y loves apples, but has forgotten to pack one. During the first break X permits Y to take one of the apples. Well, great deal for Y one would say! However, things look different if one accounts for opportunity cost. As soon as Y takes one of the two apples, he abstains from taking the other one. If we assume, for simplicity, that the two apples are alike, then the disadvantage in this decision is just as great as the advantage. According to opportunity cost theory, Y is not better off at all although he has received an apple for free. His decision for one of them costs him the other one.

It is interesting to see that the story would run totally different if X had not offered Y to *take* one of the apples, but if he had *given* him one. In this case, Y does not have any opportunity costs. Those only appear when he has to *choose* like he had to in the first example. From this point of view, as also George Reisman notes, the

[131] Buchanan (2008, p. 198)
[132] Thirlby (1946, p. 33, emphasis added. Similarly on p. 34 and in 1960, p. 149). See also Robbins (1934, p. 2), Knight (1935c, p. 28), Knight (1928, pp. 354 ff.), and Buchanan ([1969] 1999, pp. 3 ff.).
[133] Thirlby (1946, p. 34)

possibility to choose between several alternatives – a possibility that one would think to be beneficial from the point of view of the person choosing – appears to be something bad, even destructive.[134] The best that could happen to anyone would be to have no freedom of choice. No opportunity cost means – from the point of view of most economists – no cost at all.

The reason why the opportunity cost doctrine leads to such perverse conclusions seems to be its neglect of the role of property. Only when I dispose of something, I can *give it away*, exchange it against something else. "[N]o exchange without property."[135] It is different when I have to *choose* between two alternatives. In order to make a decision I do not have to own anything that I then give up because of the decision – remember only the apple example. Lionel Robbins, for instance, does not draw the line between decisions and the giving up of one's property. After he correctly states that "[i]n the theory of exchange […] costs reflect the value of the things surrendered," he adds that "in the theory of production they [costs] reflect also the value of alternative uses of productive factors – that is, of products which do not come into existence because existing products are preferred."[136] "Things surrendered" indeed are a sacrifice and can be called costs. The same does not hold for "alternative uses."

Notwithstanding the numerous statements to the contrary,[137] the actual sacrifice of a good (= cost) is not part of the notion of choice. Costs only appear when one has to give something away, which happens in action, not in choice. In action, property is necessary.[138] As Mises states, "[a]ction always is essentially the exchange of one state of affairs for another state of affairs."[139] In the end, so to speak, "all action is

[134] See Reisman (1998, pp. 460 f.).
[135] Linhardt (1963, p. 232), also Liefmann (1923, p. 542).
[136] Robbins (1934, p. 2)
[137] See e.g. Thirlby (1946, p. 41), Buchanan ([1969] 1999, pp. 8, 41), Baxter/Oxenfeldt (1968, p. 295), Kirzner (1963, p. 145), similarly Robbins (1934, p. 5)
[138] See Fisher (1897a, p. 211).
[139] Mises (1949, p. 195)

exchange." [140] Of course, choices may lead to costs, but only if the choices lead to action or exchange, i.e. the *giving up* "of one state of affairs."

The role of opportunity costs is to remind us of the fact that we have to choose between several alternatives and to help us to find the right decision. "[D]isplaced opportunities are vital in making a business decision, which might indeed be defined as the process of selecting among alternatives."[141] George Reisman is of the opinion that it is not even necessary to introduce the term "opportunity cost" in order to express this thought. "The doctrine of opportunity cost is not required for ascertaining how one might do better. Its sole contribution is obfuscation, not perception."[142] The opportunity cost theory creates costs where they do not exist – in decisions – and neglects costs when they actually arise – in action. That is why it cannot be of help in describing human behaviour in relation to the course of time.

5.3 Costs as consumption sacrifice

5.3.1 The sacrifice of potential consumption

The rest of chapter 5 contains my own stance on the problem in question. We have seen that other authors do not make the necessary distinction between choice and action. When it comes to action, as opposed to choice, both the opportunity cost concept and the time preference theory cannot be applied. To repeat, they are both a matter of choice, and in choice no costs arise as one does not have to sacrifice anything. We have to look somewhere else in order to find what is sacrificed in the present in order to obtain a good in the future, that is, in order to get to understand the relationship between the economic aspects of action and the passing of time. The theory that follows is not new in every detail. A lot of the individual arguments are laid down in the works

[140] Rothbard ([1962] 2004, p. 84)
[141] Baxter/Oxenfeldt (1968, p. 294)
[142] Reisman (1998, p. 460)

of other authors. What I will do is to collect these arguments and put them together in a systematic way. Most notably, the whole problem will *continuously* be regarded as a matter of the logic of *action*, not of *choice*. In this, the subsequent discussion differs from the writings of the economists who have laid the necessary groundwork.

What we need to do now is to have a closer look at the fundamentals of human action. When humans act they apply means to obtain ends.[143] We have seen in the discussion of Professor Hülsmann's theory of interest that means are not valued independently of the ends they serve. Therefore, these means cannot represent the present sacrifice in action that we are looking for. But, one will say, if the means one employs in action do not represent a sacrifice, is there a cost at all? Are action and production – we use both terms synonymously[144] – costless? Of course not. However, when man wants to obtain an end in the future he has to employ not only means of production like labour and instruments, but also something in addition. Between the setting in of any action and the attainment of the end sought there always elapses a fraction of time.[145] This time could well have been used to enjoy leisure.[146] If one uses this time to attain another end instead, one sacrifices the present enjoyment of leisure.[147] Time is available for every free man and not enjoying it as present leisure time definitely can be called a sacrifice – if we assume leisure to be a consumers' good.[148] If leisure was not a consumers' good its employment in attaining future ends would not be a sacrifice. The relationship between its employment and the aspired ends would become a mere *technical* one. *Costs only arise whenever one has to abstain from consumption in order to attain one's end.* This does not only hold for leisure time, but

[143] See Rothbard ([1962] 2004, p. 4).
[144] See e.g. Fillieule (2010, pp. 89 f.).
[145] See Mises (1949, p. 476).
[146] See Kirzner (1963, p. 145).
[147] See Salin (1990, p. 16).
[148] According to Rothbard ([1962] 2004, p. 43), leisure can generally be considered as a consumers' good.

for all sorts of consumers' goods that cannot be consumed because of other ends pursued in action.

Consumers' goods are the sacrifice that we are looking for. In contrast to means or producers' goods, they are valued by the actor even if they are not employed to attain different ends. That is why the actor considers them as consumers' goods, i.e., as ends themselves. And not consuming them because of his actions is a sacrifice. Without this action they could have been consumed.

Notice that we do not try to make costs "objectively determinable."[149] This point has been raised against other theories that only accept "real" costs.[150] The adherents of opportunity costs maintain that these theories lack the understanding of the fact that costs can only be felt by the person deciding and therefore are a subjective phenomenon: „If however it is looked on as a choice between alternatives, it too becomes subjective and hard to weigh."[151] After all, "[c]osts are a phenomenon of valuation," and not "a real thing."[152] This critique does not affect our notion of costs. The sacrifice of a consumers' good is also subjectively felt. We do not claim to be able to measure the size of the sacrifice. It is a *psychic magnitude* that is connected to the consumers' good that is given away. At this, what is and what isn't a consumers' good is determined by the acting person. Its psychic character is what *unites* our notion of costs with the opportunity costs concept.[153] They *differ* in the fact that opportunity costs are only an *imagined* sacrifice, whereas what we call real costs actually *is* a sacrifice. For the former, the property of the deciding person plays no role, for the latter the property of the acting person is a precondition for costs to arise.

[149] Buchanan ([1969], 1999, p. 24)
[150] Buchanan ([1969] 1999) especially thinks of the classics (pp. 37 ff.) and welfare economics (p. 49).
[151] Baxter/Oxfeldt (1968, p. 307), see also Thirlby (1946, p. 33).
[152] Mises (1949, p. 393)
[153] See Rothbard ([1962], 2004, p. 104).

5.3.2 The spread between costs and revenues

We come to the conclusion that, in evaluating human action, two things are essential. On the one hand the consumers' goods that one wants to attain in the future, on the other hand the consumers' goods that one has to sacrifice on the way towards this end. Now, in order to interrelate these two with each other, we have to draw on an aspect of human action which is commonly accepted by economists. It says that people only act in so far as they think to improve their situation. "[A]ll acting is invariably induced by one motive only, viz., to substitute a state that suits the actor better for the state that would prevail in the absence of this action."[154] Or more succinctly: "The objective of all human action is to produce value."[155] It is not difficult to apply this insight to the problem at hand. By acting a person demonstrates that he values the aspired consumers' goods more than the consumers' goods he sacrifices. In the words of Huerta de Soto: "The actor is only willing to sacrifice his immediate consumption […] if he thinks that by doing so he will achieve goals he values more."[156] In the present work, the term *cost* will be used in the sense employed here, as the sacrifice of consumption. It must always be remembered that it is a psychic magnitude. It is called "real" because it is opposed to the opportunity costs that are only "fictional" costs. The utility derived from consumers' goods attained will be called *revenues*. In the end, therefore, revenues are also always *psychic revenues*.[157] The difference between the psychic revenue and the psychic costs is called *psychic profit*.[158]

[154] Mises (1962, p. 77), also Rothbard ([1962] 2004, p. 19).
[155] Salin (1991, p. 10)
[156] Huerta de Soto (2009, p. 276), similarly Kellenberger (1916, p. 92).
[157] See Rothbard ([1962], 2004, pp. 71 f.).
[158] See ibid (p. 20).

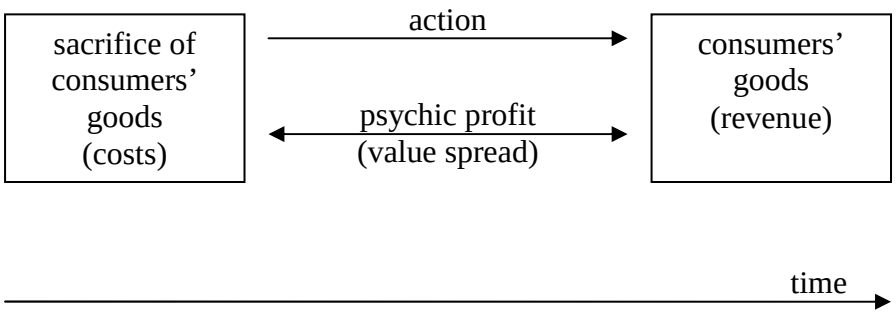

Figure 1: Value spread in human action

It seems necessary to mention that the consumers' goods in question are not, as in the time preference theory presented in section 3.1, "of the same kind and quantity." The analysis holds true also for someone who sacrifices ten apples of high quality today in order to get one apple of low quality next month. *As long as this person acts this way* we know that, to him, the bad apple tomorrow is worth more than the ten apples today.

5.3.3 Originary interest and the prices of the means of production

We are now able to explain the phenomenon of originary interest by means of the logic of action. To recall, originary interest is the price spread between the factors of production and the consumers' goods they produce. On first sight, the factors are only of *technical* importance. In order to build a house, one needs wood, bricks, three hundred hours of labour, etc. *Economically*, these producers' goods concern the acting person only in so far as he has to sacrifice consumers' goods, i.e., incur psychic costs, in order to employ them. For example, if he has to work himself, he has to abstain from enjoying leisure. If he also employs other production factors, be it labour services of other people, capital goods, or land, he probably has to pay a *price* for them. *This price is what he has to trade off against the good he wants to obtain, not the paid services or goods themselves.* If the price he has to pay should happen to have no value to him as a consumers' good, we are back to a technical relationship between means and ends. In

this case he has to pay the price, yes, but so what? It does not cost him anything. An economic relationship would only be at hand if he eventually has to sacrifice a *consumers' good* in order to obtain the good constituting the price in the first place. The important relationship is the one between costs and revenues, and not between means and ends. And costs mean consumption sacrifice. *A good that is available without a consumption sacrifice is not an economic good*. One does not have to abstain from anything in order to get hold of it – no economising is necessary.

The price of a means of production *reflects* the consumption sacrifice that was necessary to obtain it. Thus the value spread that we have discovered in human action between sacrificed and obtained consumers' goods, i.e., psychic profit, is transferred to the relationship between the price of the means and the attained end. By giving away a consumers' good in order to get a means of production, an actor demonstrates that the end this means serves is worth more to him than the consumers' good he has given away. In other words: in human action, the future consumers' good is valued higher than the price of the means.

This relationship can be illustrated in an extended version of Figure 1:

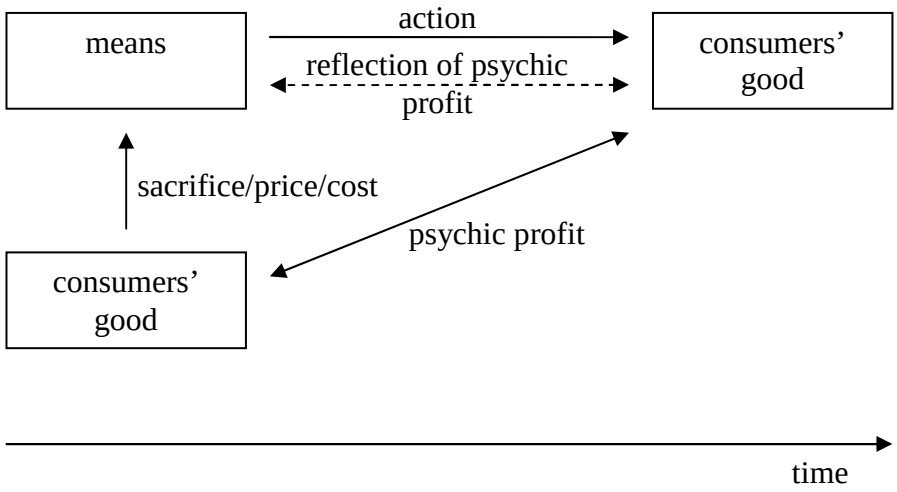

Figure 2: Value spread between the price of the means and the end

From the logic of action results our knowledge of the value spread between the consumers' good sacrificed today and the consumers' good attained in return in the future. We know that this spread exists at least in the mind of the acting person, as the latter would not act if it didn't exist. This value spread is, however, not the originary interest that we are looking for. It is merely psychic profit.

> The difference between the value of the price paid (the costs incurred) and that of the goal attained is called gain or profit or net yield. Profit in this primary sense is purely subjective, it is an increase in the acting man's happiness, it is a psychical phenomenon that can be neither measured nor weighed.[159]

In some areas it will be much more advantageous to act than in others. The psychic profit will differ from person to person and from action to action. In a market economy, however, where all goods are traded on markets and competition prevails, entrepreneurs are "intent upon profiting by taking advantage of differences in prices,"[160] in our case between the costs and the resulting revenues. "They buy where and when they deem prices too low, and they sell where and when they deem prices too high."[161] In this way, the price spread between the costs and the revenues aimed at will diminish until, in the final state of rest, it nearly disappears.[162] The spread that remains, notwithstanding the competition, we call originary interest. Originary interest is reflected in the relationship between the price of the means and the end in general equilibrium.

[159] Mises (1949, p. 97). We fully agree with this statement, as far as it goes. The reader should keep in mind, however, that Mises generally has a different notion of cost in mind, i.e., opportunity cost.
[160] Ibid (p. 325)
[161] Ibid.
[162] See ibid (p. 331).

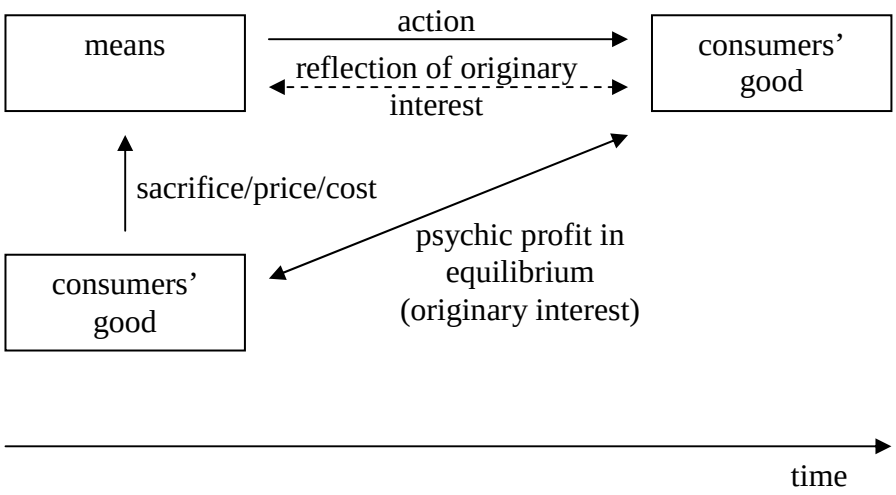

Figure 3: Originary interest as the price spread in the final state of rest

We have therewith traced back the originary interest to an underlying value spread between two goods that are both valued for their own sake.

Of course, as we have not yet introduced money, it is impossible to express the difference between costs and revenues in any meaningful numbers.[163] When costs consist in leisure time and the revenue in apples, we cannot tell anything about the size of the "profit," or, in the final state of rest, about originary interest. "Originary interest is a value gain because it is a *psychic* profit,"[164] and it can therefore not be measured. To express this spread in numbers it is necessary for costs and revenues to have a common denominator, for example money prices. However, even without such a denominator we know that originary interest must be there as long as people act and produce.

[163] See Liefmann (1925, p. 147).
[164] Dorp (1932, p. 255, emphasis added)

5.4 Originary interest and the time span between costs and revenues

5.4.1 The passing of time

In the last sections, we have found a relationship between time and action. On the one hand, costs precede revenues, and on the other hand, the acting persons expect the revenues to be worth more to them than the costs. With these results, we were able to explain the reason for the existence of originary interest. However, another aspect of originary interest that is related to the passing of time has been neglected so far. Any theory of originary interest has to account for the fact "that interest can never be calculated otherwise than with the formula capital multiplied by time multiplied by interest rate. Therefore, also the emergence of interest as costs of the capital-using production must somehow have something to do with time."[165] In other words, *why is it that the price spread between costs and revenues becomes the larger the longer the time span between the two becomes?*

If one is to look for the reason of the *rate* of originary interest, the fact that every actor aims at the improvement of his situation by getting a surplus of his revenue over his costs does not suffice. It is impossible to explain with the help of this proposition why interest payments increase with time. The interest rate is calculated as percent *per annum*. If the interest rate is somehow to be explained by originary interest, an analogous interrelation must be shown to exist in the latter as well, i.e., an increase of originary interest with the passing of time. In terms of Professor Hülsmann's terminology, this theory would have to explain why the value-spread between means and ends grows the larger the longer gets the period between the two. In our terminology it would have to explain why psychic profit, i.e., the subjectively felt value spread between costs and revenue, grows the larger the longer the action endures. If such an interrelation between the passing of time and action could be deduced, the basis

[165] Strigl (1935, p. 210)

for the explanation would have been found as to why interest rates are calculated per annum, i.e., per period of time.

Traces of such a theory can be found in the works of some Austrian economists. It is important to realise that the time preference theory of interest is not always expounded entirely homogeneously. Rothbard and Huerta de Soto do not consequently define time preference as a value-spread between ends at different points of time. Instead, according to Rothbard, "with any *given end* to be attained, the shorter the period of action, i.e., production, the more preferable for the actor. *This is the universal fact of time preference*. […] *The less waiting time*, the more preferable it is for him."[166] Now, in the end, this slightly different formulation does not change the general argument of these authors at all. Its implication, both authors seem to think, is just the same as Mises's notion of time preference criticised above. Says Professor Huerta de Soto: "[T]o put it even more briefly, other things being equal, 'present goods' are always preferable to 'future goods.'"[167] Rothbard and Huerta de Soto both see time preference as a *preference* of one good or end over another one.

One can, however, also trace a different strain of argument in the writings of both Rothbard and Huerta de Soto lying closer to our own opinion. They seem to try to explain time preference independently of the concrete content of ends, out of the pure logic of action itself. This becomes clear, for example, in the above quoted statement by Rothbard that "the shorter the period of action […] the more preferable for the actor." Unfortunately, as we have seen, they try to deduce the notion that man prefers a shorter period of action, or wants to attain his end as fast as possible, from the alleged higher valuation of present goods as compared to future goods. This is also true for Professor Hoppe. For him, every action involves a waiting time, and the latter he calls a "cost

[166] Rothbard ([1962] 2004, p. 15, emphasis by Rothbard). The same thought can be found in Huerta de Soto (2009, pp. 269 f.).
[167] Huerta de Soto (2009, p. 270). See Rothbard ([1962] 2004, p. 15, n. 15) for a similar statement.

factor."[168] But from this starting point he as well only comes to a theory that explains time preference as a value spread between present and future goods, i.e., between different ends.[169] *As has been shown in chapter three, the value difference between present and future goods does not exist by necessity. It is not a praxeological law.* Therefore, it cannot be used to prove that man always wants to act as fast as possible, i.e., to attain his end in the shortest possible period of time.

If a praxeological explanation of originary interest should happen to exist, the claim that man always prefers a shorter period of action must be capable of being deduced from *a priori* valid axioms. In this case the claim would be neither verifiable nor falsifiable, just like the proposition that action is the application of means to attain ends. As the still ongoing debate demonstrates, nobody has succeeded until now in providing us with the said deduction, or, at least, it has not yet been formulated in a way to be self-evident. What is to be tried here is to find a formulation of the nature of the relationship between action and the passing of time that accords to Mises's dictum: "[T]he characteristic feature of a priori knowledge is that we cannot think of the truth of its negation or of something that would be at variance with it."[170]

"As far as man acts he acts in the shortest way possible" is neither self-evident, stated like this, nor does it follow obviously from a self-evident axiom. That is why the meaning of this sentence shall be clarified in the following discussion.

That man acts to achieve his ends in the shortest time possible is knowledge that is placed in our mind as we are, as Mises would say, acting and thinking beings[171] ourselves. We are acting beings ourselves, and therefore we cannot accept the fact that somebody else is acting in a categorically different way than we do. As Mises says,

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[168] Hoppe (1983, p. 67)
[169] See ibid (p. 69).
[170] Mises (1962, p. 18). See also Mises (1949, p. 34) and Hoppe (1995, pp. 22 ff.).
[171] See Mises (1949, pp. 23 ff.).

> [f]or the comprehension of action there is but one scheme of interpretation and analysis available, namely, that provided by the cognition and analysis of our own purposeful behavior.[172]

Thus, if my assertion is correct and one indeed cannot help acting in the shortest time possible, it follows that one expects others to do the same. If, for example, we observe another person who does not seem to act as fast as possible, we automatically look for a *logical explanation* for this observation. We do not accept the fact *per se* because we are humans and cannot imagine a human not trying to attain his ends as fast as possible. *And we can only explain the fact that somebody does not try to attain his end as fast as possible by automatically assuming that he prefers to strive for another end at the same time*.

The point can be illustrated by an example from physics. Gravitation is recognised by man. If a ball one lets go falls to the floor, one does not look for a special explanation for this observation. One counts on the law of gravitation to work, no matter whether one has heard of the law before or not. Now, if the ball didn't fall downward but to the left, one would not assume that the law of gravitation has somehow stopped. Instead, *one would look for a reasonable explanation for this observation*. It is the same with the proposition that man acts in the shortest period possible to him. If someone appears to behave differently we automatically look for a logical explanation for this fact. We do not accept it *per se*.

Propositions like this cannot be proved – they are synthetic and *a priori*. "Synthetic a priori propositions are those whose truth-value can be definitely established, even though in order to do so the means of formal logic are not sufficient (while, of course, necessary) and observations are unnecessary."[173] The best that we can

[172] Ibid. (p. 26)
[173] Hoppe (1995, p. 18). See there for further methodological details.

do is to consider the arguments that will probably put forward against it. It is to be hoped that the point will become clearer throughout this discussion.

First of all, some might argue that the opposite proposition could be defended by the same token. Man, one might say, always acts as *slow* as he can, and if he should happen to act faster, then it is only because he has other ends in his mind that induce him to accomplish the first one a little earlier. Against this argument one can consult one's inner experience. If we watch somebody doing something very slowly, we are, in order to explain this fact, automatically looking for reasons that are lying outside the realm of what we see him doing. He might be lazy or tired, he might try to look cool, be lost in thought, or whatnot. Yet, we would never say that he is acting slowly for no reason. It must be because the acting person is not only striving for one end, but for several ones. On the other hand, when we see someone acting very fast, we are not looking for an explanation that lies outside the realm of what he is doing at the moment. What we would say is: Yes, this person is very eager to attain his end! He even disregards other ends, like preserving a good image, not getting exhausted, or whatever, that others might not disregard in his situation. *In any way, acting extremely and unusually fast can be explained by the fact that the actor has no or only few other ends in mind, but obsesses about the one he is striving for right now.* No further explanation is needed than that he really wants to do what he is doing now, and that nothing else is important to him. *Only when someone is acting more slowly than he could we know that there must be something else, another end, that hinders him from eagerly striving for the first one.*

A second argument that will probably be produced against our proposition is that there are countless cases where people are acting slowly or are letting time elapse before they even start to act. Somebody who has to bake a cake until the end of the week, one might argue, will not produce it on Monday, but will possibly wait until the

day when he has to deliver it. Doesn't this prove that, very often, people do not act in the shortest possible time? Yet, what these deliberations prove is simply that, very often, people have several ends in mind. The baker in the example does not only want to bake a cake, but to bake a cake that is ready at the end of the week. Probably he also wants this cake to be fresh and well tasting, and therefore he will bake it just in time. What we do know is that man will not wait or act slowly for no reason. *We know a priori that man cannot arbitrarily choose to not act as fast as possible.*

5.4.2 The individual rate of originary interest

If we now bring the two lines of thought together, we get the following result concerning the relationship between time and action. There is always a value spread between the costs and the revenues of human action. Both costs and revenues constitute consumers' goods for the acting person. As man, by his nature, always acts in the shortest possible time, we know that he must consider the value spread between his costs and the revenue the larger the longer the time span gets between the two. Otherwise he would act in a shorter way. Thus, all components that are necessary to explain intertemporal phenomena like originary interest have been shown to be indeed categorial requisites of human action.

Now, people of course differ in their attitude towards the passing of time. Some will only feel up to waiting longer for the result of their action when they consider their expected psychic profit to be very large. Others will already take longer courses of action when the revenues are, in their eyes, only slightly worth more than the costs. In other words, the *rate* between the subjectively felt increase in well-being by action and the span of time that elapses because of this action differs from person to person. The *size of this rate*, in other words, is a matter of *preferences* and can not be deduced from a priori valid axioms. We could call it the *individual rate of originary interest*.

However, we are still dealing with a world without money prices where it is impossible to compare costs and revenues in an objectively verifiable way. That is why it is impossible to empirically test this rate. However, it can be observed that some people act in a way that involves a long period of time, and others do the opposite. So there is a relationship between time and action, and the relationship differs from person to person. Whether this is the case because the value spreads are differently felt by different persons, or because the latter have different perceptions concerning the length of the elapsing time does not have to bother us here. Our point is that the rate between the two has a real meaning and that is not uniform for all people.

The forgoing analysis should have made clear that originary interest indeed is a categorial requisite of human action, just as Mises claims. However, we disagree with the way he tries to prove his claim. He deduces the phenomenon from time preference, i.e. from the fundamental value-spread between present goods and future goods "of the same kind and quantity."[174] As we have shown in chapter 3, this cannot be done. *Preferences have nothing to do with the existence of originary interest.* It was the purpose of the preceding discussion to explain the relationship between time and action, and consequently originary interest, without making recourse to preferences. Preferences only come into play when the size of the *rate* is in question.

5.4.3 Coinciding means and ends

One more possible counter-argument has to be considered before we get to interpret other theories of interest in the light of our findings. What about actions that are pursued because they are valued themselves, i.e., what about those cases when means and ends coincide with each other? An example would be a piano player who enjoys playing the piano. A slightly different one would be the case where he plays not

[174] Mises (1949, p. 521)

for himself but for a friend. Here means and ends still coincide, yet can easily be distinguished. This coincidence of means and ends can not at all be regarded as a special case as one might think. In every act of consumption, like eating, drinking, playing games, means are employed to attain a coinciding end.[175]

As long as the action in question takes a *period* of time it does not pose any problems to our theory. *Other things equal*, the piano player will play his piece of music as fast as possible. If he does not play it so fast it is not because of an inborn low time preference rate. We know, instead, that there must be a specific reason for it; that the piano player must have another end in mind in addition to simply "playing this piece of music." Probably the music sounds more enjoyable when performed more slowly, or it can be learned more easily this way. We couldn't explain the observation without being aware of a logical reason. So also for these cases our statement holds that the subjectively felt value difference between costs and revenue is the larger the longer the action endures. Otherwise, the actor would choose shorter paths of action.

The point is more difficult in the case of actions that appear to have no time dimension. Hülsmann mentions spot market exchanges as an important example for actions that provide an *agio* for the parties involved yet have no time dimension.[176] He writes about coincidences when means and ends "coexist at the same *point* of time."[177] If he was correct we would have to admit that the passage of time in action is not "the only determining factor, but merely one out of two causes operating to the same effect",[178] i.e., the reduction of dissatisfaction by action. There would be a value spread between costs and revenues at a spot of time. This could not be explained by our rate of originary interest that links the increase of value to the passage of time.

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[175] See Barnett/Block (2007, p. 130).
[176] See Hülsmann (2002, pp. 92 ff.).
[177] Ibid. (p. 94, emphasis added)
[178] Ibid. (p. 92)

To illustrate his point that there can be a value spread between means and ends even if both coincide *and* do not extend in time, Professor Hülsmann uses the example of a barter exchange between two parties:

> Any contractual agreement is made at a point of time, namely, at the point of time when both partners have agreed on the terms of the exchange. By its very nature, choice, in the sense this term is used in economic theory, is made at points of time rather than throughout a process. And because a market exchange involves the decisions of at least two people, the exchange becomes effective only when the last partner has made the decision to cede the title to his property in order to acquire title for another piece of property.[179]

This way of stating the argument takes the effect for the cause. It surely is correct to regard a person's choice as evidence for this person valuing the option he chooses higher than the one he does not choose. So if A hands over an apple to B in order to receive a tomato in exchange this obviously tells us that A and B both think to reduce their subjectively felt dissatisfaction this way. However, they do not achieve this by merely deciding to do so, or by contracting accordingly. *These* events indeed happen at points of time, not in periods of time. Yet, the parties improve their situation only if the exchange actually proceeds. And this exchange definitely requires at least one of them to *act.* And, different from decisions, an action cannot take place at one *point of time*. It extends in time.[180]

The choice to act in a specific way is only the consequence of an actor appreciating this way of action as being of advantage to him. The advantage, however, must be brought about by action, i.e., by a process that has a time dimension. At the

[179] Ibid. (p. 95)
[180] See Rothbard ([1962] 2004, p. 4).

instance of the decision one only chooses between different possibilities of action that *could* – if actually executed – decrease dissatisfaction.

6. Relationship to other theories of interest

In the foregoing analysis we have obtained two results:

1. *man acts to render conditions less unsatisfactory, i.e., in action, revenues surpass costs*
2. *man acts in the shortest possible period of time*

These two propositions describe the relationship between time and action. They allow us to understand the phenomenon of originary interest. Many observations that until now have been made responsible for the interest phenomena can be explained by them. In the following pages, this task will be tried for four theories. The theories that our expositions draws on, Professor Hülsmann's theory and the time preference theory, are dealt with in sections 6.2 and 6.3 respectively. Section 6.1 is dedicated to the productivity theory, and section 6.4 to the equilibrium approach to interest theory.

6.1 The productivity theory of interest

Although Böhm-Bawerk criticises all kinds of productivity theories at length in his *Geschichte und Kritik der Kapitalzins-Theorien,*[181] he himself mentions as the famous third reason of interest the higher *physical* productivity of time-consuming roundabout production processes.[182] Unsurprisingly, his theory has been attacked several times by eminent scholars. It is held that it falls prey to the very same criticism Böhm-Bawerk expounds against former productivity theories.[183] It cannot explain why the value of the consumers' goods is not fully imputed to the production factors.[184]

[181] See Böhm-Bawerk (1921a, pp. 103-170).
[182] See Böhm-Bawerk (1921b, p. 339).
[183] See e.g. Wicksell (1893, p. 87), Mises (1949, p. 486). Also Kirzner (1996, p. 127), Pellengahr (1996, pp. 11 and 21), and Fillieule (2010, p. 123).
[184] See Pellengahr (1996, p. 17), Dorp (1931, p. 293).

Nonetheless, Böhm-Bawerk's productivity theory is based on a correct observation. More roundabout processes of production indeed *are*, as a rule, physically more productive than shorter ones. Let it be understood, we do not maintain that all theoretically possible roundabout ways of production are more productive than their shorter counterparts. Of course there are roundabout ways that are totally unproductive, and short production processes that are highly productive. This point is hinted at by John Maynard Keynes:

> It is true that some lengthy or roundabout processes are physically efficient. But so are some short processes. Lengthy processes are not physically efficient because they are long. Some, probably most, lengthy processes would be physically very inefficient, for there are such things as spoiling or wasting with time.[185]

Anyway, it is not from the observation of the higher physical productivity of the more roundabout ways of production that interest can be deduced. It is the other way round. Because we know that all human actions fulfil the two propositions stated above, we know that longer production processes actually chosen are, as a rule, physically more productive than shorter ones. First of all, we know that every production process has to be regarded as being productive in a *subjective* sense, that is, from the point of view of the producer himself. Otherwise, he wouldn't think this production to render conditions less unsatisfactory than they would have been without it, i.e., to lead to revenues that surpass costs, and he would not undertake it. In the words of Eduard Kellenberger, the "much disputed productivity" in question "in the end rests upon the *insight* of the people."[186] Furthermore, it is clear from the second proposition that the person wants his production process to be accomplished in the shortest possible time. If he

[185] Keynes (1936 p. 214)
[186] Both quotes from Kellenberger (1916, p. 86, emphasis added).

nonetheless chooses a longer production process we can be sure that there must be a reason for it. It *might* be that it is more productive *physically*. Then it brings forth *more of the same good* than a shorter process does. But it might also be that it brings forth *different goods that are more valuable* than the goods that can be produced in shorter processes; or that the longer production processes make it possible for the producer to strive for *further ends, like leisure*, in addition to the goods he produces in his production process.[187] The only one who knows the reason is the actor himself. What should be clear is that he only chooses longer or more roundabout processes of production if they appear *to him* to be more productive.[188] As Kellenberger notes, it is not correct

> to understand by physical productivity the production of *more* or *better – more useful* – goods as if the adjectives 'better' and 'more useful' had an absolute meaning, a meaning which was independent of man; as if it wasn't the appreciation of man that the judgment concerning what is better or more useful depends. All that 'better' and 'more useful' can signify is 'suited better,' that is, 'more valuable' for *special purposes*. […] Therefore, *the deliberate and purposeful production of better and more useful goods is, from the start, value production and not physical production*.[189]

So the higher physical productivity of more roundabout ways of production is not the (or leastwise one) reason for the existence of interest. Instead, "every purposeful production of goods is *ex ante psychic or value production*."[190] The higher physical productivity of most of the actually employed roundabout ways only *follows from the fact that they are necessarily expected to be of higher value productivity*, and the latter results from the two propositions developed above, i.e., from originary interest.

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[187] See Fillieule (2010, p. 95).
[188] See Huerta de Soto (2009, pp. 269 f.) for a similar point.
[189] Kellenberger (1916, p. 91, some emphasis added)
[190] Ibid., emphasis added.

Böhm-Bawerk himself somehow is conscious of the problem described here. He acknowledges that there is nothing in longer ways of production *per se* that could account for the higher physical productivity. That is why he sometimes – not always – confines the higher productivity only to those longer processes that are *wisely chosen* ["*klug*" or "*geschickt gewählt*"].[191] In other words, it seems that he tries to deduce the higher productivity of more roundabout processes from human action, from the fact that people purposefully pursue those projects that produce value.[192] Yet, he does not think that it is *necessarily* the case that humans choose "wisely". If he had realised that his doubt is only reasonable *ex post* and that, *ex ante*, everybody acts in a way he thinks proper to produce value,[193] or, as Walter Eucken terms it, in a "rational" way,[194] his point would correspond to our notion of originary interest.

Originary interest as presented above also helps to understand some popular examples given to illustrate the productivity of time or waiting. Wine[195] or wood[196] are very often[197] mentioned as goods that increase in value by the mere passage of time.[198] But one has to realise that there is an indefinite number of instances where time just works in the opposite direction and has a destructive influence on things. Milk, fruits, vegetables, meat, and even wine and wood can – if one waits too long – loose their value to man completely by the passage of time. It is not true without qualification that "wine […] becomes the better the longer it is stored."[199] Again, it is not the productivity of time or waiting from which stems the interest phenomenon. Instead, we know from

[191] See for example Böhm-Bawerk (1921b, pp. 16, 111, 115, and elsewhere), and Böhm-Bawerk (1921c, p. 2). Strigl (1934b, p. 81) uses the same terminology. Böhm omits the idea of "wisely chosen" processes in 1921b (pp. 121, 146, and elsewhere). See also Fillieule (2005, p. 6; 2010, p. 96).
[192] See Lutz (1967, p. 13).
[193] See Rothbard ([1962] 2004, p. 277).
[194] Eucken (1954, p. 69)
[195] See Rothbard ([1962] 2004, p. 14), already James Mill (1844, p. 102).
[196] See e.g. Eucken 1954, pp. 72 f.).
[197] See Lutz (1967, p. 11).
[198] Kirzner (1996, p. 139) provides further examples from the literature.
[199] Stackelberg (1944, p. 31)

the propositions derived above that time apparently is productive in the actual production of wine and wood.

6.2 Originary interest as value-spread between means and ends

The relationship between Professor Hülsmann's theory of interest and our two propositions is of a quite similar character. The value-spread between means and ends is not the reason for the existence of originary interest but the consequence of our propositions. It follows from the first one – man acts to render conditions less unsatisfactory – that men only act as long as what they give up in acting, the price of the means, is less valuable to them than what they attain by it.

The problem becomes more complicated because some means do not wear off by the attainment of a single end. They can be used to achieve several of them. In consequence, the price of the means must derive from the sacrifice one is ready to incur for *all* of the ends they help to attain, not from only one of them. Accordingly, it happens very often that someone employs a means that costs much more than the end it serves at the moment which seems to contradict our theory of originary interest. The following lines will show, however, that this point does not pose any serious problems to our approach.

To give an example: it is impossible to deduce from the observation of someone eating dinner with golden dishes that this person values the meal (his end) more than the golden dishes (means). The dishes do not disappear because of the meal. Our gourmet only parts with the money he spends for the food, and, possibly, some milligrams of the gold in so far as the dishes wear off a little bit. After all, the dishes are available to be put to further uses after dinner in pretty the same condition as before dinner. There can only be a value-spread between the end on the one hand, and that part of the means perished during the attainment of this end on the other. If the dishes were

indestructible, one could not extrapolate the value of the means "dishes" from the value of the end "meal" at all.

Important for our analysis is not the price of the means employed, but the price of that part of the means that has been used up in action – accountants call this the write-off. To stay in our example, the meal does not have to be worth more than the costs of the dishes, but only than the costs of that part of the dishes that wore off during the meal. At least the person employing the golden dishes thinks so, otherwise he would not employ them.

6.3 The time preference theory of interest

The purpose of chapter three was to show that it is impossible to regard time preference as a matter of choice. Choice of man is not in any way constrained by some sort of time preference. This is even true if the *ceteris paribus* condition is not violated. Many Austrian economists try to support their theory of time preference by demonstrating that their opponents violate this condition. Very often[200] they therefore discuss the following objection: "In wintertime, why should anyone prefer ice delivered then [present good] to ice delivered in the following summer when the weather is very hot [future good]."[201] This argument is thought to provide an example of a situation where most people actually prefer a future good to a present good. According to the Austrian authors, however, this example violates the *ceteris paribus* condition. Consumption of ice-cream in winter, they say, is not the same good as consumption of ice-cream in summer.[202]

Yet, if we construct the same example in a way that doesn't violate the *ceteris paribus* condition it cannot be inferred from the then prevailing situation that, now, it is

[200] See e.g. Rothbard ([1962] 2004, pp. 15 f., n. 15), Huerta de Soto (2009, p. 272, n. 9), Mises (1949, pp. 486 f.), and Fetter (1915, p. 238).
[201] Shapiro (1974, p. 238)
[202] See Pellengahr (1996, p. 63).

perfectly clear that the present good is always preferred over the future one. It is not at all sure that a person having the choice between ice-cream in this summer and ice-cream in the next one does always opt for the former. There is no praxeological law hindering people from preferring the latter option. Human decisions are not subject to restrictions of this kind. The influence of time upon human behavior must not be looked for in choice but in action itself.

When many Austrians maintain the higher valuation of present goods as compared to future ones, they think the *consequences* of the two propositions presented above to be the *cause* of interest. In this point their theory resembles the ones criticised above. However, they commit a further error. The value-spread between the costs of the means and the ends can indeed be deduced from our propositions. Professor Hülsmann, as we think, confounds cause and effect. But this is the only problem of his theory. The other Austrians, in addition, presuppose a value-spread that even does not exist, i.e., the one between present and future goods. And it is not correct to say of these authors that "[t]he totality of all factors of production required to produce a product is regarded as a future good"[203] by them, thereby indicating that they use the term "future good" as synonym to the term "means" in Professor Hülsmann's theory. The terms are not used this way by the time preference theorists, at least within their discussion of interest. They do not label present factors of production "future goods." They merely maintain that the factors *derive their value from future goods.*[204] And only because, in their eyes, the latter are valued less than present goods so are the production factors.

[203] Reisman (1998, p. 792)
[204] See Mises (1949, p. 521).

6.4 General equilibrium and the theory of interest

In the final state of rest, i.e., in equilibrium, it is true, as we have seen, that the value spread between the price of the means – the costs – and the end – the revenues – corresponds to originary interest. It is the imagined outcome of competition and can be explained as the *result of human actions*. In this imagined final state of rest a relationship is established between the costs, the revenues, and the interest rate that allows us to calculate with them. One is allowed to say, for example, that the costs of the means of production correspond to the discounted value of the expected revenues. In this sense it is permissible to maintain, with Irving Fisher, that the value of the means depends, risk aside,

> solely on the same two factors, the benefits, or returns, expected by the investor and the market rate of interest by which those benefits are discounted.[205]

Yet, as was already stressed, this relationship only holds in equilibrium. According to Dieter Schneider, in order for this relationship to hold, the capital market has to be perfect and in equilibrium, and interest on debt may not differ from credit interest.[206] There is, as far as this relationship is concerned, no causal chain on hand. However, Irving Fisher maintains that exactly this relationship, that future consumption produces the price of the means, is a "causal connection."[207]

Yet, it is inadmissible to deduce a causal connection from a relationship that can only be found in equilibrium. The value of the means does not simply fall from heaven. It is not an automatic result of a computation. It does not go far enough merely to say:

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[205] Fisher (1930, pp. 17 f.)
[206] See Schneider D. (1992, pp. 71 f., and 2001, p. 759).
[207] Fisher (1930, p. 55). Verbatim he says that "income produces capital value," but the difference is only a question of terminology.

> Future goods [goods of higher order] are goods that are now expected to become present goods at some future date. They *therefore* have a present value.[208]

Goods of higher order are only valued when demand exists for them. Sometimes Fisher seems to be aware of this. For example when he says that "the present worth of any article is what buyers are willing to give for it and sellers are ready to take for it."[209] But he does not draw the obvious conclusion. Instead, as we saw, he describes the discounting process as depending, risk aside, "solely" on the revenues and the market interest rate used for discounting. In this theory, the value of the means is created out of thin air, "derived,"[210] or "produced"[211] simply as the result of a computation. Microeconomic principles according to which prices are the result of deliberate human acts, of supply and demand, are ignored.[212]

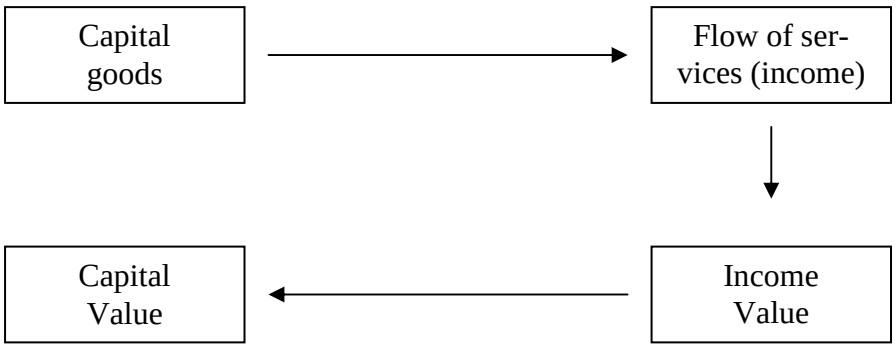

Figure 4: Discounting and imputation as illustrated by Irving Fisher
Source: Fisher (1930, p. 15)

[208] Rothbard ([1962] 2004, p. 375, emphasis changed). We do not want to say that Rothbard is not aware of the problem. But the formulation he has chosen here can lead to misunderstandings.
[209] Fisher (1930, p. 15)
[210] Fisher (1897b, p. 527)
[211] Fisher (1908, p. 24)
[212] See Reisman (1998, p. 796).

How Fisher imagines the discounting process can be seen in Figure 4. The value of the present capital goods, i.e., the means of production, is derived from the future and is automatically imputed to them according to the discount factor. He does not pay attention to the fact that the existence of the discount factor *presupposes* the existence of the interest as the value spread between capital goods (= means of production) and future income (= future consumption). He is in a logical circle. To know the rate of interest one has to know the value spread between the prices of the means and the future income. This presupposes that one knows the prices of the means. The latter, therefore, cannot be the result of the calculation, as they have to be known in the first place.

It does not help to argue that the interest rate stems from the time preference rate and is transferred to the relationship between capital goods and future income. Apart from our objections against the time preference theory uttered in the third chapter, Fisher himself does not even provide an explanation of the interest rate by means of the time preferences of individuals.

The theory he expounds resembles the *general* equilibrium theories in one shortcoming. Both are functional theories, not genetic-causal ones. In functional theories, the point is not to "explain the coherence of prices by means of their *formation* in terms of the *laws* of their *genesis*," but "to describe the relationship between the already existing prices in the *state of equilibrium* by means of an exact fixation of the assumptions of the equilibrium."[213] Hans Mayer shows, on the basis of the works of Cournot,[214] Jevons,[215] Walras,[216] and Pareto,[217] that, in general equilibrium theory, prices are not explained with the help of concepts that logically precede the prices, like

[213] Mayer (1932, p. 148, emphasis by Mayer)
[214] See ibid. (pp. 153 ff.).
[215] See ibid. (pp. 165 ff.).
[216] See ibid. (pp. 188 ff.).
[217] See ibid. (pp. 199 ff.).

needs, but with the help of concepts that themselves depend on already existing prices. "Prices are determined by demand, demand is determined by the prices."[218]

Irving Fisher applies a similar circular reasoning in his interest theory. Instead of explaining the interest rate with the help of the time preference rates of individuals, he "supposes an existing rate of interest to which rates of time-preference of individuals are later brought into conformity."[219] He assumes the interest rate as given, he does not explain it:

> [W]hile *for individuals the rate of interest determines the degree of impatience* , for society the degrees of impatience of the aggregate of individuals determine, or help to determine, the rate of interest. [220]

Fisher is concerned with a world that already is in equilibrium and where a uniform rate of interest exists. He does not describe the relationship between the individual prices as the result of an ongoing process yet to explain. He merely maintains a causal connection between the interest rate in equilibrium on the one hand, and the equilibrium relationship between the prices of capital goods and the future income they induce on the other. In order to establish a causal connection he would have to explain either the interest rate or the value spread independently of the other one.

According to our analysis, discounting of future revenues cannot be put forth as the rationale of the present prices of means. The interest rate that can be used to discount around only appears in equilibrium, when the formation of the prices of the means is completed. It *is* the spread between the prices of the means and the ends. It does not *cause* it.

[218] Ibid. (p. 238), similarly Liefmann (1932, pp. 376 f.).
[219] Fetter (1978, p. 237)
[220] Fisher (1930, p. 120, emphasis added)

7. The concepts of saving, investment, and finance

The analysis of human action in the passing of time in the preceding chapters can serve as the basis for the classification of the important and controversial concepts of saving, investment, and finance. In fact, they are a correlate of this analysis.

It is important to remember that costs only appear in so far as consumers' goods that one owns have to be sacrificed. The important point here is that the ownership of consumers' goods is a precondition for costs to occur at all. These consumers' goods that one has to possess and that can be used to attain future ends we call *savings*. No costs could be incurred, and therefore, no action could be started without them. In this view "any single instance of human action, not just long-term production processes, is possible only through savings."[221] Savings – the ownership of consumers' goods – are created by not consuming the whole of one's income.[222] Savings are not, as Irving Fisher must have it in order to reconcile them with his theory, "simply the capitalization of future income."[223]

Someone who incurs costs in order to attain revenues *invests* his savings. He abstains from consumption today for a yet unspecified *period of time* because he wants to attain a different end in the future.

The difference between saving and investing lies in the time dimension. As long as savings exist in their consumable form they can be consumed at any time. They are not saved up for any determinable period of time. Even if the saver swears today that he is going to store up his consumers' goods for the next five months, he can change his opinion ten seconds later and consume them. *Ex ante* it is impossible to impute a time dimension to pure savings.[224] Yet, as soon as the savings – the unconsumed consumers' goods – are sacrificed, they cannot be consumed any more. They have been *invested for*

[221] Hülsmann (2002, p. 103)
[222] See Robertson (1933, p. 399), Samuelson/Nordhaus (1985, p. 129).
[223] Fisher (1908, p. 36)
[224] Of a different opinion is Ohlin (1937, p. 54): „…savings have a time dimension."

a period of time. Whereas one had the choice of what to do with the savings before, they have now been committed to a special purpose for a period of time. In this way, investments are understood in there literal sense. By investing savings, one *vests* them – they receive a special form.

On the other side we see the goods that the investor wants to attain by means of his investment. When these goods come into existence in the future, the savings are, so to speak, set free again. The investor again owns consumers' goods he can consume if he wants to. The production process can be seen as composed of the investment or sacrifice of consumers' goods that is succeeded by a freeing up of consumers' goods at a later point of time.

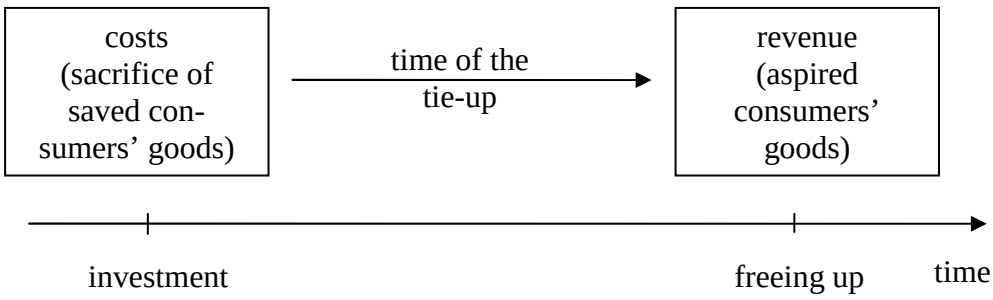

Figure 5: Investment and freeing up of consumers' goods

One can only invest things that can be bound up. A machine can neither be saved nor invested.[225] As soon as it exists it is impossible for its owner to decide whether to invest or to consume it. This decision has already been made before the machine was built. If the construction of the machine made necessary the sacrifice of consumption, then the consumers' goods given away have been invested. They are now bound up with the machine. The latter's existence bears witness to the fact that once savings have been invested. Yet, the machine can not be invested itself. One cannot

[225] See Tuttle (1903, p. 82).

speak of "capital goods" that are "wisely invested,"[226] like Huerta de Soto does on one occasion.

Rothbard, sometimes, has a further opinion. To be sure, for him saving also means the "restriction of consumption."[227] But what he calls investment is the "transfer of labor and land to the formation of capital goods."[228] In this opinion, it is not the consumers' goods that are invested but the originary factors of production. The concept behind this is that because people save, fewer consumers' goods are needed in order to satisfy present wants. That is why less labour and land are necessary to produce consumers' goods and more of them can be put to the production of capital goods.[229] Yet, we have seen above that the factors of production are only important as *technical* requirement of production. And also Rothbard does not keep to his own formulation. Some lines below, he writes:

> The actor must decide whether or not to restrict his consumption and invest in the production of capital goods, by weighing the following factors: Does the utility yielded by the increased productivity of the longer process of production outweigh the sacrifice that I must make of *present* goods to acquire consumers' goods in the *future*?[230]

Here he explicitly contrasts future consumers' goods and the sacrifice of present consumers' goods. He does not mention the factors of production as decisive, what he would have to do according to his earlier statement. In the later passage he is correct. Economically the sacrificed consumers' goods are important. *They* constitute the costs, *they* have to be sacrificed, and *they* are thereby invested.

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[226] Huerta de Soto (2009, p. 279, emphasis erased)
[227] Rothbard ([1962] 2004, p. 48)
[228] Ibid., similarly Kirzner (1963, p. 193). The thought can not be found in Huerta de Soto (2009, pp. 276 ff.) who, for the rest of the point in question, follows Rothbard.
[229] See Rothbard ([1962] 2004, pp. 48 f.)
[230] Ibid. (pp. 48 f., emphasis by Rothbard)

According to our analysis, saving and investment are two categorically different things. Savings have only one dimension: the value of the not consumed consumers' goods. Investments have two dimensions: the value of the saved consumers' goods and the duration of their tie-up.[231] As long as savings are not invested they can be consumed at any time. It is illegitimate to attribute a time dimension to them. Only when invested for a period of time, they obtain this dimension.

That this difference in dimensions has not been made allowance for by many economists has been the source of much discussion. Without making this difference one can come very easily to the conclusion that savings always equal investment.[232] It is perfectly clear that investments can never surpass savings if the time dimension of both is ignored and only the value dimension is considered. In order to invest 1000 apples I have to save them first. If, instead, one defines savings and investment as having both a time dimension, savings can never surpass investment. That is because, then, hoarding of savings for a period of time is the same as investment in stock over the same period of time. In this view, everything saved is thereby invested.

After what has been said, the term *"finance"* has a quite concrete meaning. In action, costs are incurred in order to obtain goods in the future. Whenever costs arise, what is needed are savings in order to pay for the costs. These savings consist in unconsumed consumers' goods. To finance actions means to mobilise the funds – the consumers' goods – that are needed to defray the costs. Financing is not only needed in the beginning of any action, for example in the form of stored up consumers' goods, but also after the action has started. It is always needed when costs have to be incurred.

This is most prominently the case when, in any production process, the originary factors of production land and labour have to be remunerated. The persons behind the factors, the workers and the landlords, depend, as human beings, on

[231] See Jevons (1911, pp. 229 ff.).
[232] See e.g. Ohlin (1937, p. 69), Lerner (1938, pp. 298, f.), Dorp (1937, p. 97), Pigou (1949a, p. 43).

continual consumption. They have to be steadily supported [alimentiert].[233] The term "to support" is the expression that best corresponds to the term "to finance."[234] The latter is usually employed only in the money economy. However, we will see that also there "to finance" means, in the end, to support the people behind the production factors. The next two parts of this work are dedicated to the elaboration of this thought whereupon the processes of saving, investment, and finance are connected to the appearance of costs.

[233] See Strigl (1934b, p. 16).
[234] See Strigl (1934b, p. 16, n. 1).

Part II: Social capital and the subsistence fund – finance in real terms

8. The idea of financing in social cooperation

8.1 Interpersonal finance

In the last part, the relationship between time and the economic aspects of the logic of action was shed light on. The interest phenomenon was shown to exist even if one abstracts from money. It is grounded in human being and acting itself. In the course of the analysis, also the terms "costs," "revenue," "savings," "investment," and "finance" have been clarified. They all relate to the sacrifice or the gain of consumption that are necessarily part of human action; and they all have meaning beyond the monetary economy. With these microfoundations in mind, we can address the task of examining the veil of money covering the transactions on the financial market. We withstand the temptation of providing a definition of the "financial market" at this early point of discussion. As was recommended by Walter Eucken, we do not place the definition of our object ahead of the analysis that leads to its understanding.[235] The only point that must be mentioned is that in a system of social cooperation, the plans of people concerning their costs and revenues can intersect. The costs of one person may be the revenue of somebody else; or somebody might transfer his savings to another person so that the latter can incur the costs that arise in his actions. Those transactions we term *interpersonal finance*. When there is anything that can rightly be called "financial market," then it must be concerned with acts of interpersonal finance.

In order to enlighten the relationship between the veil of money and the acts of interpersonal finance, we will have to discuss two issues. First of all, we will *remove* the veil. If we imagine a *world without money*, is there anything in this world that corresponds to the streams of money that can be observed on the financial market? *Are there streams of real goods which have the function of financing the economy?* As we have seen, the financing of actions only becomes necessary when *costs* have to be

[235] See Eucken (1965, pp. 7 f.).

incurred. Finance constitutes the link between costs and savings. Therefore, only *after* it is clarified where costs arise it can be answered what must be done in order to defray them, i.e., what kind of saved real goods are in need when it comes to finance the corresponding actions. Secondly, we will analyse the veil itself. This question concerns *the way the financing of the economy is actually organised and accomplished by the monetary streams on the existing financial market*. Eucken puts this point very eloquently:

> If we looked at the earth from above and saw the amazing swarm of humans, the variety of employments, the intertwining of activities, and the stream of goods, our first question would be: how is all this organised?[236]

In order to answer this question for the financial market, the relationship between the money traded there on the one hand, and the non-monetary savings that are necessary to finance the economy has to be worked out.

8.2 Social capital and private capital

These two issues, firstly the stream of real goods which have the function of financing the economy, and secondly the way the market economy brings them about by means of cash flows, determine the further course of this work. It is important to note that their separation corresponds to the ambivalence of the term “capital” already hinted at in the introduction. In asserting that the financial market allocates “capital” without defining the latter term, many modern authors circumvent the problems that arise if one wants to know which streams of goods correspond to the cash flows on the financial market. Before this claim shall be substantiated in the next section, we will show how it is possible to separate the two issues by means of two distinct concepts of

[236] Ibid. (p. 50)

capital. After all, the term "capital" unites both issues in an unholy way since the time of Adam Smith and his *Wealth of Nations*[237] and therefore hasn't gone unnoticed. Many authors who analyse the term at some depth realise the ambivalence and consequently distinguish the two notions "*social* capital" and "*private* capital."[238]

The concept of "social capital" can be of help for the first issue, namely the explanation of where and when in society real goods are needed in order to allow for the incurrence of costs. It looks at the production sphere from above, so to speak from a social point of view, and asks which goods, next to the factors labour and land, are necessary in a society to produce consumers' goods. To quote the famous definition of David Ricardo: "Capital is that part of the wealth of a country *employed in production*, and consists of food, clothing, tools, raw materials, machinery, etc., necessary to give effect to labour."[239] Economists following this view concentrate on the production process and the structure of production.[240] Capital, for them, consists of all sorts of *heterogeneous*[241] goods that are necessary to produce. Some call these goods accumulated labour,[242] others intermediate goods,[243] goods-in-process,[244] or non-permanent produced means of production.[245] Money, of course, is not part of social capital as it does not help to produce anything.[246] What unites all those who try to define capital as an accumulation of heterogeneous goods is that they try to brush aside the veil of money. They adopt a *technical* viewpoint.[247] They do not care for the motivations of the acting individuals. What interests them are the *material* movements of goods in the production process as seen from a bird's eye view.

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[237] See Fisher (1896, pp. 513 f.), Spiethoff (1908, p. 3).
[238] See e.g. Böhm-Bawerk (1921b, pp. 91 ff.), Landry (1904, pp. 2 ff.), Fillieule (2010, pp. 111 ff.).
[239] Ricardo ([1817], 1911, p. 53, emphasis added)
[240] See Garrison (1990, p. 152), Lachmann (1978, pp. 11, 54), Böhm-Bawerk (1921b, p. 94).
[241] See Lachmann (1978, p. 11).
[242] See Weber (1958, pp. 190 ff.).
[243] See Böhm-Bawerk (1921b, p. 16).
[244] See Garrison (2001, p. 8).
[245] See Hayek (1941, p. 57) and Wieser (1924, p. 49).
[246] See Mises (1940, p. 254).
[247] See Budge (1933, p. 20).

Of course, the technological or material aspects of human action are independent of any special organisational principle. Food, clothing, tools, and machines are the prerequisite of production no matter whether we look at a market economy with its money prices or at a socialistic one.[248] These goods are the technical means of *any* production activity. But even if the view of society based on this capital concept might not allow for the explanation of the organisation of finance within the market economy, it still helps to illustrate the problem at hand: where do costs occur and how can this problem be solved *technically*? The rest of part II will be dedicated to the elaborating of this question.

On the other side, those economists endorsing the concept of *private capital* focus on the second issue, the organisation of the market economy. They are not interested in the technical question of what can be considered as capital because it is of help in production. They rather concentrate on the *value aspect* of these goods. This has been the wide spread custom before Adam Smith[249] and can also be found among many economists writing after him. According to this view, capital constitutes "a fund of value invested in productive instruments of any and every sort."[250] It is derived from the observation of the institutions of our actual market economy. It is taken from business accounts where all goods destined for acquisition are denominated in *money* and their accumulated *money value* is called capital.[251] As all goods are evaluated homogeneously in money, the businessmen are able to perform economic calculation.[252] They can easily compare input and output and determine profits. According to this view, it is not possible to define capital by enumerating the goods that are capital and to distinguish them from all other goods such that only those goods that

[248] See Wieser (1924, p. 48), Strigl (1934b, p. 3), Mises (1949, pp. 261 f.).
[249] The most prominent example is Turgot ([1766] 1997, p. 190).
[250] Clark (1889, p. 50)
[251] See Mises (1949, pp. 260 ff.).
[252] Ibid. (p. 261)

are of use in production are included. For businessmen, many things, money included, are capital that do not participate in any production process. To give an example, for a lessor, the apartments he hires out to private customers are part of his capital.[253] Yet, from the social angle, these apartments do not produce anything. They are consumers' goods just as if the lessor lived in them himself. What distinguishes goods that are part of private capital from goods that are not is merely the question whether they are employed in business or in the domestic economy.

As the writers endorsing the private concept of capital have the *money value* of the respective goods in mind, and not their *physical composition* that might change in the course of time, it is a *homogeneous* concept. They view capital as "as a kind of jelly that transforms itself over time."[254] The homogeneity of all the goods that are private capital depends on the fact that they can be brought down to a common denominator – money prices – which is only possible in a market economy. In part III this private concept of capital that stems from the observation of the monetised market economy takes the centre stage. It will be analysed how the problems expounded in part II are dealt with in the context of our present economic system.

8.3 The confusion of social and private capital in modern economics

The separate and lengthy analysis of the two issues is necessary as they are usually jumbled up, especially in the treatment of the financial market itself. As can be well documented in both the scholarly and the textbook literature, when the object of the financial market – capital – is at issue, one generally talks about something called "loanable funds" or "funds."[255] Some even speak of the "loanable funds market."[256] In

[253] See Böhm-Bawerk (1921b, p. 103).
[254] Solow (1971, p. 27)
[255] See Gurley/Shaw (1955, pp. 515 ff.), Cargill (1983, pp. 27 ff.), Holmstrom/Tirole (1997, p. 671), Mishkin (2007a, p. 3).
[256] Young (2009, p. 40)

the words of Frederic Mishkin, the financial market performs "the essential function of channelling *funds* to those individuals or firms that have productive investment opportunities."[257]

Generally, these funds are supposed to have a *monetary* character. They consist in money,[258] savings,[259] or purchasing power.[260] "At the heart of any financial system" says Hazel Johnson, "is *money*."[261] And indeed, following Tsiang, loanable funds are simply "*sums of money* offered and demanded during a given period of time for immediate use at a certain price." [262] Accordingly, Nobel Price winner Franco Modigliani and his co-author Frank Fabozzi explain the role of the financial market nearly exclusively in terms of money. For them, there are three economic functions of the financial market. The first one is to determine the money price of financial assets. This feature of the financial market, they say, "signals how the *funds* in the economy should be allocated among financial assets."[263] Financial assets, in turn, they define as instruments that "transfer *funds* from those parties who have *surplus funds* to invest to those who need *funds* to invest in tangible assets."[264] It should be clear that funds, here, are synonymous to money. The second function of the financial market, they continue, is to provide liquidity, i.e., the possibility for an investor to sell his financial assets for money.[265] Its third function is to reduce the search and information costs of transacting which, except for the loss of time, also consist in money.[266]

All these functions relate to the allocation of money. Therefore, it seems appropriate to say that these authors apply the concept of *private capital*. It is in this

[257] Mishkin (1999, p. 3, emphasis added), see also Johnson H. (2000, p. 2), Howells/Bain (2007, p. 30).
[258] See Cargill (1983, pp. 27 ff.), Kohn (2004, pp. 4 ff.), Mishkin (2007b, p. 278.).
[259] See Houthakker/Williamson (1996, p. 24).
[260] See Kohn (2004, pp. 4 ff.).
[261] Johnson H. (2000, p. 22, emphasis added)
[262] Tsiang (2008, p. 171, emphasis added)
[263] Fabozzi/Modigliani (2009, p. 9, emphasis added)
[264] Ibid. (p. 5)
[265] See ibid. (p. 9).
[266] See ibid. (p. 10).

sense that the term "capital" is generally employed synonymously to "loanable funds."[267] One gets money on the financial market, and with this money, businessmen can buy *everything they need for their operations*. In this way, the financial market opens up the access to all kinds of goods that can serve as private capital to the businessmen.

This terminology does not face the conflict that arises between the social and private view that has been hinted at above. It does not answer the question as to what are the streams of "real" goods that correspond to the cash flows traded on the financial market. However, as long as the private notion of capital is employed consistently, there is no problem of misunderstanding. The terms "loanable funds," "funds," "purchasing power," and "capital" can be employed in such a way that they relate to money streams only. No ambiguity arises. The field of Corporate Finance, for instance, does perfectly well with mere monetary magnitudes. From the point of view of corporations, only money is important. To quote a modern textbook: "Corporations face two broad financial questions: What investments should the firm make? and How should it pay for those investments? The first question involves spending money; the second involves raising it."[268] In this environment, it is clear that all the terms used refer to money. Thus they are interchangeable. The following passage from Brigham and Ehrhardt illustrates this point:

> Businesses often need *capital* to implement growth plans; government requires *funds* to finance building projects; and individuals frequently want *loans* to purchase cars, homes, and education. Where can they get this *money*?[269]

[267] See Holmstrom/Tirole (1997, p. 671), Wurgler (2000, p. 188), Johnson H. (2000, p. 6).
[268] Brealey et al. (2008, p. 2)
[269] Brigham/Ehrhardt (2008, p. 12, emphasis added)

The terms “capital,” “funds,” “loans,” and “money” all relate to the same thing, namely to cash. And within Corporate Finance, they are not supposed to mean anything in addition.

Yet, *economists* usually also want to give some “real” meaning to the terms they employ. The funds traded on the financial market are supposed to be more than mere money. As Jeffrey Wurgler expresses it, “financial markets and institutions do more than just to provide a sideshow to the real economy; they perform a fundamental allocative function.”[270] Even so, when it comes to state what exactly is allocated in “real” terms, Wurgler himself only provides a placeholder. The allocation of capital apparently corresponds to what he calls “resource allocation,”[271] an expression he does not discuss any further. And in not doing this he is in good company. Many economists sidestep the difficulties in the same way. They say things like: “Financial markets make it possible for *resources* to be devoted to productive uses for the benefit of society,”[272] or: “By providing *resources* necessary for increasing plant and equipment […] an efficient financial market enables the business sector to invest in the future.”[273] Yet, they do not define the mysterious “resources” they are talking about. Sometimes it even seems that these resources are just another expression for the loanable funds. Mishkin, for example, speaks of “private investors” who can decide whether they “spend their resources on collecting information”[274] or not. In this case, the resources cannot have any other meaning than “money.” One of the few authors who become more precise is James Bradfield. For him, the resources the financial market helps to allocate consist of “the 24 hours that [a person] has each day”, the “ability to work,” the “levels of various

[270] Wurgler (2000, p. 189)
[271] Ibid.
[272] Johnson H. (2000, p. xxviii, emphasis added)
[273] Santomero/Babbel 1997, p. 8, emphasis added). For similar statements see Herring/Litan (1995, p. 139), Levine (1997, p. 691), Howells/Bain (2007, p. 366).
[274] Mishkin (2008, p. 28)

skills," "land" and "tools."[275] Later on, however, he also switches to money magnitudes without explaining the connection between the resources and the money magnitudes.[276]

So our short look into the literature shows that economists usually have the homogeneous concept of private capital in mind when they speak of the object of the financial market. The connection that they try to establish to the "real" sector in speaking of "resources" instead of money is just tokenism.

This one-sided interpretation of the financial market overlooks the observations that have been made in the first part of this work. Finance is only necessary when *costs* occur, i.e., when a consumption sacrifice is the precondition of action. Yet, private capital not only consists of consumers' goods, but also of machines, factory buildings, and raw materials. These are goods that do not represent potential consumption for anybody and that therefore cannot be said to be necessary to finance anything. There are no costs that could be defrayed by means of such goods. They are not in need when it comes to *finance* action. The terms "loanable funds," "funds," "purchasing power," and "capital" do not allow for an in depth analysis of this problem. They describe a homogeneous entity, a "jelly," that consists of all sorts of unspecified goods that are, since they are homogeneous, "perfect substitutes for each other."[277] In other words, *these terms cannot conciliate the fact that finance is only needed where consumption sacrifices have to be incurred with the fact that it is not consumers' goods, but money that is traded on the financial market.* In order to bring these facts together it is necessary to underpin the private view with the picture of the economy that rests on the notion of social capital. The latter is remindful of the heterogeneity of capital, and by means of it we are enabled to more easily distinguish those goods that are necessary in

[275] Bradfield (2007, p. 48)
[276] See ibid. (pp. 60 ff.).
[277] Lachmann (1978, p. 6)

finance. Both notions of capital have to be dealt with before we can say something meaningful about the financial market, and that is what the parts II and III are all about.

It might be interesting to note that in modern growth theory the two concepts of capital are intermixed as well. In the basic growth model capital is supposed to be a *homogeneous* entity called K(t).[278] Generally, this K(t) consists of heterogeneous producers' goods like bulldozers and semiconductors.[279] However, as Acemoglu states, this K(t) "is typically measured in terms of the *value* of the machines,"[280] i.e., of the producers' goods. Again both notions are not clearly separated from each other. Capital is specified in real terms by saying that it consists of a special kind of heterogeneous goods, here "the bulldozers" or "the machines." Thus its significance for production from a social point of view is indicated. But, as it is homogeneous and "measured in terms of value," it is also leaned against the notion of private capital that is homogeneously denominated in money terms. Barro and Sala-i-Martin even define the K(t) as consisting of a "homogeneous good" from the outset.[281]

It is impossible to unite both notions in this way. The money value of goods is not a measure for their social significance in production. Some machines might go up in value but produce less output than before. What about capital, then? Social capital has decreased, but private capital increased. These problems cannot be tackled as long as the two notions are not separated clearly. It is one of the main tasks of this work to try to theoretically separate the two notions of capital and thereby to allow for a comprehensive analysis of the financial market.

[278] See Barro/Sala-i-Martin (2004, p. 25).
[279] See Jones C. (2002, p. 22).
[280] Acemoglu (2008, p. 33, emphasis added)
[281] See Barro/Sala-i-Martin (2004, p. 25).

8.4 Social capital and the subsistence fund theory

In the following we are providing an explanation for the appearance of costs and their financing that rests upon the notion of social capital. In this regard it seems worth noting that the theory of originary interest presented in the first part resembles Frank Taussig's interpretation of the classical theory of interest.

> According to this [the older view by Ricardo and Mill], all the operations of capitalists are resolvable into a succession of advances to laboreres. Profits or interest (practically the same thing was meant in the earlier terminology by these words) arose from an excess of what the laborerers produced over and above what was turned over to them.[282]

Advances, as will become clear later on, are supposed to consist of means of subsistence or consumers' goods. So the costs of the "capitalists" in this theory are represented by consumers' goods, what makes the behaviour of capitalists look very similar to our foregoing discussion where costs were defined as the sacrifice of consumers' goods. Furthermore, as consumers' goods are singled out as a specified kind of goods, the capitalists obviously do not command a *homogeneous* fund in this theory, but an amount of *heterogeneous* goods. In other words, the notion of *social capital* is employed. Taussig adds that this "mode of treating the problem was associated with the *wages-fund doctrine*."[283] Therefore, when it comes to interpersonal finance, this theory seems apt to serve as a link to both our theory of the economic aspects of human action and to the social view of capital.

However, the wages fund theory has been abandoned long ago and nearly "sank without a trace."[284] Later writers, like Mark Blaug, consider it "bizarre" and wonder

[282] Taussig (1908, p. 334)
[283] Ibid. emphasis added.
[284] Pigou (1949, p. 180)

how "intelligent men, like Ricardo, Malthus, McCulloch and John Stuart Mill [could] have believed so absurd a doctrine and not just for a few years but for almost two generations."[285] In the following, we try to explain why the wages fund theory has been abandoned, and why the reasons that were given in the support of its abandonment cannot stand up to closer examination. It presents a pretty good, though not perfect, view of the non-monetary or social side of interpersonal finance.

Before the wages fund theory can be expounded, it seems necessary to clarify the use of terms. The classical economists divided society into three separated classes, the workers, the land owners, and the capitalists.[286] By doing this they were able to isolate in their analysis the different functions within society and attach each of them to one class of people. Thus, the separation into three classes is not thought to depict the actual organisation of society, but merely to stress the functions that seem necessary for production from a social point of view. Whether there really exists a "class" of people that could rightly be called capitalists does not matter for the analysis. What counts from the social point of view is the function itself, no matter who might fulfil the task, a group of people, a machine, or a national planning board.

In the following exposition, the classical terminology is adopted. It has to be kept in mind that what we are talking about are the *functions*, not the people or "classes" themselves. We only *assume* the mentioned three classes of people. Of these, the capitalists – and only they – *save* and are able to *advance wages* to the workers and *rents* to the landlords. The latter two classes do not save. They have different functions in production that I consider to be self-explanatory.

Furthermore, the term "*wages* fund" indicates that it is a fund destined for the payment of *workers* only. However, as Böhm-Bawerk states, also the landlords and the

[285] Blaug (1994, p. ix)
[286] See Mill (1965, p. 234).

capitalists have to consume.[287] That is why he substitutes the more general term "*subsistence fund*" for the older "wages fund."

Generally, in the work at hand the term "*subsistence fund*" is employed. It constitutes a fund that supports the owners of all originary factors of production – workers and landlords. Although the land owners are hardly mentioned, they are included in the analysis. What applies to workers also applies to them. Böhm-Bawerk notwithstanding, the capitalists are *not* supported by this fund as they provide it themselves. When they are in need of support, they will just decrease the fund that supports the other classes.[288] The term "*wages fund*" instead of "subsistence fund" will be employed when the classical wages fund theory itself is discussed. However, also the wages fund of the classical economists can easily be interpreted as to apply to wages *and* rents. Thus, in the end, both terms are synonymous. The "wages fund" is inappropriate only from a terminological point of view as it seems to exclude rents.

For the time being, money is excluded from the analysis. Only the "real" or "social" side will be analysed in what follows. The question of how exactly the finance is organised in the market economy does not concern us here. This problem is deferred to the next part. However, so far as it goes, the social view of things illuminates important points that would not be visible without it.

Section 9.1 contains the wages fund theory as expounded by the classics. Section 9.2 demonstrates that the way the capitalists are supposed to behave in this theory is compatible with the economic aspects of human action presented in part I of this study. The following two sections deal with the two weak spots of the theory. The classical authors not always keep the terms "capital" and "wages fund" apart which can lead to some confusion. Therefore, it is necessary to define the concepts more precisely. Furthermore, the original version of the theory does not pay attention to the length of

[287] See Böhm-Bawerk (1921b, p. 102), also Sechrest (2006, p. 32, n. 7).
[288] See Dorp (1937, p. 80).

the period of production. It is shown that both shortcomings are overcome by Richard von Strigl in his book "*Kapital und Produktion*."[289] In section 9.5 the fully developed subsistence fund theory is applied to the question of finance. From the social point of view, the function of the financial market is to allocate the available subsistence fund. Finally, section 9.6 shows why the subsistence fund theory, despite its merits, does not suffice for an overall explanation of the rationale of the financial market. That it abstracts from the question as to how the financing of the economy is actually organised hinders it from explaining the working of the actually existing financial market. In Chapter 10, the subsistence fund theory as expounded in chapter 9 is defended against the criticisms that led to its abandonment by the economic profession.

[289] See Strigl (1934b).

9. The subsistence fund theory

9.1 Exposition of the classical theory of the wages fund

The root of the wages fund theory can be traced back to authors writing before Adam Smith.[290] But only with the latter this theory starts to receive a more systematic treatment. We are not concerned with the detailed historical development of the theory. In essence, it is "nearly self-evident,"[291] a "truism"[292] as Jevons calls it; yet, an important truism apparently – even Jevons himself employs it.[293]

To begin with, Adam Smith and his epigones are very well aware of the correct order of things. Before production can be started, there has to be something else in existence that maintains the workers until they have finished the product.[294] This is, though trivial, a basic insight. *A fund for the payment of wages, however defined, has to be there before work can be done*.[295] The idea is clearly taken from the conditions prevailing in agriculture.[296] Harvest is reaped only once a year. But until this point in time, people working in the farm production have to be supported.[297] And this cannot be done with the help of their own product because it doesn't exist in consumable form, yet. The consumers' goods, or the means to obtain consumers' goods, have to be "advanced"[298] to the workers out of the product of past labour.[299] The store out of which these consumers' goods are paid the classics call "funds destined for the maintenance of productive labour,"[300] "the fund out of which their [labourers'] wages

[290] E.g. Turgot ([1766] 1997, p. 188). See Taussig (1896, p. 127), Weingarten (1935, p. 8), and Guglielmi (1945, pp. 27 f.).
[291] Senior (1830, p. iv, and 1854, p. 153)
[292] See Jevons (1911, p. 268).
[293] See the comment by Stigler (1946, p. 29).
[294] See Smith ([1776] 1869, pp. 68 f.).
[295] See Eucken (1954, p. 62).
[296] See Phillips (1967, pp. 321 f.), also Garrison (1990, p. 134).
[297] See Smith ([1776] 1869, pp. 68 f.).
[298] See Garrison (1990, p. 134), also Taussig (1910, p. 144, and 1908, p. 334), Smith ([1776] 1869, p. 69).
[299] See Ekelund/Olsen (1973, p. 403).
[300] Smith ([1776] 1869, p. 195)

are wholly paid,"[301] or simply the "wages fund." As the wages fund is meant to serve for the payment of workers, it "embraces the various articles intended for 'the use and accommodation of the labouring class.'"[302]

As far as only periodic production is concerned, like in agriculture, even important critics of the wages fund theory admit that "a special store is obviously needed."[303] However, the classical economists are of the opinion that a fund of consumers' goods ready to support workers is the prerequisite not only of agriculture, but of *every form of production*. Before soil can be cultivated, something "must be provided for the support of the labourers employed upon it, *in like manner as it must be provided for the support of those engaged in manufactures, or other branches of industry*."[304] Now, as the wages are paid out of a special fund, it naturally follows that wages depend on this fund on the one hand, and the number of labourers that share this fund on the other. General wages depend, in this view, "on the Extent of the Fund for the maintenance of Labourers, compared with the number of Labourers to be maintained."[305] These are the two variables that the classical wages fund theory is composed of: the wages fund and (working) population. From here the theory can easily be extended in a way to allow for a demand and supply analysis. Wages are paid out of the wages fund, which is the demand for labour. The number of the workers constitutes the supply of labour. If the former grows, wages will rise, if the latter grows, wages will decrease.

As the wages fund theory occupies an important place within this part of the discussion, John Stuart Mill's formulation of it in his *Principles of Political Economy* shall concludingly be quoted at some length. In the first book, he clearly demonstrates

[301] McCulloch (1854, p. 4)
[302] Ibid.
[303] Clark ([1908] 2008, p. 247), similarly Blaug (1994, p. ix).
[304] McCulloch (1854, p. 4, emphasis added)
[305] Senior (1854, p. 153)

that he is well aware of the necessity of a fund of consumers' goods that exists before further work can be done:

> Except the labour of the hunter and fisher, there is scarcely any kind of labour to which the returns are immediate. Productive operations require to be continued a certain time, before their fruits are obtained. Unless the labourer, before commencing his work, possesses a store of food, or can obtain access to the stores of some one else, in sufficient quantity to maintain him until the production is completed, he can undertake no labour but such as can be carried on at odd intervals, concurrently with the pursuit of his subsistence. He cannot obtain food itself in any abundance; for every mode of so obtaining it, requires that there be already food in store. […] The labour employed in producing this stock of subsistence, forms a great and important part of the past labour which has been necessary to enable present labour to be carried on.[306]

In the second book, we find the wages fund theory:

> Wages, then, depend mainly upon the demand and supply of labour; or as it is often expressed, on the proportion between population and capital. By population is here meant the number only of the labouring class, or rather of those who work for hire; and by capital only circulating capital, and not even the whole of that, but the part which is expended in the direct purchase of labour. […] There is unfortunately no mode of expressing by one familiar term, the aggregate of what has been called the wages-fund of a country: and as the wages of productive labour form nearly the whole of that fund, it is usual to overlook the smaller and less important part [wages of soldiers, domestic servants, and all other unproductive labour], and to say that wages depend on population and capital. It will be convenient to employ this expression, remembering, however, to consider it as elliptical, and not as a literal statement of the entire truth.

[306] Mill (1965, p. 33)

> With these limitations of the terms, wages not only depend upon the relative amount of capital and population, but cannot, under the rule of competition, be affected by anything else. Wages (meaning, of course, the general rate) cannot rise, but by an increase of the aggregate funds employed in hiring labourers, or a diminution in the number of the competitors for hire.[307]

9.2 The economic aspects of human action and the wages fund

The wages fund theory can be shown to be closely connected to our analysis of the economic aspects of human action. According to it, production presupposes the existence of a fund of consumers' goods. Without this fund, no production that is not from hand to mouth is possible. No *costs* could be incurred without such a saved fund of consumers' goods. Thus, the wages fund theory seems to be consistent with our notion of costs as consumption sacrifice that presupposes the ownership of saved consumers' goods.

It also accords to our definition of *investment* as the tie-up of previously saved consumers' goods. This can be seen, as I believe, from the following statement of John Cairnes: "Restricting our view for the present to that portion of the general *Wages-Fund* which goes to support productive labour, we have, in the first place, to observe that the hiring of labour for productive purposes is an incident of the *investment* of capital."[308] It is true that Cairnes uses the term capital of which the meaning is pretty unclear. The analysis of this term within the wages fund theory has to be deferred to the next section. However, it can be seen that it is, at least among other things, the wages fund, the fund of *consumers' goods*, that is *invested*. Elisabeth van Dorp expresses this thought more

[307] Mill (1965, pp. 337 f.)
[308] Cairnes (1874, p. 168, emphasis added)

clearly when she says that "the capitalist supplies the labourer with consumption-goods; doing this is identical with investment."[309]

We come to the term "finance." For us, the place of finance in human action is at the intersection between costs and saved consumers' goods. That the wages fund theory can easily be extended in a way that shows that the advancing of consumers' goods to the workers runs parallel to the financing of production is demonstrated by Richard von Strigl: "It is clear that, here [in the payment of originary factors of production], the *financing* of production is identical to the *support* of the originary factors of production."[310] The support of these factors is made possible by "the existence of a fund of the means of subsistence (*wages fund*)."[311] In other words, the consumption of the factors constitute the *costs* of production. Financing production then makes necessary to incur these costs, i.e., to support the workers.

Also to the interest problem the wages fund theory can be applied in a way that corresponds to our theory of profit and originary interest as the spread between costs and revenues. Following Landry, what we call wages fund can be seen as "*property which might be consumed*, which might be employed to procure an immediate or almost immediate satisfaction, and of which we make such a use that we shall recover it or have its *product* only after the expiration of more or less time."[312] The difference between the wages paid out of the not consumed property and the product then constitutes profit or loss to the capitalist.[313] So the wages fund constitutes the costs, the product constitutes the revenues, and the residual – profit or loss – is received by the capitalists. In the end, all the relevant terms, "cost," "revenue," "investment," "profit," and "financing," can thus be interpreted as to refer to the actions of the class of

[309] Dorp (1937, p. 77, see also pp. 80, 239).
[310] Strigl (1934a, p. 28, emphasis added)
[311] Ibid. (p. 19, emphasis added)
[312] Landry (1909, p. 571, emphasis added)
[313] See Dorp (1937, p. 5).

capitalists. Their behaviour in the wages fund theory corresponds perfectly to the logic of action as expounded in part I.

Thus, at first sight, the wages fund theory seems apt to serve as a basis for the analysis of the interpersonal finance. There are, of course, several problems with this theory as stated by Smith and the other classical authors. Some of them have already been solved by later writers who extend the wages fund theory in some central respects. The most important extensions will be presented in the course of the following discussion. For now, a question of terminology, the use of the term capital in the real sense, has to be settled.

9.3 The use of the term "capital" as opposed to "wages fund"

It is necessary to hint at the following shortcoming of the older expositions of the wages fund theory. In its classical versions there lacks a clear distinction between the terms "wages fund," "stock," "circulating capital," "fixed capital," and "wealth." This lack of clarity often occurs when the theory is stated in a short way, for instance when it is only expressed in terms of the relationship between the demand and the supply of labour. In such cases it is very often forgotten that the demand for labour must consist in goods that are intended for "the use and accommodation of the labouring class."[314] Instead, the general term *capital* is substituted. Says MacCulloch: "[I]t is obvious that the rate of wages in all countries and at all periods, depends on the ratio between the portion of their *capital* appropriated to the payment of wages, and the number of their labourers."[315] Here he still talks about a *portion* of capital, meaning, of course, the wages fund. Elsewhere he omits this qualification and just states that "the rate of wages wholly depends on the proportion between *capital* and population."[316]

[314] McCulloch (1854, p. 4)
[315] McCulloch (1854, p. 7, emphasis added), see also Senior (1830, p. 19).
[316] McCulloch (1854, p. 4, emphasis added)

The argument is often stated in such a short and unclear expression that verbalises the equation:

$$wages = \frac{capital}{population}$$

John Stuart Mill applies this idea to demand and supply analysis even in a headline: "Wages depend on the demand and supply of labour – in other words, on population and capital."[317]

Substituting the term "capital" for the more precise "wages fund" raises a problem. As, according to the classics, also machines and intermediate goods are part of capital,[318] it is not necessarily the case that the wages fund and therefore wages increase if capital – the alleged demand for labour – increases *ceteris paribus*. Even a decrease in the wages fund is well possible while capital as a whole might grow. Senior, for instance, is well aware of this problem. He knows "of no definition of that term [capital] which will not include many things that are not used by the labouring classes; and if our proposition be correct, no increase or diminution of *these* things can *directly* affect wages."[319]

Senior, as a critic, has a very good sense of what is wrong with the wages fund theory,[320] at least in this respect. Yet, as several commentators have noticed, when it comes to the positive exposition of his own ideas, he falls back mainly to the more simple line of reasoning of the writers he has criticised himself before.[321] It seems fair to say that the classical authors generally have not clarified their use of terms. Even Cairnes, of whom Taussig remarks that his endeavour to reshape and rehabilitate the wages fund theory was "the first attempt, since Adam Smith, at a deliberate and careful

[317] Mill (1965, p. 337), see also Ricardo ([1817] 1911, p. 55).
[318] See e.g. Ricardo ([1817] 1911, p. 53) who was quoted above.
[319] Senior (1854, p. 154, emphasis by Senior)
[320] See Salz (1905, p. 80).
[321] See Taussig (1896, pp. 200 f.), Salz (1905, pp. 80 ff.), also Wicksell (1934, pp. 194 f.).

statement of its meaning,"[322] ends up with the "old-fashioned way of reasoning on the subject."[323] That is why later writers usually have in mind a crude version of the theory. According to them, the essence of the wages fund theory is simply that wages "are drawn directly from capital,"[324] "are paid 'out of capital'," [325] or " $w = \frac{K}{A}$,"[326] expressions that Irving Fisher calls "sorry remnants of the famous wages fund doctrine."[327]

Richard von Strigl shows that it is not necessary to abandon the wages fund theory if one constantly keeps in mind that capital, in the sense that it was used by the classical economists, contains not only the wages fund, but all sorts of goods necessary in production. He distinguishes three parts of capital, "free capital," "intermediate goods," and "fixed capital."[328] Only the first one of these corresponds to the classical wages fund. Strigl calls it "the fund of the means of subsistence" and explicitly states that it is a "store of consumers' goods."[329] In this regard he is anticipated by Stanley Jevons who similarly maintains that "current means of sustenance [articles in common daily use] constitute capital in its free or uninvested form."[330] Like the classical economists, Strigl considers this fund to be the "prerequisite" for any "roundabout production," [331] i.e., production that is not only from hand to mouth. How the production process can be explained by means of the classification of capital suggested by Strigl can be seen in the following statement of his:

[322] Taussig (1896, p. 241)
[323] Ibid. (p. 263)
[324] George (1911, p. 20)
[325] Fisher (1896, p. 524)
[326] Stigler (1946, p. 283). w: wages; K: capital; A: number of labourers.
[327] Fisher (1896, p. 524)
[328] Strigl (1934b, p. 39). Similarly Weber (1958, p. 193).
[329] Ibid. (p. 39)
[330] Jevons (1911, pp. 223 f., emphasis erased)
[331] Strigl (1934b, p. 38)

> The production process at work in roundabout methods of production is determined by the employment of these three forms of capital. The fact that originary factors of production can initially be used in the production of intermediate products which mature only in the course of time into finished products, is made possible by a supply of free capital. A special form of roundabout method of production is present if in addition—and this again is only possible under the condition of a supply of free capital—originary factors of production are employed in the production of fixed capital, which later in turn produces the finished product by incorporating intermediate products and additional originary factors of production. However, because the production of a capital good is only possible with the help of a subsistence fund which supports a process that has not yet produced any consumer goods, every capital good must have been preceded by free capital. The capital good is produced as a result of the expenditure of free capital.[332]

That also this view of the production process can easily be reconciled with our notion of the economic aspects of human action is shown by Strigl himself. According to him, new capital can only be built by *saving finished consumers' goods*.[333] These goods, the free capital, are *invested* and tied-up in the intermediate and capital goods for a period of time.[334] At the end of the process, consumers' goods are set free again.[335] So he also stresses the central role played by consumers' goods.

It is necessary to point out that Böhm-Bawerk, although his *Positive Theory of Capital* serves as a foundation for Strigl's work, employs a notion of social capital that does not include consumers' goods.[336] He does so because the latter are, as he thinks, the *end* and not the *means* of production.[337] Yet, Böhm-Bawerk ignores that, from a social point of view, consumers' goods not only are the end of production, but very

[332] Strigl (2000, pp. 27 f.)
[333] See Strigl (1934b, p. 41).
[334] See ibid. (pp. 41 f.).
[335] See ibid. (p. 42).
[336] See Böhm-Bawerk (1921b, p. 94). In contrast to Böhm-Bawerk, Wicksell (1934, pp. 144 f.) includes them.
[337] See Böhm-Bawerk (1921b, p. 100), also Garrison (1990, pp. 146 f.).

often also its requisite. To take only the classical case, farm production presupposes the securing of the livelihood of those who are involved. Without a fund of consumers' goods it is impossible to wait one year for the next harvest. These consumers' goods are not only the end of production, as they are consumed by the workers, but also a prerequisite for production. So Strigl does not make a logical mistake when he includes the subsistence fund in the term "capital."

Anyway, it may well be true that the classics and others are not too precise in their use of the terms and often fail to distinguish between the wages fund and the whole of capital. However, it is not necessary to *therefore* bury the whole theory. One only has to be attentive in the formulations.

9.4 The stages of production

Although Adam Smith and his successors are aware of the correct order in time, there are other points in connection with the problem of production as a time-consuming process that they do not pay attention to. As Taussig remarks, Smith

> thought of production piece by piece. The employer needed funds with which to pay laborers simply until the product was salable: the need of advances ceased when the particular article in hand was completed. This simple every-day operation is easily confounded with the larger and more intricate process by which the labor of the whole community is spread over a lengthened period.[338]

Briefly speaking, production is not completed when work has been done by one stage of production.[339] Very often the output of one stage consists of intermediate goods or tools which are not apt to serve as a fund for the payment of wages. Carl Menger, in his

[338] Taussig (1896, p. 150)
[339] See Block (1990, p. 202).

famous *Grundsätze der Volkswirthschaftslehre*, realises this problem and displays a concept of the production process that is divided into several stages. He distinguishes not only, as the classical authors usually do, between the consumption and the production sphere.[340] Instead, he introduces the notion of the different orders of goods. Consumers' goods he calls goods of the first order. Goods that help to produce the latter are goods of the second order. Those that help to produce these are goods of the third order and so on.[341] That is, not all goods that are produced are goods of the first order and can be consumed. A large part of the goods that are produced consists of goods of the higher orders like raw materials, intermediate goods, or machinery. It is clear that the output of higher order goods does not enlarge at all the fund of consumers' goods, the wages- or subsistence fund. With the higher order goods it is impossible to pay real wages or, in our terms, to incur any kind of costs. In order to do so one has to command savings, i.e., consumers' goods. Only with them, production can be financed. The wages fund that was originally in existence has to suffice not only until the end of any stage of production, but until consumers' goods are produced that fill up the wages fund again.[342] The classics, in other words, did not duly consider the period of production in the Böhm-Bawerkian sense.[343] According to an earlier publication of Ludwig von Mises, where he explicitly[344] followed Böhm-Bawerk's terminology and theory,

> [t]he period of production which is thus defined must be of such a length that exactly the whole available subsistence fund is necessary on the one hand and

[340] See Skousen (2007, p. 16).
[341] See Menger (1968, pp. 7 ff.), Garrison (1990, p. 135).
[342] See Wicksell (1934, p. 190) and Taussig (1910, p. 145).
[343] See Böhm-Bawerk (1921b, pp. 480 f.), Dorp (1931, pp. 300 f.), Fisher (1896, pp. 524 f.). James Wilson (1847, pp. 126 f.), however, a member of the *Banking School*, had a very good understanding of the relationship in question.
[344] See Mises ([1912] 1953, p. 339, n. 1).

> sufficient on the other for paying the wages of the labourers throughout the duration of the productive process.[345]

Ceteris paribus an increase in wages has to shorten this period because otherwise (real) wages could not be paid until production is finished and, consequently, workers would starve. This problem is not tackled in the writings of the classical economists. Among the authors who try to overcome this deficiency, Richard von Strigl links the fact that production consumes time and involves numerous stages most closely to the subsistence fund concept. According to him, "[t]he more capital of this kind [fund of the means of existence] is created, the more and longer roundabout processes of production can be started."[346] In this respect he pays attention to the problem whereupon the subsistence fund has to support not only those who produce the final good, but also those who produce the raw materials necessary for the production of the final goods, those who produce machines, and those who win the raw materials for the machine industry.[347] A great part of his book on *Capital and Production* is dedicated to clear up this relationship.

When one looks at the production process from this angle, another problem becomes visible. Some production processes take many years. In the meantime, the originary factors of production have to be supported. Is it reasonable to suppose that there is, at the beginning of these processes, a fund of consumers' goods already in existence that suffices for the whole time of production? That seems impossible as many consumers' goods perish in a very short time. This problem is solved in real life by *synchronisation*. Production does not occur in a single process, but rather it will be divided into several parts, such that within a period of time several independent

[345] Ibid. (p. 360), who follows Böhm-Bawerk (1921b, p. 449).
[346] Strigl (1934b, pp. 85 f.)
[347] See ibid. (p. 27).

production processes will be completed.[348] This way, the subsistence fund is filled up frequently. The output of the processes that finish today is used to finance those processes that will produce output only in the future.

It must be added that, although there are lots of intermediate goods and stages, it is still the subsistence fund, and only the subsistence fund, that is necessary to finance production. This is most clearly seen when it is assumed for a second that the whole production process is integrated *vertically*. Vertical integration means, following Rothbard, that one or several firms have integrated "all the stages of production of a product […] until finally the product is sold to the consumer."[349] For these integrated firms then, the only thing that they have to finance is the consumption of the originary factors they employ. The mere existence of all sorts of intermediate goods does not call for any separated financing. Only the workers that are necessary to produce and maintain these goods need to be supported, and this is done by the subsistence fund.

From the social point of view, it does not matter whether the production process is vertically integrated or not. Even if every stage was owned by a different capitalist, no additional sacrifice of consumption would become necessary. The mere transfer – transport etc. aside – of intermediate goods does not absorb any social resources. In the words of Walter Block, "a purely *legal* phenomenon, the ownership and organization of business enterprise, [does not] affect a purely economic phenomenon." [350] The subsistence fund, or free capital, is the only thing necessary to finance production.

[348] See ibid. (p. 14).
[349] Rothbard ([1962] 2004, p. 367)
[350] Block (1990. p. 203, emphasis by Block)

9.5 Financial market as the market for the subsistence fund

Within the picture of the production process that is built upon the social notion of capital it is now possible to visualise the work that has to be done by the institutions that are supposed to organise the financing of the economy. In a world where the organisation of production does not rest upon money contracts and markets, what is needed in order to start and realise any kind of production process is a means to support the owners of the factors of production labour and land. The mere existence of any production goods does not make necessary any further outlays except where labour and land services have to be paid in their maintenance. So the only thing that can be counted as costs for any kind of production process, or, to say it differently, the only thing that is needed in order to *finance* production, is the availability of consumers' goods that allow for the support of the owners of the originary factors of production. From this point of view, the task of any market the function of which might be to finance the economy would be to allocate the subsistence fund.

Now, there are indeed some economists who restrict the function of capital or financial markets to the allocation of the subsistence fund, or, in Strigl's terminology, free capital. The free capital that could be had at such a financial market in the world of social capital then allows for the employment of the other factors of production because of its ability to serve as income for the factor owners.[351] Walter Eucken calls it the "market for the temporary transfer of provisions of consumers' goods,"[352] and himself adds that "some might call the latter 'capital market.'"[353] Also Strigl thinks that the object of the *capital markets* is the *subsistence fund*, the *free capital*.[354] The supply on the capital market, according to these authors, consists in the subsistence fund,[355] and

[351] See Bräutigam (1938, p. 80).
[352] Eucken (1954, p. 108)
[353] Ibid.
[354] See Strigl (1934b, pp. 79 f).
[355] See ibid. (p. 80).

the demand stems from those who want to start production.[356] The consumers' goods they obtain at the financial market enable them "to enter the market for the production factors and to buy productive services of labour and nature."[357]

The role of the capital or financial market within the economy would therefore be the allocation of the wages or subsistence fund. When costs appear in the course of production, i.e., when consumers' goods have to be sacrificed in order to pay the factor owners, one can go to the financial market and acquire consumers' goods there. With those one is able to finance production. Consumption credit could also be explained in this way. Those who turn to the financial market because they are in need for consumer credit can indeed obtain consumers' goods there as what is traded on these markets is a fund of consumers' goods.

The fact that only consumers' goods are able to finance production is rarely kept in mind by the authors who work with the social notion of capital. For Ludwig Lachmann, for example, who defines capital as the "(heterogeneous) stock of material resources,"[358] the "function of the capital market is to allocate scarce capital resources amongst a number of alternative uses."[359] Yet, his "capital resources" include much more than only consumers' goods, and the allocation of all these other goods, like raw materials and machines, can never be the function of a capital or financial market. From a social point of view, the transfer of these already existing goods does not absorb any resources or cause costs. It is only necessary to finance the consumption of the *persons* who produce, maintain, and transport these goods. That intermediate goods sometimes have to change hands is, as we have seen, a *legal*, not an *economic* problem. No resources whatsoever are absorbed in the mere transfer of ownership of intermediate goods. Their allocation therefore does not have to be financed.

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[356] See Eucken (1954, pp. 124 f.).
[357] Ibid. (p. 125)
[358] Lachmann (1978, p. 11, emphasis erased)
[359] Ibid. (p. 28)

In this context it seems appropriate to call attention to Böhm-Bawerk's ambiguous use of terms. Similar to Strigl he speaks of a "general subsistence market," [360] and on one occasion he even explicitly states that on this market "*consumable present goods*" [361] are traded. Yet, generally he employs the term subsistence fund in a different way. At most times he regards it as the whole stock of wealth except land, therefore including all sorts of goods that are not ready to be consumed.[362] And he also generally considers all these goods, not only consumers' goods, to constitute the supply on the subsistence market.[363] As long as he does so, he commits the same error as Lachmann and he therefore cannot be considered to be a predecessor of the view presented here, although his terminology might suggest this interpretation.

The authors that share the opinion of Lachmann and Böhm-Bawerk regard the whole social capital to constitute the supply on the capital or financial markets. However, to repeat, only the subsistence fund, *a part* of social capital, is necessary to finance the economy. There is, therefore, much to be said for the abandonment of the term "capital market," at least from the social point of view. Not all things that are capital from this perspective would be traded on a market that is supposed to finance the economy. It is misleading to still call it "capital" market. The term "financial" market fits much better. It stresses the function of the market that has been described above.

[360] Böhm-Bawerk (1921b, p. 391)
[361] Ibid. (p. 401, emphasis added)
[362] See ibid. (1921b, pp. 391 f.).
[363] Ibid.

9.6 The limits of the social notion of capital

The wages fund theory seems pretty apt to provide an explanation of the economic processes underlying production. Furthermore it enlightens the occurrence of costs within society and therefore the necessity of finance. Until now the parallels between this theory and the cost-revenue-analysis presented in the first part have been highlighted. It is time to point out the phenomena it cannot explain.

Its main shortcoming is its social viewpoint. It does not provide an explanation as to how the allocation of the wages fund to the production processes, to the production stages within this processes, and to the owners of the originary factors of production comes about. In the real world, no "subsistence fund market" exists where the means of subsistence could be allocated to the most important uses within society. The subsistence fund theory is compatible with the economic aspects of action only in a superficial way. In the end, it is only concerned with *technical* questions.[364] It concentrates on the *production process*. It abstracts from the *economic considerations of individuals*. It does not tell how actually living and acting people who, as we have seen, trade off costs against revenues, bring the allocation of the subsistence fund about. It has to be kept in mind that this is not a technical question. A lot of things that can technically be produced are not needed by anyone.[365] Who then is going to decide which one of several production processes that are all feasible obtains parts of the subsistence fund and which one doesn't? Furthermore, the theory does not explain what goods the subsistence fund is supposed to consist of. In a market economy, not the employers or a planning board decide on its composition, but the final consumers. How is this process accomplished and how can it be reconciled with the notion of social capital?

[364] See Menger (1888, pp. 155 ff.).
[365] See Landry (1904, pp. 4 f.), Menger (1888, p. 144).

It is true, within the subsistence fund theory, the *capitalists* seem to accomplish the task of allocating the subsistence fund. But this conception of things simplifies the story. In effect, nobody orientates his actions by something called "subsistence fund." This notion might well serve as a *mental tool* that allows for depicting the real processes that must underlie a production process based on the division of labour. But it cannot provide answers to some important non-technical issues. It ignores all problems connected with the *organisation* of finance in the real world.

Those who organise the production process in the market economy do not spare a thought about the subsistence fund. For them, the fund of consumers' goods that must be there in order to support workers does not constitute *costs*, or only a small fraction of it does so.[366] This fact is hinted at eloquently by Ferdinand Lassalle who criticises the notion of profit as a "compensation for abstinence."[367] In this view, he says, "the House of Rothschild" would be the "head penitent and ascetic."[368] Concerning our point he is definitely correct. Even if the capitalists wanted to, they would not be able to themselves consume the whole fund of consumers' goods that permanently comes to existence. To give these goods away and employ them in production, then, cannot be said to constitute a sacrifice or abstinence. There is no trade off. They would have no personal use for all of them anyway. The same is true for the revenues. The product of the combination of the originary factors very often is not a consumers' good at all, and even if it is, it usually won't be of personal interest to the capitalist such that he could consider these goods to be his revenue. At least modern mass production will hinder the capitalist from consuming all of the output himself. If at all, only a very small fraction of the output will be of interest to him. The rest cannot be said to be revenue in his view.

[366] See Engländer (1930, pp. 70 ff.).
[367] See Lassalle (1864, pp. 109 ff.).
[368] Ibid. (p. 110)

Whereas, from a social viewpoint, the function of the capitalists is to finance production by allocating the subsistence fund, real persons do not and cannot orientate their actions by this function. The subsistence fund and the final product are not entities that can serve as reference points for them. When entrepreneurs employ factors in order to produce, they, like anybody else, pursue their personal interests. In a market economy, they generally try to maximise their *money profits*. They buy the factors of production for money and sell the product against money. It is these money figures that they are concerned with. This is even acknowledged by Friedrich von Wieser: "The producer who participates in monetary commerce […] sticks at first both in language and in his economic calculation to the money form of capital."[369] In order to see how this private viewpoint of the capitalists can be conciliated with the social one it is necessary to investigate the organisation principle of the monetised market economy. The following part III will show that, although those who organise production orientate themselves by money prices, and although the object of the financial markets is money and not the subsistence fund, the conclusions of this part on social capital do not have to be abandoned.

Before we take this step it is essential to know why the wages fund theory has lost all the prominence it once possessed. In the course of time, a lot of prominent economists have opposed it vigorously. As we have declared this theory to be a useful mental tool, it seems necessary to answer these attacks. Chapter 10 will present the most important criticisms advanced against the wages fund theory and demonstrate that its core remains totally unaffected by them.

[369] Wieser (1924, p. 48)

10. Criticism put forward against the wages fund theory and anti-critique

10.1 The aversion of economists to the wages fund theory

Ahead of the presentation of the particular arguments uttered against the wages fund theory we quote Henry George at some length. He dedicates the whole first chapter of his famous work *Progress and Poverty* to the refutation of the classical wages fund doctrine. It is interesting to see what he thought would collapse together with this doctrine:

> For upon the assumption that wages are drawn directly from capital and not from the product of the labour is based, not only the doctrine that wages depend upon the ration between capital and labour, but the doctrine that industry is limited by capital - that capital must be accumulated before labour is employed, and labour cannot be employed except as capital is accumulated; the doctrine that every increase of capital gives or is capable of giving additional employment to industry; the doctrine that more labourers can be employed at low than at high wages; the doctrine that capital applied to agriculture will maintain more labourers than if applied to manufactures; the doctrine that profits are high or low as wages are low or high, or that they depend upon the cost of the subsistence of labourers; together with such paradoxes as that a demand for commodities is not a demand for labour, or that certain commodities may be increased in cost by a reduction in wages or diminished in cost by an increase in wages.
>
> In short, all the teachings of the current political economy, in the widest and most important part of its domain, are based more or less directly upon the assumption that labour is maintained and paid out of existing capital before the product which constitutes the ultimate object is secured. If it be shown that this is an error, and that on the contrary the maintenance and payment of labour do not even temporarily trench on capital, but are directly drawn from

> the product of the labour, then all this vast superstructure is left without support and must fall.[370]

According to this famous critic, the wages fund theory is a cornerstone of the classical system, not merely a part of it that could be erased or replaced at will.[371] Also modern economists will see from this quote that, if George is correct, the wages fund theory is central to economic questions that are still of importance today. In the words of Reisman, "the abandonment of the wages-fund doctrine […] made possible the acceptance of Keynesianism and the policy of inflation, deficits, and ever expanding government spending." [372] Whether one shares Reisman's opinion concerning Keynesianism or not, the wages or subsistence fund theory seems to be pivotal to economics.

Some of the "errors" mentioned by Henry George will be discussed in this chapter. It will be shown that there are some truths to rediscover that have been forgotten by the economic profession for a long time and that have been substituted by other theories that neglect these truths.

Before we move to the fate of and the attacks lanced against the wages fund theory, it might be interesting to look for the reasons for the animosity it has faced by so many economists. A good argument can be made that its unpopularity stems from its political implications. If all wages are paid out of the "wages fund", consisting, as may be assumed here, of all consumers' goods not consumed by the capitalists themselves, there is no possibility to increase wages in any way but in the increase of this fund. Even if it should be the declared end of politics, unions, or society as a whole to improve the lot of the workers, it follows from the wages fund theory that this is a very difficult or even impossible task, at least in the short run. For in order to do so, they

[370] George (1911, p. 20)
[371] See also Vint (1994, p. 215).
[372] Reisman (1998, p. 474)

would either have to increase the wages fund, or decrease population.[373] Of these, the latter only changes very slowly and cannot therefore be a short- or medium run policy variable.[374] The former, the wages fund, considered by the classics to be part of capital, or even synonymous to it, also doesn't depend on union or social action of any kind, but on the propensity of the capitalists to accumulate savings. Of course, one could argue that the consumption of the capitalists should be reduced. But the classics considered the goods consumed by workers (wage-goods) to be different from those consumed by capitalists.[375] It would therefore be useless to confiscate and reallocate them. And, indeed, as long as the wages fund theory "ruled triumphant,"[376] even union leaders were not trying to increase wages because they thought it was impossible.[377] What is more, if wages are "paid out of capital", it is even in the interest of workers to abstain from high wages as this leads to higher profits and therefore to the accumulation of new savings, a larger wages fund, and therefore higher wages in the future.

That is to say, from the wages fund theory follows the idea of harmony between the two "classes" capital and labour. It follows, in the words of McCulloch, "that at bottom they [the work-people] have no exclusive interests, and that their prosperity is intimately connected with, and is indeed inseparable from, the prosperity of the other classes."[378] If the capitalists thrive, so will workers. This leads Adam Smith to an optimistic interpretation of the development of society.[379] He thinks it best to leave everybody free to achieve his selfish goals. The increase of capital that would result

[373] See Ricardo ([1817] 1911, p. 56).
[374] See Wood (1888, p. 62).
[375] See Senior (1854, pp. 154 f.), also Ekelund (1976, p. 68) who builds his model of the wages fund on the notion of "wages-goods."
[376] Samuelson (1966, p. 317)
[377] See Breit (1967, p. 511), Hutt (1954, p. 28).
[378] McCulloch (1854, pp. iii f.)
[379] See Steffan (1929, pp. 3 f.).

would be of advantage also to the working class.[380] Thus, the political consequence of the wages fund theory is, at least concerning the lot of workers, to leave things to themselves – *laissez faire*.

It might be interesting to note that even Malthus who has a more pessimistic view of the natural development of things[381] does not think it necessary to intervene in support of workers. Quite the opposite is true. He believes with Smith that the wages fund limits the amount of wages, and is convinced of the impossibility to improve the workers' lot by union action or the like.[382] Malthus is pessimistic concerning the *second* variable determining the size of wages in the wages fund theory – the population and its increase "if left to exert itself with perfect freedom."[383] He retains throughout a conviction of the strong probability that every increase in the wages fund would induce a corresponding increase in population, and that wages, in terms of the habitual food of the labourers, would remain at one dead level.[384] According to him, "the means of subsistence, under circumstances the most favourable to human industry, could not possibly made to increase faster than in an *arithmetical* ration,"[385] whereas "population, when unchecked, goes on doubling itself every twenty-five years, or increases in a *geometrical* ratio."[386] Malthus thus gives a pessimistic turn to the wages fund theory. Instead of stressing the potential of increasing wages because of growing amounts of capital, as Smith has done before him, he points out the probability of an even faster growing population, therewith formulating what would become known as the "iron law of wages". This law is nothing else than the pessimistic interpretation of the wages fund theory.[387] However, as was already mentioned, even this pessimistic view on the wages

[380] See Weingarten (1935, p. 10).
[381] See Steffan (1929, p. 4).
[382] See Weingarten (1935. pp. 12 f.).
[383] Malthus (1817, p. 5)
[384] See Taussig (1896, p. 162).
[385] Malthus (1817, p. 14, emphasis added)
[386] Ibid. (p. 9, emphasis added). See already the short comment by Turgot ([1766] 1997, p. 161).
[387] Schörry (1934, p. 5)

fund theory does not allow for union action or similar political action. Malthus's negative view on the increase of the population leads to different conclusions that are reflected in the political advice given by later classical economists. Of the two variables that determine the well-being of labourers, the wages fund and population, *only the latter* is considered to be – at least in the long run – amenable to influence. Says Ricardo:

> It is a truth which admits not a doubt that the comforts and well-being of the poor cannot be permanently secured without some regard on their part, or some effort on the part of the legislature, to regulate the increase of their numbers, and to render less frequent among them early and improvident marriages.[388]

The political consequences of the wages fund theory seem to be the driving force of those who try to eradicate it. At least, all criticisms that have been uttered against it are thought to prove that it is not the wages fund that limits the amount of wages. From this would follow that social policy might well be able to ameliorate the living conditions of workers even in the short run. This motive is already pointed out by William Sumner in 1882:

> Every one who has yielded to sentimental faiths or longings to lessen the hardships of getting a living, or to discover some way by which men may attain to happiness except by conquering it, has seen himself forced to attack the doctrine that wages are paid out of capital.[389]

In the following sections, the arguments put forward against the wages fund theory will be examined critically. Many of them rest upon the confusion between social capital

[388] Ricardo ([1817], 1911, p. 61)
[389] Sumner (1882, p. 255)

and private capital. This can be seen already in section 10.2 where the famous recantation of the wages fund theory by John Stuart Mill in 1869 is presented. All critics argue throughout that it is not the wages fund, but something different that finances wages. In the decades leading to the Keynesian revolution, for example, several economists criticised the wages fund theory for ignoring the influence of aggregate demand. In their eyes, not a pre-existing fund, but demand for the final product determines the payment of wages (section 10.3). Others, most notably John Bates Clark, found the notion of the wages fund to be incompatible with the marginal productivity theory. As they see it, wages are paid according to the marginal productivity of labour, and not out of a fund whatsoever (section 10.4). John Bates Clark further held that the possibility of synchronising the production processes renders the subsistence fund redundant (section 10.5). Each of these criticisms can be shown either to be beside the point, mostly because they confound the different concepts of capital, or not to be at odds with the subsistence fund theory at all. I will argue that especially the marginal productivity theory seems to be congenial to the subsistence fund theory rather than in contradiction to it.

10.2 Money and the wages fund – Mill's recantation

The first criticism that shall be presented here has been very important in the history of the wages fund theory. John Stuart Mill himself, up to this point its most popular representative as the best known economist of the classical school,[390] abrogated it in 1869 in a review of William Thornton's book *On Labour, its Wrongful Claims and Rightful Dues, its Actual Present and Possible Future*.[391] Before going into the *theoretical* details of the reason for this step, it seems appropriate to make some *historical* remarks on the recantation.

[390] See Reisman (1998, p. 664).
[391] Thornton (1869). Mill's long and famous review article can be found in Mill (1967, pp. 631-668).

First of all, several commentators are of the opinion that Mill's recantation must not be taken too seriously. To give some examples, it is maintained that Mill hasn't thought through,[392] misunderstood,[393] or even "never quite understood the wages fund theory"[394] himself. And John Hicks "suspects that by 1868 he [Mill] was much less interested in economics than he had been as a younger man."[395] Accordingly, Stigler states that the discussion of the wages fund in Mill's *Principles* "becomes diffuse" in the later editions.[396] So there is not to be laid too much stress on what Mill said in his review.

Secondly, Mill didn't remove the theory from the subsequent seventh and last edition of his *Principles*, stating that "the results [of the discussion], in the author's opinion, are not yet ripe for incorporation in a general treatise on Political Economy."[397]

Thirdly, there is strong evidence for the existence of *personal reasons* leading Mill not to be too critical with Thornton and his arguments. His sympathy with the cause of the labour class is well known. The qualification of the wages fund theory could serve to clear the way for more union action. Mill explicitly mentions this point in his review article:

> The right and wrong of the proceedings of Trades' Unions becomes a common question of prudence and social duty, not one which is peremptorily decided by unbending necessities of political economy.[398]

[392] See Taussig (1896, p. 249).
[393] See Ekelund (1976, p. 67).
[394] Breit (1967, p. 522)
[395] Hicks (1973, p. 59). Hicks states the wrong date 1868, but refers to the review.
[396] Stigler (1988, p. 55)
[397] Mill (1965, p. xciv)
[398] Mill (1967, p. 646)

In addition, he was a personal friend of Thornton, and it is suggested that he wanted to do him a favour by granting him an important point.[399]

Fourthly, it cannot be said at all that Mill's review contains a recantation of the theory, as is usually maintained.[400] What he does is only to "plead guilty to having, along with the world in general, accepted the theory *without qualifications and limitations* necessary to make it admissible."[401]

But these considerations are of no help if one is interested in the reasons as to why the theory has actually been abandoned by nearly the whole of the economic profession. Considering the attack lanced by Thornton that will be cited in a moment it seems worth noting that Mill, at earlier times, has explicitly warned against the error of "not looking directly at the realities of the phenomena, but attending only to the outward mechanism of paying and spending."[402] In a nutshell, Mill wants to distinguish real from money terms because he knows of the confusion that arises if one lets this distinction go. As the reader will remember, we also meant, for the time being, to abstract from the existence of money. In order to deal with the argument that lead to the abandonment of the wages fund theory, this assumption must be loosened for a while. This can be done because no major theoretical problems are involved in the discussion. In more detail money will be analysed in part III.

Concerning the wages fund theory, the confusion between money and real terms might lead to the intermixture of the social and the private view on capital: if, according to the *social notion of capital*, the wages fund is seen as a (real) fund of consumers' goods, it is quite obvious that this fund is limited strictly in the short run. Only the *consumption* of capitalists might be reduced in order to increase the fund understood in this way. But if, according to the *private notion of capital*, the wages fund is considered

[399] See Breit (1967, p. 522).
[400] See for example Samuelson (1966, pp. 317 f.), Vint (1994, p. 2).
[401] Mill (1967, p. 643, emphasis added)
[402] Mill (1965, p. 89)

of as representing the *money wages* that could be paid to workers, this fund is not limited strictly any more. Aren't the "funds" of the capitalists very often used not only to feed themselves and their families, but also to buy goods that are not consumers' goods from the labourers' point of view, for example luxury goods, machines and intermediate goods? Couldn't these funds, the private capital of the employer, be paid out in wages as well?

Now, Mill provides an example for the case in point in order to hinder his readers from confusing real with money terms. According to him, *money wages* might well be increased if "what is […] paid in wages would otherwise have been laid out […] in buying plate and jewels."[403] Yet, he adds, this increase in *money* wages would not increase *real* wages as the "labourers, on receiving their increased wages, will not lay them out in plate and jewels, but in food. There is not, however, additional food in the country."[404] As can be seen from these quotes, Mill is well aware of the upper limit of wages determined by the fund of *consumers' goods* provided by the capitalists. He is not deceived because of wages being usually paid out of private capital in terms of money.

I consider it exaggerated to maintain, as Taussig does, that Mill's treatment in the *Principles* is unsatisfactory on this point.

> On the relation between the money funds or proceeds held by the immediate employer, and the food, clothes, and enjoyments, constituting the community's real "circulating capital," he [Mill] gave ambiguous and unsatisfactory statements, from which only a sympathetic interpreter could patch up a consistent and tenable doctrine.[405]

[403] Ibid (p. 56)
[404] Ibid (pp. 56 f.)
[405] Taussig (1896, p. 232)

Reading the passages Taussig blames for containing the confusion between real and money terms one has to state that his case is not very strong.

We do not go into more detail at this point as it does not matter whether Mill's treatment in the *Principles* is totally satisfactory or not. For our presentation of his recantation it is important that Thornton, in his attack, and especially Mill, in his review, do not pay attention to the warnings that Mill himself has issued in his *Principles*. Let us first have a look at Thornton's attack.

> What, however, does his and their [wages fund theorists] language mean? Evidently nothing less than this, that there is a certain national fund, the whole of which must necessarily be applied […] to the payment of wages. But is there really any such fund? If there be, it can only be an aggregate of smaller funds of the same kind possessed by the several individually composing the nation. But has any individual such a fund? Is there any specific portion of any single individual's capital which the owner must necessarily expend upon labour? […] But if there thus be no wage fund, which any single employer is bound to distribute among labourers, evidently there can be no aggregate fund which the whole body of employers are bound so to distribute;[406]

Thornton is theorising here as if the wages fund consisted of a specified part of the employer's capital and as if the latter consisted homogeneously of money funds, so that the employer could decide whether to spend it on labour or not. This might well be true for the individual capitalist, but not for all capitalists together, i.e., seen from a social perspective. The latter viewpoint makes clear that wages are definitely limited by the amount of consumers' goods available.

The idea that the wages fund is actually a fund of money Thornton could find, according to Taussig, in Mill's work. Consequently, as both Taussig and Breit maintain,

[406] Thornton (1869, pp. 84 f.)

Thornton constantly confuses money with real factors. He "takes the wages fund theory as running to the effect that the money-funds of the employers constitute the real capital used for paying wages."[407] He then "goes on to ask whether the employer may not spend more or less for a dozen different purposes,- on his family, on buildings, on repairs."[408] In short, by confusing real and money factors, social and private capital, it is maintained, Thornton arrives at the conclusion that the wages fund is not of a fixed size but "indefinite."[409]

It has to be admitted that the case that Taussig and others make against Thornton is, again, not very strong. Taussig does not correctly reproduce Thornton's statement quoted at length above, but changes it in a way to fit his argument better. Similarly, Breit refers to the 1869 edition of Thornton's book, but actually and tacitly quotes from the second edition that only appeared in 1870 – after Mill's review. Furthermore, Taussig and Breit present the further development of Thornton's argumentation in a quite optimistic way. The latter's book is mainly a conglomeration of sophisticated rhetoric against the exploitation of the labour class. As far as I can see, it does not contain, at least in the first edition that both authors quote and that Mill reviews, the systematic line of argument they make it look like.

Yet, in his review, and this is the decisive point, Mill apparently forgot that he himself had occasionally given the advice of disregarding the outward mechanism of paying and spending, and attending to the realities of the phenomena.[410] He therefore granted Thornton the point that the wages fund was not a fixed quantity at all. The following quotation shows very well the confusion between real and money terms:

[407] Breit (1967, p. 521), also Taussig (1896, p. 247).
[408] Taussig (1896, p. 247)
[409] Breit (1967, p. 521)
[410] Taussig (1896, p. 248)

> There is no law of nature making it inherently impossible for wages to rise to the point of absorbing not only *the funds which he* [the capitalist] *had intended to devote to carrying on his business*, but the whole of what he allows for his private expenses, beyond the necessaries of life.[411]

To be sure, Mill doesn't say that as an advice, it is merely a theoretical hypothesis. However, he assumes the possibility of paying out in wages what has been intended to be expended on other things necessary to carry on business. But this way, as he himself has shown in his *Principles* before, only *money wages* can be enlarged. Of course, money used to pay for producers' goods could be spent on wages instead. This "implies a state of industry in which tools are discarded [as well as any] stock of partly finished materials."[412] Still, the amount of consumers' goods that could be bought with these increased money wages would not increase at all if this was done. Only if the fund that the capitalists allow for their private expenses was reduced, this would free some consumers' goods for workers. The rest of the money-fund in the hands of the capitalists cannot be said to potentially raise real wages in case it was paid out to workers. Consumption by one group of people can only be increased at the expense of the consumption by other groups. But who is supposed to restrict consumption, and by how much, when capitalists stop their business? And what happens to the workers at the supplier-stages? If nobody pays for intermediate and producers' goods any more, the workers employed in their production can no longer be paid. These remain open questions that can not be answered at all if one thinks that wages are restricted only by the money funds in the hands of the employers. How far Mill was guided by personal feelings while he was writing his review cannot be said. The main point is that he reaches his conclusion by confusing private capital with social capital.

[411] Mill (1967, p. 645, emphasis added)
[412] Wood (1888, p. 67)

10.3 Demand for commodities vs. demand for labour

There exists another line of attack against the wages fund theory that is in no way less important than the last one, and that is also somewhat connected to it. Again it is argued that the wages fund is not of a fixed size but can be increased. The attack has been brought forward at first by Friedrich von Hermann and Lujo Brentano in Germany,[413] later by Francis Longe and others in Britain. Their argument does not confuse real and money terms. What these writers do is to maintain that the size of wages is not determined by a fixed wages fund, but by *consumers' income*, today one would say by consumers' purchasing power.[414]

> We therefore come to the conclusion that everything determining the size of the amount dedicated to the payment of workers is the probability of retrieving the applied sums out of the income of the consumers, or, in other words, that the sum of the paid wages depends on the demand of the consumers and on their income.[415]

A similar statement can be found in Friedrich von Hermann who says that "the true and always anew flowing source for the payment of productive labour is the income of the purchaser who buys its product for his own needs."[416]

As long as these authors only want to remind us that the entrepreneur "only advances the wages of his workers until the product reaches […] the consumer," and that "he then expects compensation in the price of his product,"[417] nothing can be said against this emphasis of the purchasing power of the consumers, and it surely does not contradict the wages fund theory. Concerning individual products this line of reasoning is based on a correct observation. The wages of labourers whose product is demanded

[413] See Spiethoff (1908, pp. 57 f.).
[414] See Sechrest (2006, pp. 32 f.).
[415] Brentano (1871, p. 264)
[416] Hermann (1870, p. 476)
[417] Ibid.

vigorously on the market of course rise. Capitalists will increase their demand for those workers that help to produce goods that are demanded by the consumers. And in this sense it can of course be maintained that it is the demand, or the expected demand, of consumers that causes this rise of wages.[418] But one cannot take this reasoning that only holds true for *particular* wages and simply apply it to wages in general,[419] like Francis Longe does when he maintains that "[t]he demand for commodities […] does determine the quantity of labour employed, and the quantity of wealth spent in the wages of labourers."[420] Mill states the true relationship unequivocally in his fourth fundamental proposition concerning capital:

> What supports and employs productive labour, is the capital expended in setting it to work, and not the demand of purchasers for the produce of the labour when completed. Demand for commodities is not demand for labour. The demand for commodities determines in what particular branch of production the labour and capital shall be employed; it determines the *direction* of the labour; but not the more or less of the labour itself, or of the maintenance or payment of the labour. These depend on the amount of the capital, or other funds directly devoted to the sustenance and remuneration of labour.[421]

It is very interesting to note that, according to Nobel laureate Friedrich von Hayek, only those who understand this relationship can be said to be good economist.[422] And it is exactly this relationship that is denied or not understood by many of those who later on ridiculed the wages fund theory. According to Rothbard, "[i]t is no wonder that modern economists, steeped in the fallacies of Keynes, find the proposition 'puzzling'."[423] As is

[418] See Rothbard ([1962] 2004, pp. 478 f.).
[419] See Taussig (1896, p. 270).
[420] Longe (1866, pp. 45 f.), also Hermann (1970, pp. 477 f.).
[421] Mill (1965, p. 78, emphasis by Mill)
[422] See Huerta de Soto (2009b, p. 258).
[423] Rothbard (2006, p. 285)

well known, Keynes is of the opinion that "in a given situation of technique, resources and factor cost per unit of employment, the amount of employment, both in each individual firm and industry *and in the aggregate*, depends on the amount of proceeds which the entrepreneurs expect to receive from the corresponding output."[424]

To give another prominent example, A.C. Pigou considers Mill's fourth proposition to be "highly paradoxical."[425]

> No doubt, if in buying for consumption a labour-made commodity, I make my payment when the commodity is finished and if in buying labour direct I make it when the labour does its work, the second plan is more advantageous to labour because on the first it has to borrow at interest while the commodity is being made. But, if I pay for the commodity in advance, or if, hiring labour direct, I delay payment for the appropriate length of time, the two plans affect labour in exactly the same way. […] Contrary to Mill's view, a demand for commodities *is* a demand for labour.[426]

Now *this* could be called "highly paradoxical." First, in each case Pigou himself presupposes someone who actually disposes of a fund of consumers' goods. Without somebody being able to pay in advance, or to grant credit, nothing could be produced.[427] Demand for commodities is not a demand for labour at all if nobody, including the workers themselves, is willing to advance the wages or the means of subsistence. In the words of Harry Johnson, "the purchase by any individual of the commodities produced does not determine the demand for labour (although it does determine the types of commodities produced), since *the decision as to whether the*

[424] Keynes (1936, p. 24, emphasis added)
[425] Pigou (1949, pp. 174 f.)
[426] Pigou (1949, pp. 175)
[427] See Reisman (1998, p. 685).

proceeds of sale will be used to re-create the wages fund still rests with the capitalists."[428]

Secondly, Pigou doesn't seem to be aware of the fact that not all output of labour consists in consumers' goods. Very often the output will be comprised of producers' good. Accordingly, wages do not only have to be thrust out until the individual stage of production that the worker is part of is completed, but until the final product is sold to the consumer.[429] This might take several years. So "to borrow at interest while the commodity is being made" might be a quite impossible task for a worker, not only somewhat less "advantageous."

The consequence of this line of reasoning, together with the confusion of money and real terms treated in section 10.2, can be seen as early as 1875 in the *Principles of Economical Philosophy* by Henry D. Macleod:

> Thus we see that the true "Wages Fund" is not the actual amount of specie in the manufacturers' pocket, but the price which the consumers pay for the complete product. And how is this to be obtained before it is actually received? By means of Banking Credits. This is the precise use and function of Banks which issue notes. It is to issue notes to form this "Wages Fund" in anticipation of the prices paid by the consumers. And thus we see the gigantic importance of a solid banking system to the labouring classes. It multiplies the "wages fund" a hundred fold, and provides continuous employment for them, so long as there is a prospect of a demand for their products."[430]

Disregarding the wisdom handed down from the days of classical economics, MacLeod, by taking the money funds as the wages fund and regarding consumers' demand as the source of this fund, finds a wonderful receipt creating Cockaigne on earth. For him,

[428] Johnson (1949, pp. 532 f., emphasis added), see also Bresciani-Turroni (1936, p. 8) and already Mill (1965, p. 339).
[429] See Reisman (1998, p. 685).
[430] MacLeod (1875, pp. 126 f.)

money and credit make it possible to *anticipate* the results of production before they actually accrue.[431]

10.4 Discounted Marginal Productivity

In part I it was shown that, in acting, the actor demonstrates that he values the consumers' goods he wants to obtain more than the consumers' goods he gives up in order to get the former. This relationship is reflected in the costs of the means that one has to employ in action. In so far as one has to sacrifice a consumers' good in order to obtain the means, it is between this consumers' good and the attained one that a value spread exists.

This result will help us to get along with the powerful attack lanced against the wages fund theory by the marginal productivity theorists. The early versions of this theory are all accompanied by a critique of the wages fund theory.[432] The theorists in question turn against the wages fund theory because they think it contradicts the laws they have found concerning the valuation of the goods of the higher orders. As in the foregoing sections, we confine ourselves to the question of wages (and rents). It will be easy to extend the reasoning later on to the prices of other higher order goods. For now, we only care about the workers and landlords as only their services have to be financed from the social point of view. The marginal productivity theory claims that, in equilibrium or the static state,[433] workers are paid according to the value of their product, and not according to any accumulated fund. In the words of John Bates Clark,

[431] See Guglielmi (1945, p. 121).
[432] The case for George and Clark should be made by the quotes presented in this work. For Stuart Wood see Wood (1889, p. 465).
[433] See the preface of Clark ([1908] 2008).

> [a] laborer's income may seem to come to him as a payment from another man; but in essence it is still the response that nature makes to his own labor - it is his own virtual product.[434]

In another publication he says that "we know that wages come not out of capital, but out of products."[435] Henry George gives us another concise statement of this opinion:

> Production is always the mother of wages. Without production, wages would not and could not be. It is from the produce of labour, not from the advances of capital, that wages come.[436]

It is not necessary to go into the details of the marginal productivity theory here. It is enough to recall that it states that wages are paid according to their *marginal* utility or product. To quote Walter Block's formulation, in the view of the profession of economists "wages will come to equal the value of the marginal product of labor."[437] What is of interest for our topic is the fact that this theory seems – and is supposed by its authors – to be at odds with the wages fund theory. When labourers receive in wages what they produce there is no need to advance the wages out of a fund of whatever kind. The workers produce their wages themselves.

It should be noted that the argument of the marginal productivity theory is closely connected to the argument dealt with in the last section. There it was the purchasing power of the consumers that allegedly determined wages. Here it is the value of the product of the workers that determines them. It might easily be possible to unite both strings of argument by saying that the value of the product stems from

[434] Ibid. (p. 42)
[435] Clark (1890, pp. 43 f.)
[436] George (1911, p. 43)
[437] Block (1990, p. 200), see already Clark ([1908] 2008, pp. 80, 60, 85; 1889, p. 49).

consumers' demand. Anyway, the essence of both arguments is that no accumulated fund of any sort is needed.

Now, if the marginal productivity argument was presented without further fortification, it could easily be refuted. Of course the workers produce something that is valued by someone already today. This is indicated by the fact that they are paid. But it doesn't follow from this that they are producing their own wages. For it is well possible that many of them are producing things that are not apt for consumption.[438] Someone planting a tree may perform a very important task and some capitalists may be ready to pay him high wages. However, he does not produce anything that could be consumed today.[439] In other words, he does not produce anything that could be used to pay his (real) wages. To deny this point means to argue that men could, as William Sumner expresses it, "eat their intentions, wear their hopes, and be warmed by their promises."[440] Elisabeth van Dorp puts it in a nutshell in saying that "the product does not in the main exist at the moment when wages are paid."[441] Indeed, someone else must be there who possesses consumable commodities and who hands them over to our planter as wages in return for his work. In the words of Eucken, only the "authority to dispose of consumers' goods enables the entrepreneur to appear as demander on the market for production factors and to purchase productive labour and land services that take time to mature to consumers' goods, but whose owners demand command over consumers' goods immediately."[442] Thus, wages are determined by the "constant stream of commodities that come into the market at any moment; therefore not by the labourer's future product."[443]

[438] See Wicksell (1934, p. 190).
[439] See Rothbard ([1962] 2004, p. 505).
[440] Sumner (1882, p. 255)
[441] Dorp (1937, pp. 3 f.)
[442] Eucken (1954, p. 125), see also Rothbard ([1962] 2004, p. 505).
[443] Dorp (1937, p. 5)

Now, there is an exception to this rule. Some workers produce consumers' goods. Especially when we think of services it might well be argued that, in those cases, the workers' wages do come from their own product. The result of their work exists in consumable form, and if they wanted to, they could consume it themselves. Nobody has to advance anything. They produce consumers' goods and are paid with consumers' goods. "They are paid directly by consumption,"[444] as Rothbard expresses this thought. Yet, today most workers do not produce consumers' goods but are employed at intermediate stages of production.[445] And concerning these it is fair to say that they are not paid out of their product and cannot be so.

To be precise, however, the marginal productivity theory does not claim that the workers are paid with their own product. They are paid according to its *value* or, more exact, its *discounted value*.[446] It is surely this marginal value product, not the commodity per se, that is meant by the term marginal product.[447]

What is wrong with the marginal value product theory is that it automatically assigns a present value to things that will only ripen to consumers' goods in the future. It lacks any recourse to demand and supply analysis. According to the already quoted statement by Irving Fisher, in order to get the "present worth of an article," what we supposedly need is "(1) some idea of the value of the future benefits which that article will yield, and (2) some idea of the rate of interest by which these future values may be translated into present values by discounting."[448] What follows from this statement for the size of wages is that we only need to know the value of the future product, for example the future demand by consumers, and an idea of the rate of interest, and we get the present value of the product by mere discounting. And as, consequently, something

[444] Rothbard ([1962] 2004, p. 479)
[445] See Skousen (2007, pp. 164 ff.).
[446] See Block (1990, pp. 200 ff.) for the difference between the two.
[447] See Machlup (1936, p. 258).
[448] Both quotes from Fisher (1930, p. 15).

exists today that has present value, it is no problem to pay workers today, although their concrete product only ripens in the future. They can, apparently, be paid from the produce of their labour. A very striking example of this reasoning can be found in MacLeod:

> *Every future Profit has a Present Value* – and that Present Value may be brought into the Wages Fund, and made Capital of, exactly in the same way as the accumulation of the past.[449]

Again, the social and the private notion of capital are confounded. Everything that has "present value" is supposed to be homogeneous, that is, a part of private capital, and therefore apt to pay wages. However, future profits embodied in present goods of higher order do not obtain their "value" automatically by mere imputation. They only obtain a *price* when somebody sacrifices a consumers' good in order to obtain them.[450] So it is with labour. Only if employers are willing to hand over consumers' goods, or means to buy consumers' goods,[451] to the workers, the latter receive a positive amount of wages.[452] And, of course, the employers only do this if they value the product of the workers they pay higher than the consumption they abstain from.

We do not agree with the verdict whereupon the fact that "the marginal product of labor […] determines wages […] refutes the wages-fund doctrine."[453] *If anything, the latter provides a causal explanation of how the price of the factor services emerges in the first place and why a price differential remains.* Both phenomena can be explained with the help of our notion of the economic aspects of human action in

[449] MacLeod (1886, p. 138, emphasis by MacLeod)
[450] See the exposition in the first part.
[451] We have not yet introduced money. This will be done in the next part.
[452] See Eucken (1954, p. 106).
[453] Jonsson (1997, p. 580)

combination with the wages fund theory. So we go one step further than Rothbard who considers both theories as incompatible. He says

> that in the dispute between the classical theory that wages are paid out of capital and the theory of Henry George, J.B. Clark, and others that wages are paid out of the annual product consumed, the former theory is correct in the overwhelming majority of cases, and that this majority becomes more preponderant the greater the stock of capital in the society.[454]

In the final state of rest, competition will have erased all profits and the remaining value difference between the two will correspond to originary interest. The labourers will correspondingly be paid according to their discounted marginal value product. This relationship is illustrated in figure 6.

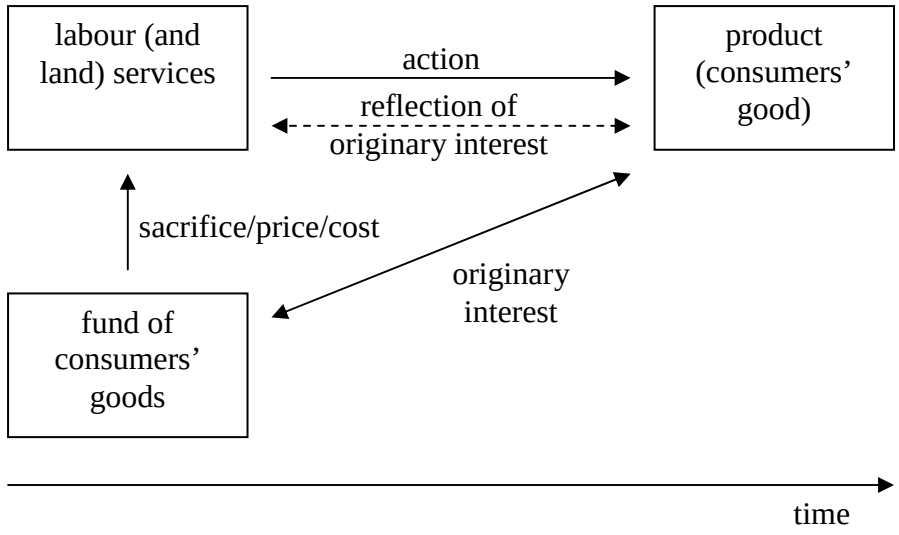

Figure 6: Price relationship between labour services and their product in the final state of rest

[454] Rothbard ([1962] 2004, p. 479)

In the final state of rest, the marginal value product manifests itself in the prices of the factors that are considered to produce the future consumers' goods, but in the end, this fact only reflects the relationship between the consumers' goods sacrificed today and the consumers' goods expected as return in the future. So by no means does the marginal productivity theory debunk the wages fund theory. It merely describes the price relationships causally explained by the wages fund theory that result in the final state of rest. The two theories are not irreconcilable, as also some wages fund apologists maintain,[455] but assort well with each other.

10.5 The synchronisation of production

John Clark is well aware of the problem that there is a period of time between the moment when work is done, and the moment when the product becomes available. Apparently, he accepts the argument brought forward in the last section according to which the product of most kinds of production is not apt to support workers. Yet, he accepts it only for capital *goods*. For these he admits that "[t]hey separate labor, in time, from the enjoyment that will be afforded when the particular thing with which labor is now engaged shall be fully ripe for use."[456] So even in his opinion the "starting of an entirely new series of capital-goods"[457] does call for abstinence on the part of the capitalists, i.e., the latter have to advance wages to the workers. However, Clark distinguishes *capital* from *capital goods*. For him, *capital* is "a sum of productive wealth, invested in material things [= the capital goods] which are perpetually shifting – which come and go continually – although the fund abides."[458] In other words, he endorses the private concept of capital. And while "capital goods interpose periods

[455] See Dorp (1931, p. 301).
[456] Clark ([1908] 2008, p. 100)
[457] Ibid.
[458] Ibid. (p. 94). See already Clark (1888, pp. 10 ff.) and Clark (1907, pp. 354 f.).

between labor and the culling of its fruits,"[459] capital as a fund of productive wealth "synchronizes labor and its fruits."[460] The fruits – the output – and the labour – the input – are seen to be *simultaneous*.[461] It follows from his argument that, in synchronised production, no advances to workers and therefore no wages fund is necessary in order to finance production. Thus, he is of the opinion that the notion of private capital heals problems that seem to exist when one looks upon the production process from the social point of view. Private capital in the form of a productive fund synchronises production and therefore makes the wages fund redundant. That is why the argument has to be considered more closely.

In order not to misrepresent Clark's position I quote him at some length. First of all, he tries to illustrate his argument with his famous example of a water reservoir.[462]

> In the reservoir […] every particle of water, separately considered, has its period of production. It enters the pond at one end and slowly flows through it; and here its function is to help in keeping the surface of the pond at a certain level – to keep what is called the head of water, that drives the wheel, at a certain height. In the end, it passes quickly through the wheel pit, and in an instant its productive function is over. That particular water has thus reached the end of the period. On the other hand, a water power, as such, has no periods, unless we make them arbitrarily by shutting the gates and stopping the mill at a certain part of the day. If the power be used to drive dynamos that work day and night, there are not even such arbitrary periods traceable in its action: the power is perpetual. […]
>
> From the moment when a gallon of water flows into the upper end of a reservoir, the wheel at the lower end is made to move by the overflow that there takes place. It is wholly unnecessary for the owner of the mill to watch the inflow, note the time of it and calculate how long it will be before the

[459] Clark (1894, p. 66)
[460] Clark ([1908] 2008, p. 100)
[461] See Garrison (1990, p. 142).
[462] This example can already be found in Clark (1894, p. 66).

> particular gallon of water that then flows in will reach the wheel pit. He is, in fact, relieved from the necessity of doing any waiting whatever, in connection with the career of that particular bit of capital goods.[463]

Every new gallon of water does its "work of moving the wheel by *causing* an overflow" instantly, so that the length of production "is a matter of entire indifference."[464] There is nothing to oppose against this illustration as far as it goes. Let us see whether the same reasoning can be applied to actual production.

> Let us […] plant a forest of such slow-growing trees that it will take fifty years to bring one of them to the point of maturity, at which it will be ready for cutting. Let us arrange the trees in rows, and plant one row each year. During this part of the process there is waiting to be done; though this does not mean that we must wait for any return whatever. The young and growing trees have *value*; and this repays us for our labor, and does it promptly, as the labor proceeds. This return, however, comes in a form in which we cannot use it for consumption. We must at least wait for our firewood. After fifty years the cutting begins; and now all waiting is over. We may cut every year a row from the ripe end of the forest and plant a row at the opposite end.[465] From this point on, the long period involved in the ripening of the trees loses its importance. The setting out of a new row of trees is now a very different thing from the planting of the original row fifty years ago; for in a sense *the present planting yields firewood at once*. […]
>
> The time that will be required for the ripening of the particular trees that we are now setting out has lost its importance, since we are not dependent on those particular trees. If the forest will yield us any other mature trees in equal number, it is enough; and it will do this so long as we keep unimpaired our permanent capital, in the shape of the forest; and the planting of the new row

[463] Clark ([1908] 2008, pp. 101 f.)
[464] Both quotes from Clark ([1908] 2008, p. 103, emphasis added).
[465] It would be better to plant the row exactly where the other was cut. But this is a minor remark.

> and the ripening of the older ones, as they take place each year, have the effect of thus preserving the forest.[466]

Now, in the former example it is clear that every additional gallon of water *causes* an overflow of water at the other end of the reservoir and therefore instantly drives the wheel. There is indeed no further waiting involved and the additional water *immediately* produces its effect. In the second example, however, there is *no causal nexus* between the planting of the new row of trees and the cutting of the old one. Clark indicates such a nexus when he maintains that "the present planting *yields* firewood *at once*," or, elsewhere, that "another [tree] is at once made available *in consequence* of the planting of the one [tree]."[467] Yet, the new planting does not in any way *cause* another row to be ready for harvest. The latter could be cut even if no new row was planted at all. To be precise, we could cut a row of trees every year for fifty years without adding any new row to the forest.[468] Of course this would, as Clark seems to fear, diminish capital and the latter would cease to be a permanent fund. However, this scenario shows that the trees that can be cut every year are not just the fruit of present labour planting the new trees. They are the fruit of labour carried out fifty years ago plus labour that is necessary to cut them today.[469] To these two kinds of labour the present planting is not connected at all. And the wages of the present planters, therefore, cannot be paid out of their product because it will only be ripe fifty years hence. They must be advanced to them.

What Clark has in mind is the fact that by being denominated in value or money terms, all goods become homogeneous. The newly planted trees have a money value

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[466] Ibid. (pp. 103 f., emphasis by Clark). In Clark (1894, p. 67) he uses another example from the shoe industry where, according to him, "[t]he furnishing of new raw hide […] creates, as it were, an immediate overflow of finished shoes at the end of the series."
[467] Clark (1895, p. 267, emphasis added), see also Garrison (1990, pp. 142 f.).
[468] See Böhm-Bawerk (1907, p. 270, n. 1).
[469] See ibid. (pp. 268 f.).

and are part of private capital in the same way as the old trees. In consequence, both old and new trees qualify to serve as a basis to pay wages. That this viewpoint overlooks the heterogeneity of capital that becomes apparent in the social view and therefore ignores the necessity of an already existing subsistence fund does not have to be repeated here.

Clark's argument would be more acceptable if he merely maintained that the cutting of the row of trees "is made *practicable* by to-day's planting."[470] Because in cutting and planting a row of trees at a time one does not diminish private capital – the fund of wealth represented by the forest – and this might be a very practicable way of acting. This point becomes clearer in some of Clark's statements. In the debate with Böhm-Bawerk he states:

> The full conduit of water is an essential condition of an *uninterrupted* outflow; and a perpetual supply of wool is in like manner an essential condition of *perpetual* supply of coats.[471]

In the case of the conduit he employs the term "uninterrupted", in the case of the coats he uses "perpetual." Both statements are correct. However, as Clark himself seems to feel, the *uninterrupted* supply of wool is not an essential condition of an *uninterrupted* supply of coats. Otherwise he would use this term or a synonym, and not the term "perpetual" which decidedly has a different meaning. Even without new additions to the supply of wool we could produce coats for some time. As long as the old supply of wool is not exhausted, the new one is not an essential condition for the production of the latter. Output can indeed be produced for some time without a coincident input. It might be *impracticable*, but it is nonetheless possible.

[470] Clark (1895, p. 297, emphasis added)
[471] Clark (1907, p. 367, emphasis added)

10.6 Concluding remarks on the subsistence fund theory

The ideas expounded in this part were based on the social notion of capital. The discussion concentrated on the technical or material aspect of the financial market. Therefore, it abstracted from actually acting individuals and substituted social classes like capitalists, labourers, and landlords in order to illustrate the material processes. Chapter 9 has demonstrated the usefulness of the subsistence fund theory in the illustration of the real side of the financial market. Interpersonal finance is only necessary when the owners of the originary factors of production have to be supported. This can be accomplished by means of the subsistence fund which contains consumers' goods. In short, if one removes the veil of money from the financial market, what surfaces are flows of consumers' goods. In the following part III it will be shown how these processes are actually brought about in the market economy. The main question will be how the monetary streams on the financial market are connected to the subsistence fund. Hence, the purchasing power of money will gain centre stage. The case will be made that, in human action, the purchasing power of money only relates to consumers' goods.

We are allowed to expect useful results from such an analysis. As was demonstrated in chapter 10, the subsistence fund theory was abandoned for reasons that do not bear scrutiny. The main arguments uttered against it do not hit the mark. John Stuart Mill renounced it because he confused money funds with the wages fund. He had himself provided the refutation of this argument in his *Principles*. The Keynesian argument that wages depend on consumer spending assumes an automatic nexus between spending on consumers' goods and spending on labourers which does not exist. And the marginal productivity theory does not contradict the subsistence fund theory at all. Rather the latter is a component in the explanation of the former.

Part III: Private capital and the financial market

11. The role of money

11.1 Money and the market economy

The last part was dedicated to the social notion of capital. At the centre of the analysis stood the subsistence fund theory. As was shown, this theory explains pretty well the technical or material processes that underlie the "financing" of production. It stresses the importance of persons and their needs. The subsistence of the people taking part in production is the one thing that *has* to be financed. From the social point of view, the existence of everything else does not call for any special funding. Correspondingly, the function of the financial market can only be to allocate the means of subsistence to the workers and land owners. The shortcoming of this social notion is to be found in its ignorance of the question as to how these necessary technical processes are actually brought about by acting people. The "capitalists" who supposedly allocate the means of subsistence do not orientate their actions by any kind of wages or subsistence fund. The subsistence fund theory is not based on their psychic cost and revenue deliberations.[472] The classes invented by the classics are mere placeholders for an in depth analysis of the social organisation of the described processes. They do not help in the explanation of the working of the actually existing financial market. Even granted that, in the end, to finance production always means to provide for the subsistence of the participating persons, the explanation of how this is actually accomplished lacks in the theories based on the social notion of capital. Our market economy is not organised by people who allocate the "subsistence fund" or any other kind of heterogeneous goods, but by entrepreneurs who, in the main, do not pursue such social goals, but try to make money.[473] And also the three classical "classes" basically consist of people who perform their services because they want to earn money. The labourers work for money,

[472] See Liefmann (1923, p. 501).
[473] See Mises (1949, pp. 300 f., 611).

the landlords lease their land for money, and the capitalists invest money in order to make more money. Accordingly, the financial market does not allocate the available "means of subsistence," but money. That is what everybody needs and wants.

In the market economy, money and money prices are central in guiding the actions of people.[474] They constitute the "spiritual bond that holds the economy together."[475] Johann Plenge remarks that, "[w]ithout such a combinational organisation factor, the factors of production do not come together, are old iron, nature that takes its course, and cluttering people. These are the real and tangible processes of our economy without money."[476] The movements of goods and factors do not just cause themselves.[477] This fact is recognised by the private or business notion of capital. It is taken over from accounting practices of enterprises that actually operate on markets in real life. Whereas the social concept of capital is of help when it comes to look at the technical or material side of the question, the private notion serves to illuminate the way how the plans and operations of the economic agents are actually connected to each other and coordinated on the financial market. It goes to the heart of the working of the monetised market economy. The task of this part is, first, to present the private concept of capital, and second, to conciliate the private with the social view that has been the topic of part II. Special emphasis will be laid on the role of money and its purchasing power. It will be shown that it can serve as a link between the two capital concepts and the respective visions of the rationale of the financial market.

In order to simplify matters, we assume, following the example of George Reisman, the context of a constant quantity of money throughout the whole third

[474] See Hayek (1948 , pp. 85 ff.).
[475] Linhardt (1971, p. 225)
[476] Plenge (1926, p. 121)
[477] See Linhardt (1971, p. 226).

part.[478] Alterations in the quantity of money via credit expansion will only be introduced in part IV.

11.2 The business sphere and the consumption sphere

In the whole analysis it is essential to separate two kinds of behaviour. They do not relate to two different kinds of people, but to different spheres of action. On the one hand, it must be clear that, in the end, any medium of exchange is only a *technical means* to obtain ends, and not an end in itself.[479] "The sole use of money is to be exchanged for goods, and if it had no price and therefore no exchange-value, it could not be exchanged and would no longer be used."[480] People make efforts to get it because of its power to purchase other things that they would like to have. What induces them to acquire and spend money are their personal feelings toward the sacrifice they have to undergo in its acquisition and the revenue they expect from spending it. Following Karl Marx, we could describe this behaviour as commodity–money–commodity,[481] or, closer to our own terminology, as costs–money–revenue. In this regard, money is a mere item in transit.[482] What is of importance are the costs and the revenues – the psychic magnitudes that are felt by the acting persons – not the money itself. This kind of behaviour in respect of money can be associated with consumers. For them, money is not an end in itself but a means to make consumption possible. This attitude towards money we will link to the *consumption sphere*.

Strictly speaking, it should be added that there might also exist people who acquire money not because of its purchasing power, but for its own sake. Some might demand it because they have preferences for the money commodity, and others, like

[478] See Reisman (1998, pp. 536 ff.), also Fillieule (2005, p. 4).
[479] Liefmann (1923, p. 363).
[480] Rothbard ([2004] 1962, p. 765), see also Pigou (1949a, p. 26).
[481] See Marx (1967, Vol. 1, p. 120).
[482] See Liefmann (1923, pp. 317, 489 f.).

Scrooge McDuck, might like to accumulate the money commodity because they enjoy the process of accumulating. The described kinds of action do not fit into our costs–money–revenue context. They are mere costs–revenue actions whereby the money itself brings the psychic revenue about. As there are psychic costs and revenues involved, this kind of action also belongs to the consumption sphere.

Everybody who encounters money in his actions is necessarily part of the consumption sphere.[483] Either he acquires money because he wants to purchase goods that he considers to bring about psychic revenue to him. Or he obtains psychic revenues from holding (or accumulating) money itself. There is no third alternative.

Although everybody is a consumer in the above sense and therefore is a part of the consumption sphere, there is an important area where money does not play the role of a mere item in transit. In business, money is regularly spent for things that are not considered to be psychic revenue from the point of view of the one who purchases them. One only has to think of enterprises paying workers and buying intermediate goods. To the contrary, to make money is the *end* of these actions,[484] and the labour services and intermediate goods are considered to be the technical *means*, the items in transit.[485] Again following Marx, one could describe this behaviour as money–commodity–money,[486] or, more exactly, as monetary costs–commodity–monetary revenue. The term commodity, of course, is not to be understood in a material sense. It comprises services of production factors, claims, and other intangible goods. Thus, the considerations in the following chapters also apply to financial intermediaries that do not produce tangible goods.

In this *business sphere*, the acting persons orientate themselves by money earnings and ignore the satisfaction of needs that are the reason for acquiring money in

[483] See Rothbard ([1962] 2004, p. 262).
[484] See Liefmann (1916, p. 81).
[485] See Budge (1931, p. 221).
[486] Marx (1967, Vol. 1, p. 162), also Wieser ([1909] 1929, p. 197).

the first place.[487] They concentrate on the maximisation of money profits.[488] Of course, one must not forget that behind any kind of business there always stand its owners who want to earn money not because this is their *ultimate* goal, but because they want to use this money for consumption,[489] i.e., because they are also part of the consumption sphere. The business sphere is still a means to an end, not an end in itself.[490] But within the business sphere itself, where money profits are aimed at, "[t]he producer within the economic agent separates himself from the consumer within the same person and cuts his own path."[491] It is this area of business and economic calculation where the private notion of capital stems from.[492]

With the help of these two spheres it is possible to clearly distinguish consumers' goods from producers' goods. *Technically* speaking, only those goods that are at the point of being consumed could be called consumers' goods or goods of the first order. All other goods, even totally prepared ham sandwiches, are only *production goods* – means – that help to bring about future consumption.[493] The separation of the two spheres allows for a classification that rests on economic criteria, not on technical ones. Whether unprepared meat and fishes can *physiologically* be thought of as consumers' goods does not matter any more. The one point that counts is whether the observed action is part of the business sphere or the consumption sphere. In this sense, consumers' goods are goods a person buys not in order to resell them or some of their products against money,[494] but to employ them themselves. Those goods, in other words, that are *removed from the nexus of monetary transactions* are consumers'

[487] See Liefmann (1923, p. 468).
[488] See ibid. (pp. 495, 512), Liefmann (1916, pp. 30 f.).
[489] See Liefmann (1923, p. 364), Mises (1949, p. 62).
[490] See Prion (1935, p. 13).
[491] Rieger (1964, p. 13), also Prion (1935, p. 41).
[492] See Liefmann (1931, p. 9).
[493] See Rothbard ([1962] 2004, pp. 8 f.).
[494] See Reisman (1998, p. 445).

goods.[495] This includes commodities that could, from a technical point of view, be considered to be producers' goods, like tools and hammers.[496] Yet, "economics has no motive to peek through […] the keyhole of private homes and to get to know how the consumer proceeds with his belongings and goods."[497] It is not our task to decide which goods are *technically* apt to serve as consumers' goods or not. The only criterion for *economists* to apply in order to define the consumption sphere is the way humans behave. And if they buy goods that seem to be producers' goods from a technical standpoint without the intention to make profit by reselling them, economics must consider these goods to be consumers' goods as they apparently generate psychic revenue to the purchasers. The preferences of individuals are, so to speak, *data* for the economist.[498]

The business sphere will be the topic of the next three chapters. Although economic calculation and capital accounting are not based on psychic costs and revenues, but on money prices, these institutions can be shown to fit into our framework of the economic aspects of human action. The chapters 15 and 16 will be dedicated to the synthesis between business action that is guided by money prices, and the subsistence fund theory that explains the *technical* aspects that must underlie the monetary processes. The gap between the two can be bridged by means of an analysis of the purchasing power of money. It will be seen that, in the end, the latter solely depends on those actions that take place in the consumption sphere. Chapter 17 deals with the claim theory of money. Some of its proponents come to similar results as I do in my discussion of the purchasing power of money. Their shortcoming must be seen in the fact that they base their analysis on too simplified arguments. The claim theory of money maintains that money *represents* the goods it can buy, in our case, that it

[495] Compare Rothbard ([1962] 2004, p. 375), Lahn (1903, pp. 78, 81), Marx (1967, Vol. 1, p. 119).
[496] See Reisman (1998, p. 444).
[497] Linhardt (1956, p. 200)
[498] Mises (1949, p. 21)

represents consumers' goods. It can be shown that such a direct connection between goods and money does not exist. Following up the main argument of chapter 16, the discussion in the chapters 18 and 19 brings to light that what is traded on the financial market can be argued to be the power to purchase consumers' goods, or, figuratively speaking, the fund of consumers' goods.

12. Action in the business sphere

12.1 Money as common denominator in the pursuit of profit

It is argued by several commentators that the most notable feature of modern capitalism is economic calculation.[499] Modern businessmen are not guided by psychic costs and revenues, but by money prices.[500] This behaviour developed gradually with the spread of market transactions and the use of money. "With the increasing division of labour," says Wilhelm Rieger, "the goods ceased to be demanded for their own sake; people were interested in them in so far as they were demanded for by others."[501]

The end of businessmen in the modern market economy does not consist in a quantity of products,[502] but in the maximisation of money income.[503] The important point is that, as long as they act this way, they are able to replace the *psychic* comparison of revenues and costs with a more objective way of doing this. If money profit is the sole end in the business sphere, any expenses in money can be considered to be *costs*, and all inflow of money can be considered to be *revenues*.[504] With both costs and revenues being expressible in money, it becomes possible to calculate with them because now a unit of account exists.[505] In the words of Robert Liefmann, economic calculation, the calculation in money prices, "is the wonderful institution that allows for a numerical comparison of ends and means [=costs]."[506] Also Ludwig von Mises, in his famous essay on the impossibility of economic calculation under socialism, stresses the importance of economic calculation for the modern world. Most

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[499] See Liefmann (1931, pp. 15 f.), similarly Weber M. (2005, p. 111), Coutre (1927, p. 342) and the references given below.
[500] See Wieser ([1909] 1929, pp. 198, 206).
[501] Rieger (1964, p. 14, tenses matched to the context), also Prion (1935, p. 20).
[502] See Liefmann (1923, p. 107)
[503] See Rieger (1964, p. 44), Wieser ([1909] 1929, p. 197).
[504] See Liefmann (1923, pp. 314, 465 f.), Prion (1935, p. 11).
[505] See Mises (1920, pp. 94 f.), Linhardt (1954b, p. 26), Fillieule (2010, p. 138), Huerta de Soto (2010, p. 29).
[506] Liefmann (1923, p. 302). That means equal costs in Liefmann's terminology can be seen on pp. 277 and 310 f. of the same work and in Liefmann (1926, p. 32). See also Herbener (1996, p. 154), Fillieule (2010, p. 115).

production processes are so complicated that it is impossible to base one's plans "on vague appraisals." Instead, "exact calculations are required in order to form a view on the efficiency of one's actions."[507]

The nature of economic calculation, as it focuses on money prices, hinders it from taking psychic considerations into account.[508] The institution of double-entry bookkeeping demonstrates this point. Its rationale is to allow for the monitoring of the processes within an enterprise in respect of *money* profits only.

> Thanks to it [double-entry bookkeeping] the entrepreneur is in a position to separate the calculation of each part of his total enterprise in such a way that he can determine the role it plays within his whole enterprise. […] The only directive he gives to a man whom he entrusts with the management of a circumscribed job is *to make as much profit as possible.* An examination of the accounts shows how successful or unsuccessful the managers were in executing this directive.[509]

Although the profit motive must necessarily rule in economic calculation, it does not follow that all other considerations have to be excluded by the businessmen. It is still possible to take other things into account, like beauty, health, honour, or proud.[510] Yet, they can only be part of a *psychic* comparison with money profits.[511] They are not adapted for calculation as no common denominator exists. *Other things being equal*, one could say, every businessman will try to maximise his money profits,[512] and economic calculation must be seen against this backdrop.

It has been proposed that one could also use the labour hour or something else as a common denominator. Others think that without money prices no economic

[507] Both quotes from Mises (1920, p. 93).
[508] See ibid. (pp. 95 f.).
[509] Mises (1949, p. 301 f., emphasis added)
[510] See Mises (1920, p. 96), Fillieule (2010, p. 139).
[511] See Mises (1920, p. 96).
[512] See Rothbard ([1962] 2004, p. 199).

calculation would be possible at all.[513] Which opinion is correct does not concern us here. The important thing is that there has to be a denominator in order to allow for calculation, and that, in business, it is money that fulfils this function.

That money is able to assume the role of "common denominator of economic calculation"[514] is made possible because, as long as a business is connected to the market at both ends, both input and output can be and are expressed in money terms.[515] Purchasing and selling, in other words, connect the capitalistic enterprise to the market[516] and allow for economic calculation with a unit of account. Wilhelm Rieger expresses this thought in the following way:

> Seen from this angle, the thousands of goods that are the object of exchange only exist in the form of prices. They can calculatorily be broken up into discretionary pieces, they become calculatory commodities. They are bereft of all individuality and now all kinds of arithmetic can be applied to them.[517]

This point has already been hinted at by classical economists. According to Hülsmann, Frédéric Bastiat's value theory rests upon his contention that needs and satisfactions are *incommensurable* and that, therefore, human services can only be evaluated in so far as they are exchanged.[518] Hanns Linhardt puts it in a nutshell:

> By being expressed in money the good looses its subjectivity and enters the colons of goods deploying in the market that are made uniform by being expressed in money terms.[519]

[513] See Mises (1940, p. 198).
[514] Mises (1949, p. 215)
[515] See Liefmann (1923, p. 553).
[516] See Linhardt (1954, p. 259).
[517] Rieger (1964, p. 8)
[518] See Hülsmann (2001, p. 62).
[519] Linhardt (1953, p. 49)

From this point of view, the whole business process can indeed be reduced to money–commodity–money, or according to Rieger who obviously follows Marx,[520] as "a transformation of money to re-money [von Geld zu Wieder-Geld]."[521]

12.2 Economic calculation and the logic of human action

It is important to note that the profit motive and the orientation given by money prices makes the behaviour of businessmen conform to our notion of human action. For business men, the size of the spread between money input and money output is not a mere *technical* question. In the business sphere it is their *goal* to attain such a spread. As was already indicated, money outflow and inflow constitute the *costs* and *revenues* of business action. This is the way the logic of action manifests itself in the business sphere. "The task which acting man wants to achieve by economic calculation is to establish *the outcome of acting* by contrasting input and output."[522]

Insofar as businessmen judge their projects according to money prices, they *calculate* their actions in a way that conforms to our costs-revenue analysis in the first part of this work. This point is recognised by some economists and business economists who thoroughly deal with economic calculation. To quote Linhardt:

> Economic calculation presupposes the logical background of human action, it has to be able to rely on the causal law of human action. Economic calculation cannot yield anything that is not contained in human actions already.[523]

An entrepreneur who compares cash flows is not doing something that is categorically different from an isolated man comparing his sacrifice with the good he

[520] See Plenge (1964, p. 133).
[521] Rieger (1964, p. 155)
[522] Mises (1949, p. 211, emphasis added), also Linhardt (1953, p. 46).
[523] Linhardt (1953, p. 49)

aims at. The typical entrepreneur who orientates himself by his money earnings translates "the incentives of human action, that are felicitously labelled 'value difference' or 'profit motive' [to the] business process."[524] Also Ludwig von Mises fully acknowledges that economic calculation does not in any way stand in opposition to the logic of action which is the cornerstone of his whole edifice. He even writes that praxeology and economics could only be built *after* "man had succeeded in creating methods of thinking that made it possible to calculate his actions."[525] This might also explain why the terms "costs," "revenue," and "profit" that we have applied to the psychic deliberations of acting persons seem more apt to describe the processes that take place in the business sphere. They originate from there and have only later been transferred to the consumption sphere of psychic costs and revenues.

What remains to be done is to transfer the terms "saving," "investment," and "finance" that have been defined in the first part to the business sphere. This can be done in a few sentences because these terms do not change their meaning at all. The only thing that happens is that, in the business sphere, they refer to money and not to psychic magnitudes, as what counts there are the monetary costs and the monetary revenues. Monetary costs, of course, can only be incurred in so far as money is available, that is, if one has money. Money that one is in possession of and that can be used to incur costs we call *savings*. They are necessary to *finance* the whole business action. Without them, the costs could not be borne. Money is *invested* if it is used to buy things that will lead to a backflow of money only in the future.

[524] Ibid. (p. 47)
[525] Mises (1949, p. 232)

13. Capital accounting

13.1 Economic calculation and capital accounting

As was seen in the last section, it is possible to integrate the behaviour of businessmen into our notion of the economic aspects of human action. They only differ in that they do not orientate themselves by psychic magnitudes, but by money prices. The costs, the revenues, and the profits of their actions all consist in money. In this chapter this point is fleshed out. Economic calculation does not take place *in vacuo*. Institutions have emerged that help to accomplish economic calculation. One of them is *capital accounting*. As was already mentioned, the notion of private capital rests on this institution, and the term "capital" itself stems from the practice of accounting. In the following, we will take a look at the institution of capital accounting itself. The notion of business capital will become clear in the discussion and will be defined only afterwards.

It can be shown that capital accounting, as long as it follows the *Generally Accepted Accounting Principles*, conforms to the logic of the economic aspects of human action as well. That is, the business capital concept does not have to hypostatise like the social capital concept that constructs an imaginary class of capitalists who fulfil the function of allocating the means of subsistence. Instead, it rests on concrete institutions and the actions of real economic agents – the businessmen who strive for money profit.

Let us, first, consider any random business venture that only takes a short time, say, one year. In the income statement at the end of the whole project one sees, on the one hand, the money costs as expenditure, and, on the other hand, the money inflow from sales. By comparing both an entrepreneur can see whether the venture was a success, i.e., whether he has made profit. So far as this example goes it resembles an isolated man who compares the result of his action with the sacrifice undergone. The

cases only differ in the fact that the businessman compares *money* figures whereas the isolated man compares *psychic* costs and revenues.

Things become more complicated if the business venture takes a longer time. Of course, our entrepreneur could still say that he only wants to create an income statement after the whole business has been liquidated. Then, again, he would put on this statement both all his money costs and all his earnings and could easily see whether he has achieved a profit or not.[526] What he then gets is his "total profit."[527] Rieger emphatically highlights that only such a *Totalrechnung* would allow for a scientifically correct income statement.[528] Although it is a little harder to imagine, this case also is not too far away from our isolated man who might as well tackle projects that take him several years to accomplish.

It should also be noticed that no balance sheet is needed as long as the entrepreneur only cares about the final result of his venture.[529] At the time of the *Totalrechnung*, no assets or liabilities are left that could be stated in the balance sheet. As long as the entrepreneur is satisfied with this kind of calculation, the question of how to treat entries in the balance sheet does not appear. Value fluctuations of assets and liabilities do not concern him. He only compares total expenses to total money receipts after liquidation. As there is no balance sheet, also no "capital" of the enterprise appears. The entrepreneur does not care about the size of the "capital" of the enterprise at any point of time when he waits until the final settlement. Therefore, he does not calculate it.

This *Totalrechnung*, however, will not do for most entrepreneurs. For many business projects the end is not foreseen in any way and might very well lie years, decades, or even generations in the future. In the meantime, the entrepreneur will be

[526] See Schmalenbach (1988, pp. 64 f.).
[527] Schmalenbach (1919, p. 11)
[528] See Rieger (1964, p. 207 f.).
[529] See Schmalenbach (1988, p. 64 f.).

interested to know how things are going in order to head his company into the right direction.[530] Furthermore, he will not be satisfied to wait for his income until his venture will have been liquidated. He wants to consume already today, and that is why he will want to know how much he "is free to consume without impairing the future capacity to produce."[531] The same is true when he has to pay dividends to stockholders.

That is why he will prepare income statements even before the venture is wound up. In order to get comparable results these statements are usually prepared periodically.[532] Generally one will want to have an income statement once every year.[533] Our entrepreneur now gets into trouble when he merely contrasts the money outflows and inflows that occurred during the preceding year. Money inflow and outflow do not correspond to each other in the particular periods.[534] The money paid for a durable machine does not correspond to the inflow of money of the same year, but, if the machine is going to produce for a longer time than one year, of several years to come. In order to see whether the purchase of the machine was profitable the entrepreneur must find a way to contrast the expenses made for the machine with the revenue it creates during its lifetime.

This would be no problem if the entrepreneur was content to wait for the day when *Totalrechnung* is possible. As he wants to get information about his income periodically he has to think of a different method. In business this is done by *capital accounting*. At the end of every year, a balance sheet is prepared that is compared to the balance sheet of the foregoing year.[535] If, other things being equal, the money value of the assets has increased, profit has been generated within the company during the time between the preparation of the two balance sheets.

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[530] See ibid. (p. 65), also Schmalenbach (1915, pp. 379 f.), Hax (2003, p. 675).
[531] Mises (1949, p. 212)
[532] See Schmalenbach (1919, pp. 11, 13).
[533] See Liefmann (1923, p. 563).
[534] See Schmalenbach (1915, p. 380).
[535] See Mises (1949, pp. 213 f.), Linhardt (1956, p. 211).

On first sight this procedure does not seem to correspond to the notion of income presented above. There is apparently no connection to the confrontation of costs and earnings that links the business profit to the logic of action. Assets and liabilities might fluctuate in value for a bunch of reasons. For example, if a mark-to-market rule is employed, the value of assets changes according to their market prices. The latter, however, usually are totally independent of any actions on the part of the evaluating company itself. Thus, profit would not be determined according to costs and revenues that occur in business action, but according to some other variables. Profit calculated this way would not fit into our notion of the logic of action.

Yet, we will see that a connection between action and capital accounting can be established. Whether there is such a connection depends on how the balance sheet is created, i.e., how the assets and liabilities are evaluated. It will be seen that the accounting rules – the generally accepted accounting principles that have been established in Europe for centuries – lead to an evaluation of assets and liabilities that makes capital accounting comply to our analysis of human action.

13.2 The Generally Accepted Accounting Principles

13.2.1 Valuation and appraisement

The discussion of economic calculation so far was based mainly on the works of Robert Liefmann, Hanns Linhardt, Ludwig von Mises, and Wilhelm Rieger. As will be demonstrated in chapter 14, some utterances by Liefmann and Linhardt at least indicate how the valuation of assets and liabilities can be brought in accordance with the economic logic of action. However, none of them treats the problem of valuation in a systematic and coherent way. Instead, at some place they all commit the mistake that has been criticised in Irving Fisher. They argue that the value of the producers' goods in the balance sheet somehow falls from heaven, i.e., that it comes into existence by

merely calculating it. According to Rieger, what is done in the valuation of assets in the balance sheet is that the future monetary end of an object is *anticipated and discounted* [eskomptiert] to the accounting date.[536] Linhardt seems to implicitly follow Rieger, and also Liefmann maintains that the appraisement of higher order goods happens according to their anticipated revenues.[537] And Mises says:

> In such statements [balance sheets] it is necessary to enter the *estimated* money equivalent of all assets and liabilities other than cash. These items should be *appraised* according to the prices at which they *could* probably be sold in the *future* or, as is especially the case with equipment for production processes, in reference to the prices to be *expected* in the sale of merchandise manufactured with their aid.[538]

These writers are not aware of the inconsistency of their contention. They accept that *present* profits are calculated by comparing this years' balance sheet with last year's. But in the balance sheet they want the assets to be evaluated according to the appraisement of *future* revenues. To echo William Sumner's statement quoted within the critique of the marginal productivity theory, these authors want businessmen to eat their expectations, wear their hopes, and be warmed by their appraisements.[539]

Now, the valuation of present objects according to future events contradicts the *Generally Accepted Accounting Principles* (GAAP). Mises is explicit on this point. He considers the "old business customs and the provisions of commercial law and of the tax laws," that is, in the main, the GAAP, to have "brought about a *deviation from*

[536] See Rieger (1964, p. 213).
[537] See Liefmann (1922, p. 635).
[538] Mises (1949, p. 214, emphasis added)
[539] Compare Sumner (1882, p. 255).

sound principles of accounting which aim merely at the best attainable degree of correctness."[540]

In the following sections it is argued that the GAAP are not a deviation from sound principles of accounting at all. To the contrary, they bring capital accounting into accord with the logic of action as presented in the first part. The subsequent analysis builds upon the works of German business economists like Ulrich Leffson and Adolf Moxter[541] who write extensively on the GAAP.

13.2.2 The nature of accounting rules

Before we start to analyse the most important accounting principles concerning the valuation of assets and liabilities, it seems necessary to get some idea of their general character. The German trade law (HGB), for instance, several times refers to the "*Grundsätze ordnungsmäßiger Buchführung*," the German expression for GAAP.[542] Legislation in these cases does not specify how accounting should look like, but leaves "many things to the GAAP that are obscure and mysterious to the beginner."[543] So the law refers to a system of principles that is not completely – at least not yet[544] – codified.[545] Concerning the character of the GAAP business economists are diffident. It is generally accepted that GAAP cannot be determined by *induction* from the practice of honourable businessmen.[546] Such an attempt collapses because it is impossible "to distinguish fair and honourable businessmen from their colleagues who do not deserve these attributes."[547] It would be a logical circle if one tried to detect the honourable

[540] Mises (1949, p. 214)
[541] See Leffson (1987), Moxter (2003).
[542] See Lang (1986, p. 222).
[543] Schildbach (2009, p. 84)
[544] See Leffson (1987, p. 7), Hax (1988, p. 187).
[545] See Schildbach (2009, p. 84).
[546] See Moxter (2003, p. 11), Leffson (1987, p. 29).
[547] Schildbach (2009, p. 85), similarly Schmalenbach (1933, p. 232).

business men by means of their fair accounting practice, because this idea presupposes that one already knows what fair accounting is.[548]

In contrast, especially Ulrich Leffson tries to determine GAAP by means of deduction. He therefore starts from "the general propositions concerning the ends of the balance sheet as well as the means that it necessitates"[549] and tries to deduce how capital accounting must look like in order to achieve this task.[550] After this approach has been accepted momentarily by German legislation,[551] it is today looked upon critically. First of all, it might well be possible that not every line of business requires the same accounting principles.[552] Furthermore, according to the prevailing opinion capital accounting serves "conflicting"[553] objectives. It does not only have to inform the entrepreneur about the success of his actions, but also the outside creditors concerning the security of their investments. The accounts have to allow for the determination of the limit of dividend payout. Also legislation wants accounting to accomplish conflicting ends.[554] As a consequence, the basis from which deductions should start is not clearly defined but afflicted with value judgements.[555]

As both induction and deduction have not been able to win through, it appears that today some form of compromise is accepted as a wise solution. The GAAP are left to a political process that supposedly contains both inductive and deductive elements "because the businessmen and their miscellaneous associations as well as the deductively working scientists influence the political process with their views and input."[556]

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[548] See Schildbach (2009, p. 86).
[549] Leffson (1987, p. 30)
[550] See Schildbach (2009, p. 86).
[551] See Moxter (2003, S. 11).
[552] See Laux/Leuz (2009, pp. 828 f.), already Schmalenbach (1933, p. 230).
[553] Moxter (2003, p. 11; 2000, pp. 2147 f.).
[554] See Mises (1949, p. 214).
[555] See Schildbach (2009, p. 86).
[556] Ibid.

That no clear scientific approach can be found in the area of accounting principles might, referring to Friedrich Hayek, be attributed to the inherent complexity of the subject.

> If man is not to do more harm than good in his efforts to improve the social order, he will have to learn that in […] fields where essential complexity of an organized kind prevails, he cannot acquire the full knowledge which would make mastery of the events possible.[557]

In the face of the inability of scientists to come to an agreement about the nature of the GAAP, it has a lot to commend to regard the principles of accounting as a Mengerian institution. According to Carl Menger,

> we can observe in numerous social institutions a strikingly apparent functionality with respect to the whole. But with closer consideration they still do not prove to be the result of an *intention aimed at this purpose,* i.e., the result of an agreement of members of society or of positive legislation. They […] present themselves to us rather as "natural" products (in a certain sense), as *unintended results of historical development*.[558]

With this in mind it would be idle to think of how and if at all one is able to determine GAAP. One would have to look at them as an institution that is *the result of human action but not of human design*.[559] Friedrich Hayek regularly stresses the importance of rules of conduct the rationale of which is not known to the people who are guided by them. [560] Following him, Huerta de Soto writes:

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[557] Hayek (1975, p. 442)
[558] Menger (1985, p. 130, emphasis by Menger)
[559] See Hayek (1967c, p. 96).
[560] See Hayek (1978, p. 7), also Hayek (1967b, pp. 43 ff.).

> [N]o human mind or organized group of human minds possesses the intellectual capacity necessary to take in or understand the enormous volume of practical information which has come into play in the gradual formation, consolidation and later development of these institutions.[561]

And the same author actually applies this idea to the accounting rules. According to him, the principles that have evolved over the years reflect "centuries of accounting experience and business management,"[562] which, as we might add with Schmalenbach, "contain more than professorial deduction."[563] Social institutions that have evolved this way, i.e., "inherited institutions,"[564] do not require the individuals who follow its established rules to know exactly why these rules actually exist and what experience they are based on.[565] It is therefore not necessary, as Dieter Schneider demands, to investigate whether the accountants and the theorists of accountancy always were aware of the function of accounting and its rules.[566] The point is not whether the rules are understood and adapted consciously. It is only important that the respective rules have prevailed in the competition with other sets of rules.

> Like scientific theories, they [such rules] are preserved by proving themselves useful, but, in contrast to scientific theories, by a proof which no one needs to know, because the proof manifests itself in the resilience and progressive expansion of the order of society which it makes possible.[567]

[561] Huerta de Soto (2010, p. 28)
[562] Huerta de Soto (2009, p. XXIV)
[563] Schmalenbach (1919, p. 260)
[564] Hayek (1978, p. 10)
[565] See Hayek (1978, p. 10). For accounting practices, this opinion shines through in Schmalenbach (1910, p. 382).
[566] See Schneider D. (2001, pp. 899 f. and p. 94, n. 71).
[567] Hayek (1978, p. 10)

According to Hayek, competition is "a procedure for discovering facts which, if the procedure did not exist, would remain unknown or at least would not be used."[568] One can assume that those who have, for whatever reason, stuck to reasonable accounting principles were better protected against the turbulences of economic life than those who followed others. Thus, Pascal Salin stresses the role of competition as a discovery process precisely for the "hard to define norms of financial accounting. […] By a process of trial and error diverse accounting rules are put to the test and, little by little, those are selected that seem to provide the best information."[569]

Neither the inductive nor the deductive method will ever come to a reasonable conclusion as long as the object of investigation is a complex phenomenon in the sense Friedrich Hayek used the term.[570] Capital accounting and its principles seem to be such a complex phenomenon, as their role has not yet been definitely clarified.

Therefore, in what follows I do not try to deduce GAAP on my own. I confine myself to demonstrating that *the accounting rules that have evolved within the course of time are totally compatible with the economic aspects of human action developed in part I.* The analysis will bring to light that, despite the splitting of the entrepreneur's functions[571] that are in conflict with each other, the traditional accounting rules seem to be best adapted to provide information relevant to the company as a whole. That is, they provide information concerning the money costs, the money revenues, and the profits of the business.

This brushing aside of other functions and interests does not have to be problematical as, even without outsiders, a business "calls for continuous and periodical accounting out of its own interest and need. Business calculation not only conforms to,

[568] Hayek (2002, p. 9)
[569] Salin (2010, p. 58)
[570] See Hayek (1967a, pp. 22 ff.).
[571] See Leffson/Baetge (1971, p. 203).

but stems from the *nature* of the capitalistic business."[572] Even if it might be in the interest of creditors to pursue a very cautious determination of profits, or in the interest of shareholders and the tax authorities to do the opposite, the highest performance will only be achievable if capital accounting is adapted to evaluate best the actions of the enterprise. "[T]he businessman has to know whether his business yields a return and how much; this is what his decision whether to continue business in the same way as before or to change its course depends on."[573] Accounting rules that provide the best information concerning the performance of the business as a whole also help best to avoid the wasting of resources,[574] or better, from the point of view of the business, the wasting of money.

Furthermore, it seems very probable that in competition those accounting principles will have prevailed that allow for an exact as possible evaluation of business performance. Other businesses who cared too much for outsiders or insiders of any sort and adapted their accounting principles accordingly will, in the long run, have lost ground *vis-à-vis* the former. Therefore, it appears that a good calculation of profits is also in the interest of the creditors[575] and, in the end, of the whole society.[576]

13.2.3 The realisation principle

The following analysis concentrates on the assets and their evaluations. In order to simplify matters, liabilities are not dealt with.

One of the most important of the traditional accounting rules is the realisation principle. It says that assets have to be recorded on the balance sheet with historical cost until they or the products they help to produce have been sold against money or at

[572] Linhardt (1953, p. 47, emphasis added)
[573] Schmalenbach (1988, p. 26)
[574] Schmalenbach (1919, p. 5)
[575] Schmalenbach (1988, p. 52)
[576] See Schildbach (1975, p. 38).

least a claim on money.[577] Up to the point when assets lead to money inflow the balance sheet contains the costs of these assets, i.e., the money paid for them.[578] And if the inflow surpasses the once incurred outflow, income has been created. Of course this easy story is made more complicated by the fact that many assets render services and therefore lead to money inflows for more than one period. Therefore, the money inflows of each period cannot be contrasted to the whole historical cost of these assets, but only to a part of it. How the historical expenses can best be allocated to the separate periods is a question of the adequate depreciation rules – "[d]epreciation is allocation of expenses"[579] – and does not concern us here. For us it is important to see that the realisation principle allows for a determination of income that corresponds, in the end, to the way an isolated man evaluates his action. The latter contrasts consumption sacrifice and consumption attained. Capital accounting, if effected according to the realisation principle, contrasts historical cost and present money inflow. That the assets in a balance sheet should be evaluated according to historical costs is one of the oldest accounting rules. It is supposed to prevent entrepreneurs to see profits where none have been realised.[580]

13.2.4 Lower-of-cost-or-market

Another important principle is the lower-of-cost-or-market rule. This principle erodes[581] the realisation principle in so far as the latter wants the historical costs to be incorporated into the balance sheet, whereas the former wants the historical costs only as long as the market does not show a lower price. Thus, ultimately, the realisation

[577] See Leffson (1987, pp. 252 ff), Moxter (2003, p. 41).
[578] See Moxter (1982, p. 156).
[579] Linhardt (1952, p. 130)
[580] See Leffson (1987, p. 254).
[581] See Jüttner (1993, p. 103), similarly Moxter (1991, p. 171), Wüstemann (1995, p. 1036).

principle is part of the lower-of-cost-or-market principle. In treating them separately I follow the common parlance.

'Lower-of-cost-or-market' does not hold for all kinds of assets (or liabilities) and it stipulates different market prices (buying market, selling market) for the assets it is applied to. We do not want to go into the details here. Generally, the lowest of the following three – historical cost, replacement cost, or output price – has to be activated.[582]

According to the prevailing opinion, the rationale of lower-of-cost-or-market and the apparent deviation from the realisation principle is an issue of prudence.[583] In earlier times, the difference in the treatment of profits and losses was even called "prudence principle."[584] Businessmen should be *careful* when they deduce profit in order not to *endanger* the further development of their business. Therefore, it is said, lower-of-cost-or-market demands that losses, in contrast to profits, are accounted for even before they are "realised."[585] Instead, they should be *anticipated*.[586] So it seems as if there were different rules for profits and losses.

The important point is that, as far as this principle goes, it appears to contradict our view of capital accounting and its connection to the logic of action. By writing off assets to their market value one deviates from the rule of contrasting costs to revenues. Instead, the loss of book value affects the calculation of income before the corresponding cash-inflow occurs.

[582] See Moxter (2003, p. 59).
[583] See Moxter (1991, p. 167), Moxter (2003, p. 34), Schildbach (2009, pp. 18 f.).
[584] See Helpenstein (1933, p. 831), Koch (1957, p. 5).
[585] Leffson (1987, p. 353) and Koch (1957, p. 5) use the term "realisation" in this sense.
[586] See Moxter (1991, p. 171), Lang (1986, pp. 245 f.), Hax (2003, p. 678).

13.2.5 The object of realisation

We think that there is more to the lower-of-cost-or-market principle than pure caution and that it can also be reconciled with our cost-revenue framework. It has already been tried at some occasions to surpass the apparent antinomy between the treatment of losses and the treatment of profits. In order to do so it has to be shown that the treatment of loss by the lower-of-cost-or-market rule is not a mere *anticipation* because of prudence. Instead, one has to prove that the "future losses" in question are not future events at all, but rather present and therefore realised expenses.

Already in the 1930's Franz Helpenstein tackled the antinomy. He writes "that the principle that forbids to show 'unrealised profits' and the principle that obliges to show 'unrealised losses' do neither contain subjective behaviour nor do they contradict each other. Instead, the term 'unrealised loss' is inaccurately chosen. One should say: 'realised (internal) expense.'"[587] According to him, loss does not emerge when the exchange act is accomplished, but when the "internal value" of an asset has decreased.[588] Yet, Helpenstein does not explain why there is loss when the internal value of an asset decreases, but no profit when the internal value increases.[589]

Nonetheless his discussion contains a correct approach to the topic. Before profit and loss can be shown, both revenue and expense have to "be realised, i.e., have to gain substantiality."[590] As the profit contribution is determined by means of the comparison of revenues and expenses, the question as to the realisation has to begin with these two entities. One primarily has to ask when the revenues and expenses emerge. Only with the given values for revenues and expenses the profit contribution can be calculated and considered to be realised. The realisation and the lower-of-cost-or-market principle therefore do not, for the main part, regulate the emergence of

[587] Helpenstein (1933, p. 832, emphasis erased)
[588] See ibid. (pp. 832 f.).
[589] See Leffson (1987, p. 353).
[590] Helpenstein (1933, p. 831)

profits and losses, but the arising and imputation of revenues and expenses. Profits and losses only arise as a corollary.

In the following sections, it will be examined how the prevailing opinion supposes the principles of realisation and lower-of-cost-or-market to regulate the emergence and imputation of revenues and expenses. Afterwards, it is shown that it is possible to interpret the two principles in a way that they do not contradict each other.

13.2.6 The temporal imputation of the revenues

The realisation principle demands that revenues are shown only when the enterprise has already delivered its services and has received at least a claim on money. In short, it links the emergence of revenues to the sales act.[591] It does not allow for an anticipation of revenues. In this, lower-of-cost-or-market corresponds to the realisation principle. It also does not require the anticipation of revenues. What it wants to be anticipated is an imminent *excess* of expenses over revenues.[592] The revenues themselves are only taken into account when they are realised by the exchange act. So in the treatment of revenues the lower-of-cost-or-market principle follows the realisation principle.

13.2.7 The temporal imputation of the expenses

The realisation of expenses is regulated by the realisation principle in so far as it designs "that the expenses that can be imputed to the realised revenues have to be deducted as expense in the corresponding accounting year. […] It links not only the revenue to the exchange act (or its equivalence), but also certain expenses."[593] Also for the expenses the realisation principle sets the moment of the sale as the decisive one.

[591] See Moxter (2003, p. 41).
[592] See Euler (1991, p. 191), Moxter (1991, p. 167).
[593] Moxter (2003, pp. 46 f.)

The focus hereby is on revenues. The realisation of the expenses does not follow distinct rules, but ties on the realisation of those revenues they can be imputed to.[594] Expenses are activated only in so far as they can be imputed – at least indirectly – to future revenues.[595] Within the framework of the realisation principle there is otherwise no reason to activate them, as they cannot be matched to any future realisation date. Malinvestments or similar expenses that do not bring future revenues about must therefore be counted as expenses already today and consequently be realised.[596]

In contrast to the realisation principle, lower-of-cost-or-market in its traditional formulation does not link the emergence of expenses to the moment of the exchange act, but requires to *anticipate* imminent losses, that is, excesses of expenses over revenues.[597] It demands not to wait for the time when revenues and expenses will be "realised" by the exchange act and the expenses will supposedly surpass the revenues. Instead, the expenses are to be anticipated previously to their "realisation" by the amount that they will presumably surpass the revenues. So when it comes to the treatment of expenses, the lower-of-cost-or-market principle seems to deviate from the realisation principle. The latter sets the exchange act as the crucial event, the former in certain cases allows for the anticipation of expenses.

13.2.8 The reason for the difference in the treatment of expenses and revenues

We have seen that, even in the traditional understanding of the terms, the realisation principle and lower-of-cost-or-market only differ in one point – the imputation of expenses. In the following lines I will show that the extraordinary write-downs prescribed by lower-of-cost-or-market have nothing to do with the anticipation of future events. If this was the case, it is true, the only rationale for this principle

[594] See Euler (1991, pp. 194 f.), Hax (2003, p. 678).
[595] See Löwenfeld (1879, p. 439).
[596] See Hax (2003, p. 678).
[597] See Jüttner (1993, p. 103).

would be prudence. However, it can be shown that the lower-of-cost-or-market rule imputes the expenses exactly to the point of time when they actually arise and when they ultimately have to be considered as realised. If, according to lower-of-cost-or-market, today expenses are posted in the income statement because either replacement costs or the selling price of the final product have fallen below historical costs, what has happened is not an anticipation of expected losses. Instead, this way *definite malinvestments are written off.*

This claim shall first be examined for the case of fallen selling prices. In this area, the lower-of-cost-or-market rule is generally accepted as being reasonable,[598] but for other reasons than the ones that are presented here, namely as the expression of the prudence principle. We confine ourselves to the easiest case, in particular to goods for which both a market or exchange price exists and historical costs can unambiguously be determined. One might think of financial products or similar goods.

Now, if the selling price of the final product should happen to fall below historical costs, *the enterprise definitely knows that it has made a mistake in its investment decisions*. If it had refrained from buying at historical costs and waited until today, it could currently buy the finished product at a lower price than it has already spent for its procurement or production. Based on present information the enterprise knows that it has committed a malinvestment. It would not act in the same way again. This is true even in the event that the selling price should happen to increase again afterwards. The excess of the historical costs over the present selling price has been spent for nothing. This excess definitely is a malinvestment. There is no reason to activate malinvestments or, if they have already been activated, not to write them off. This holds independently of the future development. The future is not anticipated at all. Instead, *past mistakes* are posted.

[598] See Schneider D. (1994, pp. 214 ff.).

One can argue analogously for the case when replacement costs have decreased. In so far as the goods concerned exist in the same technical form within the enterprise as they are traded on the replacement market, again a definite malinvestment is on hand. Too much has been spent for goods that could be procured cheaper today. The differential amount has been invested for nothing. Again, the argument still holds even if the future selling prices surpass the historical costs and, therefore, in the end, a profit will come about. Malinvestment remains malinvestment, even though the whole project might still turn out to be profitable.

Against the writing down to replacement costs it is argued that this is not a case of anticipation of expected losses, which would be acceptable, but merely the report of opportunity costs[599] or foregone profits[600] that would have no place in the balance sheet and that would contradict the lower-of-cost-or-market rule. Yet, if one is to classify the writing down to the lower replacement costs as foregone profit, then one also has to call all malinvestments by this name and correspondingly must activate them. Who loses 1000 $ on the way to a business appointment would not be allowed to write them off as it would still be possible that the whole bargain proves to be profitable at some future date. Admittedly, the result could be better by 1000 $, but the differential amount is only a case of foregone profit, not of loss.

To speak of foregone profits seems to be reasonable only when *foregone revenues* appear, i.e., when a decision has been made and, in retrospect, a different one proves oneself to be better in that it would have led to higher revenues. Indeed it seems questionable to write off these foregone revenues. Apart from the practical problem that this might bring about writing downs to negative values, foregone revenues are purely fictional numbers. They bear no reference to the enterprise. It is different with expenses that have been spent for nothing. They have come true for the enterprise. It does not

[599] See Weindel (2008, pp. 90 f.).
[600] See Moxter (2003, p. 215), Schneider D. (1994, pp. 214 ff.).

seem to be reasonable to activate them or not to write them off as it is already known that they have been spent *for nothing*.

By now it can be explained why the lower-of-cost-or-market principle is congenial to our cost-revenue framework. As we have seen, entrepreneurs fit into this framework as long as they incur monetary costs in order to obtain monetary revenues. Any actions, however, where costs are incurred for nothing, that is, not in order to obtain revenues, do not fit into it. This kind of actions appears in hindsight when malinvestments and partial malinvestments are detected. To continue to document these malinvestments in capital accounting would make out of the latter an institution that is not concerned with the difference between costs and revenues in business action any more. It would also show costs that cannot be imputed to any future revenue. It is exactly the task of the lower-of-cost-or-market principle to separate out these kinds of actions and their costs from capital accounting.

14. Private capital and interest

14.1 Capital as the calculatory form of costs

The realisation principle and the lower-of-cost-or-market principle concern the way the assets (and liabilities) are valued in the balance sheet. According to them, all assets have to be valued at either historical cost or, if it should be lower, at market value. In capital accounting that follows established accounting principles the money invested is contrasted to the money flowing back because of sales on the market. Thus, the institutionalisation of the whole money–commodity–money process in capital accounting conforms to our point whereupon revenues necessarily are expected to surpass costs. In the words of Willi Prion, "[c]apital accounting is nothing more than the technical means that improves the comparison between sacrifice and utility in economic activity."[601]

We now finally come to the notion of private capital itself. It stems from the money–commodity–money framework. The latter is, according to Marx, the "general formula of capital."[602] In being invested in a way that is supposed to bring about a profit, money becomes capital.[603] In capital accounting, the balance sheet keeps track of the money – or capital – that has been invested this way in the different kinds of assets. It reminds the book keeper of historical costs, or, if the market value should be lower, of that amount of historical costs that has not yet been lost. Paradoxically, especially those authors that we have shown to disregard the generally accepted accounting principles hint at this point. In the words of Robert Liefmann, for businessmen, "[c]apital is the appraisal of the cost goods in money as a means to determine a money yield or, as we could also say, it is the *money calculation form of the cost goods* as a

[601] Prion (1935, p. 17)
[602] Marx (1967, Vol. 1, p. 170)
[603] See ibid (p. 165), Liefmann (1931, p. 16).

means to determine a money yield."[604] It serves as the basis for capital accounting and corresponds to the amount of those expenses that have not yet become revenues.[605] It is, as also Mises says, the "complex of goods destined for acquisition […] evaluated in money terms."[606] It must be remembered, however, that this point only holds so far as the assets are valued according to *historical costs*. We have seen in section 13.2.1 that the just quoted authors do not, or at least not always, have these costs in mind. Rather they think of the present value of future revenues. Yet, so long as the traditional accounting rules are adhered to, what these authors say about capital in general fits well into our analysis of the economic aspects of human action.

So according to the private view, capital is only an operand,[607] the "calculation value of things."[608] The point that capital is cost has been raised by several authors conversant with accounting and endorsing the private concept of capital.[609] Says also Linhardt: "Costs are capital input in order to produce revenues."[610]

As, in this view, capital is a numerical expression of costs, it is maintained by its champions that the term capital does not make sense outside the context of economic calculation. "There is no capital without or outside of accounting."[611] And indeed, expressing it in money terms is the only way to regard it as a homogeneous concept, i.e., to find one aspect that is common to everything that is called capital. That is why Ludwig von Mises rejects every attempt to employ the term capital outside the business accounts.

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[604] Liefmann (1923, p. 561, emphasis added; also 1931, p. 11), very similarly Weber M. (2005, p. 64).
[605] See Prion (1935, p. 17).
[606] Mises (1949, p. 261)
[607] Linhardt (1952, p. 127)
[608] Linhardt (1954b, p. 101), also Schumpeter (1931, p. 196).
[609] See also Norris (1944, p. 382), Linhardt (1954b, p. 31).
[610] Linhardt (1968, p. 378)
[611] Linhardt (1952, p. 125), also Plenge (1964, p. 130, 138).

> The concept of capital cannot be separated from the context of monetary calculation and from the social structure of a market economy in which alone monetary calculation is possible.[612]

Here we see the commonly acknowledged difference between the social and the business notion of capital. For the former, only those goods that technically help to produce consumers' goods are capital. For the latter, all goods that a business purchases in order to earn profit generate costs and are therefore capital,[613] including "the empty dwelling house, the idle premises, the apparently superfluous cash and deposits,"[614] etc.

In the above analysis we have not distinguished between equity capital and debt capital. Originally, the term capital only referred to equity capital. Capital accounting was the calculation of the businessman as the creditor of his own business.[615] Later on, however, especially with the advent of corporations, it became useless to single out the proprietors of a company. Also, from the point of view of a corporation, in the end its whole funds consist of liabilities, either toward its owners or towards its creditors. In this sense, the difference between equity and dept capital is only of a legal nature.[616]

14.2 The monetary rate of interest

So far we have seen that if one isolates the business sphere and concentrates on business actions, the latter can be put into the framework that was constructed in the first part. That everyone in the business sphere is striving for an excess of monetary revenues over monetary costs – or for a yield on his capital – is nothing more than a corollary of what has been said about action in general, namely that it implies an

[612] Mises (1949, p. 262). See also Linhardt (1953, p. 40), Plenge (1964, p. 146), and Cochran (2004, pp. 20 f.).
[613] See Prion (1935, p. 33).
[614] Linhardt (1954, pp. 260 f.), see also Linhardt (1956, p. 208) and already Menger (1888, p. 152).
[615] See Polak (1926, p. 69).
[616] See ibid., Coutre (1927, p. 344).

expected excess of psychic revenues over psychic costs.[617] This latter characteristic of human action, we have seen, lies behind what has been called originary interest. Now, as far as the psychic phenomenon of originary interest is concerned, it does not manifest itself in an observable way. As laid down by Hülsmann, "[o]riginary interest is not a manifestation of human action in the world of physical things, but a structural feature of human action itself."[618] We know that there must be a value-spread between costs and revenues, but it cannot be demonstrated empirically, as psychic magnitudes defy measurement. In the business sphere matters stand differently. There, costs and revenues are

> physically homogeneous to the point that one can calculate a quantitative difference between the two, that is, between monetary proceeds from selling a product and monetary expenditure for the corresponding factors of production.[619]

In addition, as money is a non-perishable good, we know for sure that the expected price-spread between costs and revenues must be positive. If money was perishable it would be totally in line with originary interest to invest an amount of money today in order to receive a smaller amount of it in the future. After all, money would possibly have perished if one had kept it. However, as it can be held in cash balances without physical deterioration, it seems "absurd"[620] to invest it without the intention to make monetary profit or, in Marxian terminology, a "surplus value."[621]

Furthermore, following our discussion on human action in general, the monetary profit that is expected from any investment must increase with the time spread between

[617] The same idea is expressed by Hülsmann (2002, p. 93) in terms of means and ends.
[618] Hülsmann (2002, p. 97)
[619] Ibid. (p. 93, similarly on p. 96)
[620] Marx (1967, Vol. 1, p. 162)
[621] Ibid. (p. 165)

the incurrence of costs and the attainment of revenues. If there are two investment options with no difference in risk which both promise to return 110 monetary units to an investment of 100, other things being equal of course that option is preferred which takes a shorter time. A longer time-spread between costs and revenues is only accepted if the expected monetary reward is augmented enough.

Now, the business sphere not only makes visible the spread between monetary costs and revenues. It also makes the plans of businessman homogeneous in that they are all striving for monetary profits. So if some entrepreneurs make high money profits in a special kind of business, other market participants will lower them "by entering the same business, thus bidding up the prices of the required factors of production, and bidding down the prices of the product."[622] Entrepreneurial competition will tend do erase the differences that exist in the monetary profit rate in different lines of business.[623] Competition will thereby tend to adjust the profit rate to the length of the investment. A doubling of this length will bring about a doubling of the rate such that the rate *per period of time* tends to become equal. In the words of Rothbard, if this rate should happen to be five percent *per year*, "[a] production process or investment covering a period of two years will, in equilibrium, then earn 10 percent, the equivalent of 5 percent *per year*."[624]

The rate of profit *per period of time* that remains despite the tendency of competition to eliminate profits is called the *market rate of interest*. We know from our analysis that the price spreads that correspond to this rate "do not come into being by accident." Rather, they are the "premeditated result of entrepreneurial action."[625] Businessmen only act in so far as they expect the monetary revenues to be higher than

[622] Hülsmann (2002, p. 98)
[623] See Mises (1949, p. 533), Pigou (1949a, p. 36), Lachmann (1973, p. 28), Fillieule (2005, p. 5).
[624] Rothbard ([1962] 2004, p. 372. emphasis by Rothbard)
[625] Both quotes from Hülsmann (2002, p. 93).

the costs.[626] This difference "cannot be arbitraged away."[627] Thus, there will always be a positive market rate of interest in terms of money.[628]

The height of this market rate of interest is determined by the actions of those who invest money. The more they invest, the higher will be the prices of those goods they invest in, i.e., the originary factors of production and production goods, and the lower will be the prices of the goods that constitute the final output as their supply will increase. Thus, the more people invest, the lower will be the spread between money outflow and money inflow in the money–commodity–money actions in the business sphere. It is true, entrepreneurs have different minimal spreads between costs and revenues that they are willing to accept. But these differences can be smoothed out.[629] Those who would accept a smaller rate of profit than the one prevailing on the market will gladly accept the latter. Those who demand a higher one will cease investing.

[626] See Hülsmann (2002, p. 98).
[627] Ibid. (p. 93)
[628] Ibid. (p. 99)
[629] Ibid.

15. The purchasing power of money as determined in the consumption sphere

15.1 The necessity of the consumption sphere for the business sphere

Until now the business sphere has been analysed in isolation. Money costs, money revenues, and money profits constitute the be-all and end-all of this sphere. What still needs to be done is to connect these money terms to the psychic considerations of the consumption sphere. If money should happen to be available without the incurrence of psychic costs, or if it could not purchase anything that provides psychic revenues, the whole business sphere would not make sense. Why should anyone economise money in either of these circumstances? The profit motive would disappear and economic calculation would be good for nothing if the business sphere merely stood on its own feet.

The connection to the consumption sphere is *not* provided by the private notion of capital. It explains how businessmen calculate in money and how they organise the market economy in monetary terms this way. But it forgets about the consumer. As was already explained, for consumers money is only an item in transit. They are interested in a surplus of their psychic revenues over their psychic costs. In order to bring the consumption and the business sphere together, we must first take a look at the relationship between money and the consumer. What will be said in this regard rests, in the main, on the writings of Ludwig von Mises and his followers. My contribution consists in bringing the analysis in line with the economic aspects of human action as propounded in part I. Later on, in chapter 16, we will see how the purchasing power of money serves as a link between the consumption and the business sphere.

15.2 The regression theorem

As will be argued in detail in chapter 17, it is not correct to regard money as a *claim* on goods of whatever kind. Instead, both contract partners have to assent to any purchase agreement; nobody has a claim on the agreement of the other one. The final price depends on the eagerness of the seller to obtain money, and the purchaser to obtain the good. It is determined by supply and demand, and so is the 'price' of money, as the latter is nothing else than the inverse of the goods prices,[630] that is, "the quantity of goods and services that must be given up to acquire a unit of money."[631]

Of course, money is only demanded for in so far as it can be used to purchase goods. In other words, it must already have a price, or exchange value. Where does this exchange value come from? The demand for money cannot be the reason for it, as money is only demanded if it already has value. Ludwig von Mises solved this problem of circularity in 1912.[632] According to his *regression theorem*, money must have originated historically from a commodity that had had exchange value even before it was demanded for as a medium of exchange.[633] When a commodity has evolved as general medium of exchange, the demand to hold it in cash balances increases the demand for it and therefore its exchange value. It is even possible, starting from here, that the "demand for the money-good, as motivated by the other uses, disappears" without money losing its value.[634] Once there is a demand for the commodity as a medium of exchange, no other demand is needed any more to uphold its value above zero.[635]

[630] See Rothbard ([1962] 2004, p. 236).
[631] Friedman/Schwartz (1982, p. 26)
[632] See Mises ([1912] 1953, pp. 108 ff.).
[633] See Belke/Polleit (2009, pp. 9 f.).
[634] Mises (1990, p. 58)
[635] Some traces of this theorem can also be found in Wagner (1909, p. 117).

15.3 Costs, revenues, and money

In the consumption sphere, *personal preferences* towards the goods bought or sold are decisive for the consideration whether to act or not. Money only serves as an item in transit. The subsequent lines are dealing with such actions. They follow the logic of costs–money–revenue, whereas we exclude the business sphere with its actions according to money–commodity–money.

That the psychic revenues of an action are supposed by the actor to surpass his psychic costs has been the main result of our analysis of the economic aspects of human action. This remains true when the action involves indirect exchange. If somebody thinks to obtain his ends better, cheaper, or faster by employing a means of exchange he must expect the revenues of what he is doing to be worth more to him than the costs. Like in the employment of means of production, what counts are the psychic costs, the sacrifices of consumption that the actor must undergo to obtain money in the first place. As was already explained, money in acts of indirect exchange in the consumption sphere is only a *technical* means, similar to production goods.[636] The logic of indirect exchange can be illustrated by a figure that resembles pretty much figure 2 that depicted the logic of action concerning the employment of technical means of production.

[636] Similarly Liefmann (1916, p. 36), Mori (1930, pp. 44 f.).

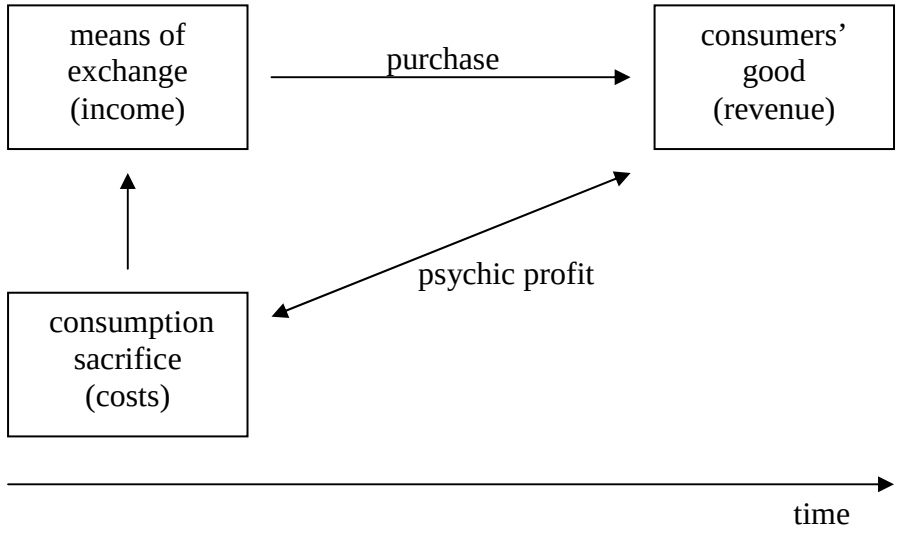

Figure 7: The economic logic of indirect exchange

In the consumption sphere, the exchange ratios between money and goods are determined by the psychic considerations of the transacting persons in the same way as the price of the means is determined in a world without money. It must be added that whereas the good purchased constitutes revenue from the point of view of the buyer, the same good – or its production – constitutes costs for the seller. In every transactions in the consumption sphere *both* contract partners are guided by their personal preferences.

15.4 The law of one price and the unit of account function

In a barter economy only those people compete against each other who both sell *and* buy the same goods respectively. Because of competition, the exchange ratios tend to become equal in all transactions between the same kind of goods. As competition is restricted to those rather rare instances where the same double coincidence of wants is on hand for a larger group of people, "the ratio of exchange is determined only within

broad margins."[637] The tendency towards one price holds true for indirect exchange as well. In indirect exchange, however, the whole process commodity–money–commodity can be subdivided into two separate transactions, commodity against money and money against commodity.[638] There are, in other words, the sale of goods and services to one person, and the purchase of the goods and services one wants to consume from another person. This clears the way for more intense competition. In a system of indirect barter, it is enough to sell *or* buy the same good as somebody else in order to compete with him.[639] In a barter economy, someone who exchanges his prey against fishes does not have to compete with someone else who exchanges his prey against berries. In a monetary economy, all those who sell prey against money compete against each other, no matter what they want to buy with the money later on.

As a consequence of entrepreneurs competing against each other,[640] "there will always be a tendency on the market for *one* money price to be established for each good."[641] The realm of the law of one price is expanded. All goods that are subjectively considered consumers' goods are by tendency approaching one common market exchange ratio against money. So the purchasing power of money can be expressed in an array of exchange ratios against consumers' goods.

As there is this tendency towards one money price for all consumers' goods, money can serve as a *common denominator* for all exchange ratios.[642] When it comes to indirect exchange, people can orientate their cost–revenue deliberations by money prices. Money becomes a price-index.[643] "Instead of a myriad of isolated markets for each good and every other good, each good exchanges for money, and the exchange

[637] Mises (1949, p. 324)
[638] See Budge (1918/19, p. 738).
[639] See Rothbard ([1962] 2004, p. 233).
[640] See Mises (1949, p. 328).
[641] Rothbard ([1962] 2004, p. 235, emphasis changed), also Mises (1949, pp. 324 ff.).
[642] See Mises ([1912] 1953, p. 48).
[643] See ibid.

ratios between every good and every other good can easily be estimated by observing their money prices."[644] As money bears a rather stable relationship to the traded consumers' goods, it serves as a yardstick for the acting people. *Hence, when people in the consumption sphere think or calculate in money, they have its power to purchase consumers' goods in mind.*

It must be added that money is only apt to serve as a common denominator as far as it is actually exchanged against all other goods. Therefore, money has to be left free to adjust its exchange ratios against all other goods according to the ever changing preferences of the trading parties.[645] Those monetary theories that want the unit of account function to be prior to its medium of exchange function must therefore be dismissed.[646]

15.5 Savings and the demand for money to hold

In addition to dynamic effects emanating from the ever-changing consumer preferences concerning goods other than money, there also have to be taken into account effects stemming from the money side. There might be an increase of consumptive demand for the money material. More importantly, as we are living in a world of uncertainty, individuals will feel the need to assure against unforeseen changes. An appropriate way to do so is to store vital goods in order to be less vulnerable to adverse developments. One good that fits very well this function is money because it is the good that can, when necessary, most likely be exchanged against any good in need.[647] Thus the "holding of money at ready command […] enhances the utility of the resources of the consumer."[648] People want money "so as to be in a position to acquire

[644] Rothbard ([1962] 2004, p. 235)
[645] See Mises (1917/18, pp. 198 ff.), Hülsmann (1996, pp. 141 ff.), Rothbard ([1962] 2004, p. 235).
[646] The discussion of these theories must be delayed until chapter 16.
[647] See Greidanus (1950, p. 271), Mises (1949, p. 398).
[648] Greidanus (1950, p. 271)

other things *at the most profitable time, or at the most convenient time*."[649] Usually, economists accept that cash balances are held for this reason.[650]

It must be added here that, according to our exposition of the logic of action, the holding of money – the hoarding – corresponds to what we have called saving. It is "the negative act of not buying consumption goods."[651] People keep money not for a special purpose, but because of the uncertainty of the future. Their cash balances do not have a specified time dimension.[652] If something unexpected happens, they might be spent within a few minutes. But it is also possible that some monetary units are kept under the mattress for years. The holders of cash do not commit themselves in advance to either of these possibilities.

Changing demand for money does not, in principle, pose any problem to the role of money as expounded so far. Other things equal,

> if the demand for money increases […] this additional demand can only be satisfied by bidding down the money prices of nonmoney goods. The purchasing power of money will increase, the real value of individual cash balances will be raised, and at a higher purchasing power per unit money, the demand for and the supply of money will once again be equilibrated.[653]

This process contains nothing that would hinder money from changing its purchasing power in accordance with the psychic considerations of the consumers. Even when prices change everybody who uses money in indirect exchange still considers money to be an item in transit between the costs he has to incur in order to get it and the revenues he can obtain by means of its purchasing power. The only thing that might result in some problems is when people change their behaviour suddenly and by a large degree.

[649] Hutt (1956, p. 206, emphasis by Hutt)
[650] See Patinkin (1965, pp. 14 f.), Salin (1990, pp. 41 f.), and Samuelson (1983, pp. 123 f.).
[651] Hazlitt (1959, p. 91)
[652] See Keynes (1936, p. 210).
[653] Hoppe (2006, p. 203, emphasis erased), also Patinkin (1965, pp. 18 f.).

Usually, the habits of people[654] change only slowly. Prices will therefore also be rather stable in the course of time. If for whatever reason everybody was suddenly eager to triple his cash balances, this would have severe consequences for the economy.[655] The adaptation of prices because of the lower demand for them would be a painful process.

15.6 Money income as an item in transit

The money one receives in return for one's costs during a specified period of time can be called *money income*.[656] Some might argue that this money income is more than a mere technical device or item in transit in indirect exchange. When I buy a consumers' good for money, they could say, then the latter constitutes the costs and the former the revenue. Or when I incur costs in order to get money, then money constitutes the revenue of this action. They might say so because the whole process can be subdivided, as we have seen, into two separate transactions, commodity against money and money against commodity. If each of them was analysed in isolation, money would not be a technical means, but revenue in the first one, and costs in the second one.

This objection can be answered the following way. The two transactions costs–for–money and money–for–revenue, which would have to be analysed in isolation if the objection was correct, do not make sense without each other. As long as money is not a good that the actors value for its own sake, money does not constitute the revenue in any transaction of indirect exchange in the consumption sphere. Schumpeter highlights this point:

[654] See Fisher (1926, pp. 79 ff.).
[655] See Hazlitt (1959, pp. 224 f.).
[656] See Rothbard ([1962] 2004, p. 199).

> For economic analysis, the crucial and definite points are, on the one hand, the productive service, on the other hand the receipt of consumers' goods or, more correctly, the act of consumption: To give an example, not the payment of wages, but the receipt of wages goods by the wage earner complete the cycle which can only be understood and only makes sense taking it all round.[657]

Nobody will incur costs for money without taking its power to deliver goods he is striving for into consideration.[658] In consequence, one "will only accept it when it has purchasing power on consumers' goods markets, or when it can be at any time exchanged for a currency that buys consumers' goods."[659] Money must allow for the purchase of goods that the actor considers to yield him a psychic revenue, i.e., consumers' goods. Otherwise, all the exchanges taking place on the market against money were mere play. In order to obtain the goods one has preferences towards, one would have to look for somebody who is ready to exchange these goods against the goods oneself is in possession of. We would be back in a situation where double coincidence of wants is necessary. If nonetheless money transactions could be observed these would take place just for the fun of it, or, in the words of Adam Smith, because people had a "propensity to truck, barter, and exchange one thing for another."[660] By acquiring money they would accept a good not more liquid than the good they give away. Such a good would never become a general medium of exchange as people will always choose the most marketable good.[661]

So what one is looking for in money is its *purchasing power*, its ability to buy goods that one is in need of. "[M]oney is always held (except perhaps by misers) with a view to its being ultimately passed on to others."[662] Money income itself is only an

[657] Schumpeter (1970, p. 208)
[658] See Keynes ([1930] 1971, p. 47).
[659] Eucken (1954, p. 312)
[660] Smith ([1776] 1869, p. 14)
[661] See Hoppe (2006, pp. 143 f.).
[662] Hutt (1956, p. 213), also Greidanus (1950, p. 271).

item in transit. For the same reason, money cannot be interpreted to be the costs of indirect exchange. For costs to occur, a sacrifice must have arrived. Concerning money, costs only is on hand if the acquisition of money involved the sacrifice of potential consumption. Without such a sacrifice necessary, money would be available costless. Not money constitutes the costs, but the sacrifice that must be undergone in order to get it. Again, a means of exchange only functions as an item of transit between costs and revenues.

15.7 Opportunity costs and money prices

Before we start to examine transactions in the business sphere which are not based on personal preferences towards the goods traded, it might be important to meet an objection that will probably be made against our contentions. It is closely related to the one treated in the last section. At the centre of our treatment of money prices and money income we have put the costs of acquiring money on the one hand, and the revenues that can be got by money on the other. Now, many economists will argue that, when it comes to decide about what to spent the money on, the costs we have been talking about lie already in the past. They are therefore *sunk costs*. They do not concern the actor anymore because they have already occurred no matter what he is going to do with the money. Instead, what counts is the "utility foregone," the "opportunity costs."[663] Moreover, as we have noted, in a monetary economy the simple barter exchanges are separated into two independent exchange acts: commodity against money and money against commodity,[664] or, shortly: "sale and purchase."[665] Each of these must consequently have its own opportunity costs.

[663] See Rothbard ([1962] 2004, p. 266).
[664] See again Budge (1918/19, p. 738).
[665] Mises (1949, p. 324)

The following lines contain the psychic cost and revenue considerations of buyers and sellers of consumers' goods as seen by Rothbard.[666] According to him, the *seller's* revenue is the value rank of the most valuable prospective use of the money units he obtains. His cost is either the value rank of the use of the good that has to be sacrificed or, if higher, the marginal utility of holding the good for anticipated future sale at a higher price. The *buyer's* revenue, on the other side, is the highest-ranked direct use of the additional units of the goods, whereas his cost is the value rank of the use of the units that will have to be sacrificed in making the exchange.[667] The considerations of the buyer are also expressed by Ludwig von Mises:

> If an individual speaks of the costs incurred by the purchase of some goods already acquired or to be incurred by the purchase of goods he plans to acquire, he expresses these costs in term of money. But this amount of money represents in his eyes the degree of satisfaction he could obtain by employing it for the acquisition of other goods.[668]

Now let us see whether Rothbard's separation into two costs–revenues decisions makes sense. The seller's revenue is the "value rank in [the] most valuable *prospective* use […] of the units of money"; the buyer's revenue is the "highest-ranked *direct* use of [these] units."[669] So if we assume someone who combines both transactions, someone who first sells a good on the market against money, and afterwards purchases another good with this money, his total revenue would be composed of both the buyer's and the seller's revenue. It would be, first, in the sale, the value rank of the most valuable prospective use of the money, and, second, in the purchase, the value rank of the direct use of the same units. But it is illegitimate to say that *each* one of these constitutes a revenue and

[666] See Rothbard ([1962] 2004, p. 276).
[667] See ibid. (pp. 262, 264, 276).
[668] Mises (1949, p. 329)
[669] Both quotes from Rothbard ([1962] 2004, p. 276, emphasis added).

that both have to be added up to get the total revenue. Either the revenue is to be seen in the fact that the seller of the good obtains the purchasing power of the money he receives. Then the execution of this purchasing power when he buys something else cannot be added to the first transaction in also bringing him a revenue. That he has received the purchasing power to buy it was his revenue. Or one might say that his revenue stems from the goods that he is buying with the money he has received before. But then the possibility to buy them, the purchasing power of money that he has received before, cannot be added to the purchase itself. Of these two possibilities, only the latter one is acceptable. The purchasing power of money is only a technical characteristic of money. What counts are the goods that can be had for money, and these are the reason why money is demanded for in the first place. Money itself is not the reason why people sell their goods for it. Money does not constitute the revenue. What can be got for money is what people are striving for. *These* goods are the revenues.

Concerning the supposed costs of the acquisition of a good with money we see the confusion between choice and action again. When I already own money, its only use for me consists in its purchasing power. What rests to be done is to *choose* what to use this power for. This choice does not imply any costs. The second best alternative good does not constitute costs for me as I do not own the good and have to give it away. To repeat a point already made, costs only appear when sacrifices have to be undergone. In choice, there is no sacrifice. Instead, the costs of indirect exchange are the costs that accrue in the *acquisition of money*.

After the opportunity costs and the “opportunity revenues” have been shown to be neither a real cost nor a real revenue, what remains are the costs and revenues that we have presented above. The sacrifices that are necessary to obtain the money are the costs, and the goods that can be had for money are the revenues.

15.8 Transactions beyond the market

The consumption sphere contains all actions that can be described as costs–money–revenue. But it must not be forgotten that even in the most developed monetary economy there are still transactions taking place without money mediating them. First of all, even if its domain should be very small, direct barter has not disappeared completely even today. Furthermore, gifts of money, most notably between generations, do appear in the consumption sphere, but do not themselves affect the goods prices and therefore the purchasing power of money. These kinds of transactions happen "beyond the market,"[670] or better, beyond the price system. Of course, it is possible that the new owners of the goods or the money deal differently with it than the original owners. But the consequence would be just the same as when the latter himself changed his behaviour. If the new owners buy different goods, prices will adjust. If they hoard more, prices will decrease.

[670] Linhardt (1956b, p. 9)

16. The role of the purchasing power of money in the business sphere

16.1 The relevance of consumers' goods prices

In his methodological publications, Mises showed that value is a relative, not an absolute concept.[671] The value of a good is not some absolute magnitude, but a good is either worth more or less than some other good. The actions of consumers determine the ordinal value-order of consumers' goods. "The ultimate source of the determination of prices is the value judgments of the consumers."[672] According to Mises himself, this not only is true for the prices of consumers' goods, *but for all kinds of goods*, as "the prices of the goods of higher orders are ultimately determined by the prices of the goods of the first or lowest order, that is, the consumers' goods."[673] Yet, Mises stops short of maintaining a direct and exclusive connection between the value of money and the available consumers' goods. His point is that such a connection would only be justified "if money had no other use than to purchase consumption goods."[674] This, of course, he is not ready to accept.

> Money bears a relationship, not only to consumption goods, but also to production goods; and […] it does not serve only for the exchange of production goods against consumption goods but very much oftener for the exchange of production goods against other production goods.[675]

In ignoring these kinds of transactions, he adds, one "arbitrarily splits up the stock of money and the demand for money in order to institute a comparison that would otherwise be impossible."[676]

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[671] See Mises (1933, pp. 139 f.).
[672] Mises (1949, p. 328)
[673] Ibid. (p. 330)
[674] Mises ([1912] 1953, p. 470)
[675] Ibid. (pp. 470 f.), also Elster (1923, p. 125).
[676] Mises ([1912] 1953, pp. 472)

To sum up Mises's position, money has an almost *infinite array of goods-prices*, and all of these together establish the goods-price of money.[677] The consumers' goods are only one part of this array. As far as it goes, this contention is, of course, correct. Yet, it does not follow from this admittedly true statement that all prices are of the same importance. According to Haberler, one can easily construct subgroups of goods and distinguish "the purchasing power of money concerning […]; a) consumers' goods and services […]; b) originary means of production […]; c) intermediate goods […]; d) all goods; e) all objects that are bought and sold [including securities etc.]."[678] And also Mises himself was quoted above in saying that the prices of consumers' goods ultimately determine the prices of higher-order goods. But although he concedes a prominent position to the prices of consumers' goods he does not think this point through to the end.

The purpose of the following chapter is to show that the purchasing power of money is indeed totally determined by the actions of consumers, that is, in the consumption sphere. The only purchasing power of money that anybody is interested in relates to consumers' goods. *Nobody, including the businessmen and the whole business sphere, cares about the power of money to purchase intermediate and capital goods. Instead, the whole business sphere rests upon the power of money to purchase consumers' goods and therefore to provide psychic revenues.* This is the only purchasing power that counts. "The value of money is, in the end, established in those exchange acts that relate to consumers' goods."[679]

According to Arthur Marget, though propositions of this kind go far back in the history of economics, the case for this theory has not been made "beyond any possible

[677] Rothbard ([1962] 2004, p. 237, emphasis by Rothbard; see also p. 756)
[678] Haberler (1931, pp. 34 f.)
[679] Wieser ([1909] 1929, p. 214). See also Wieser (1927, p. 699) and Budge (1931, pp. 226 f.). For further references see Marget (1938, pp. 485 ff.).

doubt."[680] This task will be undertaken in the following. It will be shown that the exchange relationships between production goods and money does not concern anybody. *The purchasing power to buy production goods is not relevant to human actions.*

16.2 Employment of the means of production

16.2.1 The power to pay wages

In the consumption sphere, everybody has personal preferences towards the costs and the revenues of his actions, and money income only serves as an item in transit. In the business sphere, on the other hand, the entrepreneurs orientate their actions by money prices, and, other things equal, their aim is to maximise their money profits. For them, it is the goods and services they buy in order to make money profits that are items in transit. So far we have analysed the two spheres separately. It is time to find the link between them. For this purpose, we go back into the consumption sphere and insert, step by step, actions that belong to the business sphere. In doing this, *we will see that all actions in the latter totally depend on the potential of the employed money to become income again in the consumption sphere*. In order not to complicate the argumentation, for the time being we ignore the existence of credit. Everybody has to save for himself. Credit and the financial market will be introduced in chapter 19.

Let us start with someone who wants to invest his money and to employ originary factors of production, say, a worker. To be precise, if this worker was not employed in order to produce monetary profits, but, say, as a butler who provides services that constitute psychic revenues, no business action would be at hand. We would still be in the consumption sphere. It makes no difference whether a person is paid for material consumers' good he produces or for his butler services. The actions of

[680] Marget (1938, p. 487)

both the employer and the employee would fit into the costs–money–revenue framework of the consumption sphere. It is different when the employer wants the worker to produce something that can be sold for a profit on the market. In this case he abstains from consumption and invests his money savings. He performs a money–commodity–money action, with the services of the worker being the commodity.

It is important to repeat that the services of the worker are only an item in transit for the employer. That is, the isolated monetary costs of the worker are of no interest to him.[681] As he is aiming at a monetary profit, what is important to him is whether he is able to sell the product of the worker for more money than the worker costs him.[682] He is not interested in the isolated price of the worker's services, but in the *price spread* between monetary costs and monetary revenues.[683] *He does not care about the price of the worker's services because he does not have to trade off his money against these services. He does not have to decide between the two because he is not interested in the services themselves. Instead, he trades off the money he pays to the worker against the expected revenues. In short, the employer does not care about the power of money to purchase the worker, but about its ability to generate profit.*

The second important point is that the employer can only execute his plans in so far as he finds a worker who is ready to accept his money in payment. The worker will only do the job if, for him, the psychic revenue exceeds his psychic costs, i.e., if the purchasing power of his income is worth more to him than the hardship of labour. Thus, whether the employer is able to employ the worker in order to make profits totally depends on the power of money to provide the worker with the goods he wants.[684] If money did not have this power, the whole transaction would be impossible. Never could a worker be employed in the business sphere if it wasn't possible to provide him

[681] See Schumpeter (1917/18, pp. 637 f.).
[682] See Mises (1949, p. 331).
[683] See Schumpeter (1917/18, pp. 637 f.), Engländer (1930, p. 134).
[684] See Strigl (1934b, p. 146).

with the power to purchase consumers' goods. Therefore, the power of money to purchase the service of the worker totally depends on its power to provide the latter with consumers' goods. The latter power is the reason why the worker demands money in the first place. And also the entrepreneur does not demand money because it buys the worker, but because it can be employed in making profits. In this he depends on the fact that the worker accepts the money.

16.2.2 Money wages and the subsistence fund

As long as money has the power to purchase consumers' goods, the invested savings transfer this power to the owners of the factors of production in the higher stages of production,[685] in our case to the worker. The power to purchase consumers' goods that could have been exerted by the investors can now, instead, be executed by the worker.[686] The process is the same as the one highlighted by the subsistence fund theory according to which the originary factors of production are paid out of the subsistence fund. The difference is that, here, they are paid with money. Money that the employer could have spent on consumption.[687] Instead, he has saved it and invested[688] it to pay for the factors. According to Strigl, the saved money – he calls it money capital – is used to "finance production" by "funding" [alimentieren] the factors of production.[689] Therefore, it corresponds to the role played by the subsistence fund in a moneyless society.[690] "The money capital serves the purpose of allocating the means of subsistence actually existing in the economy to those who need them for their support during the length of the roundabout production process."[691]

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[685] See Forstmann (1951, p. 40), also Bendixen (1926, p. 20), Wieser ([1909] 1929, p. 219), Lampe (1926, p. 66), Strigl (1934b, p. 153), Steindl (1935, pp. 11 f.).
[686] See Strigl (1934b, p. 150), also Budge (1933, p. 33).
[687] See Schiff (1933, pp. 55 f., note).
[688] See Dorp (1937, p. 77).
[689] Strigl (1934a, p. 28)
[690] See ibid. (p. 27), Strigl (1934b, pp. 148 f.), also Mahr (1959, p. 232).
[691] Strigl (1934b, p. 146)

It must be stressed that the described investments have two consequences. First of all, the employed worker ceases to produce goods that he can either consume himself or sell on the consumers' goods market. Instead, he sells his service to his employer who, afterwards, sells it to the consumers. To use a happy phrase coined by Böhm-Bawerk, the worker is employed in *roundabout ways of production*. As a rule, the time between his input of labour and the final sale to the consumers will have increased. So while he is working, the amount of consumers' goods coming to the market will decrease. On the other hand, the employer abstains from consuming the amount of money he has invested as long as it takes until he receives the revenues from the product he sells to the consumers. So both the demand for and the supply of consumers' goods have decreased by the investment. No systematic influence on prices can be deduced from the action.

Now, the logic of the foregoing analysis remains valid even if, instead of one worker, hundreds or thousands of them are employed. In each wage payment, saved power to purchase consumers' goods is transferred to them. It is, of course, quite probable that the wage earners will spend their income on quite different goods than the investors would have. But this is no additional problem. It is the same as if the investors themselves had changed their preferences. One further problem could appear when a lot of people who have been hoarding their money for a long time suddenly change their behaviour and invest. But, again, this is no additional difficulty. Nothing else happens than in the case without investments where the habits might also change.

16.2.3 The employment of producers' goods

The analysis becomes more difficult when we introduce businessmen who not only employ workers in order to sell their product, but who also buy intermediate goods in order to convert them and sell the product. In a modern market economy these intermediate transactions are very numerous.[692] For the businessmen, the case does not differ from the last one. They calculate in money prices. Thereby, they are still "eager to profit from *differences in the market prices* of the factors of production and the expected prices of the products,"[693] and this also applies to producers' goods.[694] They are not interested in the isolated prices of the goods they buy in order to bring this profit about. The goods and their prices are only items in transit. Thus, again, the businessmen do not care about the power of money to purchase those goods they employ as input. They are not interested in this input in itself. What they care about is the price spread, the profit.

Now, if they should happen to buy an intermediate good from someone who is no businessman, who does not calculate in money and is not interested in monetary profit, the case resembles the one above where workers were paid directly. The seller of the intermediate good will only accept the money if he is able to derive psychic revenues from it. In other words, he must be able to purchase consumers' goods with his money income. This power to purchase consumers' goods is the reason why he demands and accepts money. His demand makes it possible for the businessmen to employ their money in the said way.

What makes the case more complicated is that the businessmen might also buy the good from someone who himself is a businessman and who is going to employ the money not in order to derive psychic revenues, but in order to invest it in his business

[692] See ibid. (p. 153).
[693] Mises (1949, p. 331, emphasis added)
[694] See Strigl (1935, p. 223).

himself. For this kind of transactions between businessmen it does not seem necessary for money to have the power to purchase consumers' goods. Apparently, neither the buyer nor the seller of the intermediate good care about this power of money. As a businessman in the business sphere, the seller is only interested in the monetary profits that he can make with the money. Therefore it seems that he will be ready to accept the money even if it does not have the power to purchase consumers' goods. The connection to the subsistence fund seems to be clipped.

However, these transactions too *presuppose* that money has the power to purchase consumers' goods. It is true, the one who sells the intermediate good might not plan to spend the whole of his monetary revenues on consumption. But part of it, probably his profit, he might want to consume, and this money must have purchasing power on consumption markets.[695] Another part of it he might use to pay workers who themselves do not invest the money further on. Also this part of his monetary revenues must be able to purchase consumers' goods.[696] Finally, some of the money he might also spend on intermediate goods.[697] And here it seems indeed possible that the seller of this intermediate good is, again, a businessman who does not want to spend all his revenues on consumers' good. He might want to invest it himself. In this case, the story just told is repeated once more. He can buy originary factors of production or intermediate goods. For every even more upstream businessman the same is true.[698] During the process more and more of the money becomes income of the originary factors of production or is taken out by the businessmen and thus enters the consumption sphere.[699] In the end, all the money in the business sphere must be able to

[695] See Strigl (1934b, pp. 147, 154).
[696] See ibid. (p. 147).
[697] See ibid. (p. 154).
[698] See ibid.
[699] See Lahn (1903, pp. 46, note, and 115 f.).

become income of some person partaking in the production process.[700] In other words, it must be able to provide psychic revenues to these persons. They would not accept money in return for their services if it could not do this. Thus, that the businessmen are able to buy intermediate goods in any case rests on the fact that the money they employ this way is accepted by others as income. *And this income, of course, must have the power to purchase consumers' goods. This power of money makes investment in the business sphere possible in the first place. Without it, businessmen could neither buy originary factors of production nor producers' goods, as nobody would accept their money.*

16.2.4 Business money

However, one point must not be forgotten. It is true, *most* of the money that enters the business sphere becomes income and re-enters the consumption sphere again. It must therefore have the power to purchase consumers' goods. But this process of money passing through the business sphere does not happen in an infinitesimal period of time.[701] *Some* amount of money will always stay in the business sphere as businesses need cash in order to execute transactions,[702] and also for them it is "convenient to keep a margin against contingencies."[703] These cash balances are demanded by the businessmen because they increase their chances to make profits. In the words of Tjardus Greidanus, what an entrepreneur is "concerned about is what he gains in his exchange transactions; on this he bases his demand for money."[704] This "stock of money is of service to the tradesman in order to enable him to convert it by exchange

[700] See ibid. (p. 110).
[701] See Wagner V. (1937, p. 449).
[702] See Neisser (1931, pp. 370 ff.).
[703] Keynes ([1930] 1971, p. 31)
[704] Greidanus (1950, p. 266)

into stocks of goods at the most favourable moment."[705] The demand for money in the business sphere will thereby increase dependent on the number of stages that money has to pass until it is paid out as income to originary factors of production.[706]

The special role of the amount of money that permanently stays in the business sphere has been underlined by several authors. They call it "business money,"[707] "business deposits,"[708] or "producers' money."[709] According to Valentin Wagner, it is this business money that the debate between the currency and the banking school in the 19th century was all about. Both schools, he says, agreed in that one has to distinguish between money circulating in the consumption sphere and money circulating in the business sphere. They merely disagreed on the question whether additional bank credit in the form of bank notes only circulated in the business sphere, which was the position of the banking school, or whether it could also enter the consumption sphere and increase the incomes there, which was maintained by the currency school.[710] For us this means that if the banking school was correct and the amount of money circulating in the business sphere did not affect the amount of incomes paid to the originary factors of production, it would not be necessary for this business money to have the power to purchase consumers' goods.[711]

Yet, it must be remembered that the businessmen only need balances in order to be prepared for transactions with other businessmen and with the originary factors of production. And these transactions are not mere play for the mentioned persons, but are conducted by the businessmen in order to make profits, and by the originary factors in order to earn money income. In consequence, in nearly every transaction some of the

[705] Ibid. (p. 260)
[706] See Haberler (1931, pp. 54 f.), Neisser (1931, p. 380), Engländer (1930, p. 134), Wagner V. (1937, pp. 450 ff.).
[707] See Neisser (1931, pp. 369 f.).
[708] See Keynes ([1930] 1971, p. 31).
[709] See Wagner (1909, pp. 157 ff.).
[710] See Wagner V. (1937, pp. 347 f., 445).
[711] See ibid. (pp. 444 f.).

business money will enter the consumption sphere. In order to be accepted in payment, also the business money must therefore have the power to purchase consumers' goods. It does not constitute a closed circular flow, but is connected to the consumption sphere as well.

16.3 The influence of the business sphere on the purchasing power of money

16.3.1 The demand for money by businessmen

Other things being equal, the additional demand for money in the business sphere will have the same consequences as if the consumers' themselves had initially increased their balances: prices will decrease,[712] the reason being that less money is available in the consumption sphere and therefore, as people will want to increase their balances again, demand for goods will go down. Thus, the existence of business money and the habits of the businessmen have an influence on consumers' prices and therefore on the power of money to purchase consumers' goods. This business demand for money, according to Greidanus, "is only cursorily mentioned in some money theories, but […], in connection with the profits to be gained by means of this stock of money, contributes to define the total demand for money."[713] The additional cash balances do not influence prices in a different way than balances held by consumers.

16.3.2 Gross savings and the purchasing power of money

However, it is maintained by several authors, among them Friedrich Hayek, Murray Rothbard, and Jesús Huerta de Soto, that it is not, or not only, the amount of money held in the business sphere that influences the prices, but, somehow, the whole amount of money transactions taking place in the business sphere. To give a fair representation of their point of view, it is necessary to quote them at some length. In

[712] See ibid. (p. 451), Greidanus (1950, pp. 259 f.).
[713] Greidanus (1950, p. 276)

their opinion, the income of the owners of the originary factors of production depends on consumption expenditures, the money

> being paid first for consumers' goods and thence moving upward until, after a varying number of intermediary movements, it is paid out as income to the owners of the factors of production, who in turn use it to buy consumers' goods.[714]

Now, what happens when "consumers save and invest an [additional] amount of money"?[715] According to the above quote, what must happen is that now less income is paid to the owners of the factors of production. And indeed, as Hayek explains by means of his famous triangle for the case that consumer spending is reduced from forty to thirty:

> Its breadth at the bottom stage, which measures the amount of money spent during a period of time on consumers' goods and, at the same time, the amount of money received as income in payment for the use of the factors of production, has permanently decreased from forty to thirty.[716]

A very similar statement in the same context can be found in Huerta de Soto. After an increase of voluntary savings by 25 money units and a corresponding decrease of consumer spending from 100 to 75 money units,

> [t]he *net income* received by the owners of the original means of production (workers and owners of natural resources) and by the capitalists of each stage, according to the net interest rate or differential, amounts to 75 [money units],

[714] Hayek ([1935] 2008, pp. 233 f.)
[715] Ibid. (pp. 237 f.)
[716] Ibid. (p. 238)

> which coincides with the monetary income spent on consumer goods and services.[717]

According to these authors, additional saving and investment diminish both the expenditures on consumers' goods and the income of the original factors of production. "Hence," Huerta de Soto adds, "it is easy to understand why *increases in saving are generally followed by decreases in the prices of final consumer goods*."[718]

Now, these authors do not explain this influence of additional savings on prices by means of the demand for additional *cash balances* by consumers or businessmen like we have done. Instead, in their analysis the additional savings are absorbed in the *transactions* between the intermediate stages in the business sphere.[719] They therefore introduce a concept called "gross saving" or "gross investment." *Gross investment is the amount of money spent on factors of production during a specified period of time* and necessarily equals gross savings.[720] Anytime a businessman buys "natural resources, labor, *and capital goods* from prior stages in the production process,"[721] the corresponding amount of money constitutes gross investment. The latter is financed by gross savings which equals "the total supply of present goods,"[722] that is, money.

In the opinion of these authors, if consumers spend less of their income and save more, this saved money is absorbed by gross savings, i.e., in the money payments between the different production stages. To stay in Huerta de Soto's example where consumer spending was reduced from 100 to 75 money units: As a consequence of this rise in savings, as Huerta de Soto states himself, what happens is that "*gross saving and*

[717] Huerta de Soto (2009, p. 335, emphasis by Huerta de Soto)
[718] Ibid. (p. 329, emphasis added)
[719] See e.g. Hayek ([1935] 2008, pp. 238 ff.).
[720] See Rothbard ([1962] 2004, p. 398).
[721] Huerta de Soto (2009, p. 302, emphasis added)
[722] Ibid.

investment have grown by precisely the 25 [money units] of additional net saving voluntarily carried out."[723]

What is overlooked in this analysis is what has been said about investments above. The saved money can only serve in investments, that is, enter the business sphere, if it can be paid out as income. *The additional savings do not ooze away in the mediation of transactions between the businessmen*. Instead, they will be paid out as income or profit.[724] Rather the opposite of what Hayek and his followers say is true. The additional savings do not decrease the income of the factors of production, but even increase it.[725] What is not spent on consumption by the savers is instead spent on it "by the worker who has been hired with these savings."[726] *Saving shifts income, but does not decrease it*.[727] The business sphere does not absorb the savings but passes it on to the originary factors of production.

The only thing that could happen because of additional savings and that must not be forgotten is that the demand for *cash balances* in the business sphere might rise because of the additional payments that become necessary if the number of stages increases. New companies, even new lines of business might emerge and demand cash reserves in order to operate smoothly. This problem has already been dealt with and does make necessary further analysis.

In addition to the argument presented above, it must be stated that the concept of gross saving is arbitrary. To demonstrate this point, let us consider a random production process. It should be beyond doubt that the process can be organised in very different ways. One extreme possibility would be to have it totally vertically integrated. One large company mines and reaps the raw materials, works them up to intermediate

[723] Ibid. (p. 335, emphasis added)
[724] See Schumpeter (1931, p. 196).
[725] See ibid. (p. 199), also Stackelberg (1944, p. 52).
[726] Schumpeter (1931, p. 196)
[727] See Dorp (1937, p. 5), also Strigl (1934b, p. 150).

goods, and processes them to unfinished and finally to finished goods. The only money payments such a company would have to make would be to the originary factors of production. As it is vertically integrated, it is not in need of any inputs provided by other companies. Another extreme possibility would be to have the process accomplished by hundreds or even thousands of consecutive companies. The first one mines the raw materials, the second one processes them to be ready for transport, the third one transports them and puts them for sale on the commodity market, the fourth one purifies them etc. At every transition between the numerous stages monetary transactions would take place. According to the logic of Hayek and his followers, the second process contains a tremendous amount of gross investment and therefore makes necessary huge gross savings. The first one, on the other hand, absorbs much fewer gross savings because there are no transactions between the stages.

Yet, it has no determinable meaning to say that the first process is in need for much more gross savings than the second one. Again, the only way the two will differ is the amount of business money absorbed by the business sphere. The more money transactions between stages have to take place, the more cash balances will be held by the companies. Except for the purchasing power of money, this difference has no further effect.

17. The claim theory of money

17.1 Money as a claim on consumers' goods

There is a monetary theory that deserves special consideration at this point of the discussion. This theory appears to provide an easy solution to our problem, i.e., to the connection between the value of money and the subsistence fund. Several renowned economists maintain that money constitutes nothing less than *claims* on consumers' goods. To quote Joseph Schumpeter:

> Because money income is only earned on the market for the means of production in order to be spent on the market for consumers' goods, and because what the economic agents really want for their productive services are consumers' goods, the nature of money is obviously correctly described by the analogy of a claim on goods.[728]

Further economists who used this analogy and maintained that money constitutes a claim on consumers' goods are Friedrich Bendixen, Walter Eucken, Erich Schneider, and Richard von Strigl.[729] Also some business economists dealing with economic calculation within the firm can be found who interpret money in a similar vain. Ernst Walb explicitly follows Schumpeter, Nico Polak writes that, in normal circumstances, money represents consumption power, and according to Kemper Simpson, money "represents a claim on desirable goods or services."[730] For these authors, money "*represents*" the consumers' goods it can buy. And indeed, if the value of money could be shown to represent in some way the value of the available consumers' goods, the monetary transactions on the financial market could easily be interpreted in the lines of the subsistence fund theory. In the words of Richard von Strigl,

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[728] Schumpeter (1917/18, p. 635)
[729] See e.g. Bendixen (1912, p. 163), Eucken (1954, p. 125), and Schneider (1969, p. 19). Strigl is quoted below.
[730] See Walb (1966, pp. 8 f.), Polak (1926a, p. 3), and Simpson (1921, p. 24).

> [i]f the entrepreneur in the money economy never has a wages fund at his command, never disposes of one, but exclusively disposes of money as soon as he invests capital, this disposing of money capital can only cause the process that we have discovered as investment of a wages fund in a barter economy if the money capital in a certain sense represents a wages fund.[731]

Money, then, would represent the power to purchase consumers' goods. And any transfer of money would, in the final analysis, mean a transfer of *this* purchasing power, i.e., of command over consumers' goods. Furthermore, the private capital that can be found in the balance sheets of businesses would stand for "accumulated and *postponed claims on consumers' goods, expressed in terms of money*."[732] In calculating in money, businessmen would essentially calculate in claims on the subsistence fund.

Unfortunately, the named authors have not provided an in-depth explanation of their assertion that money represents consumers' goods. That is why they can not be directly criticised here. What can be done instead is to show more generally that all theories that see money as a "claim" on goods cannot be upheld. In order to do so it is necessary to go into some detail. The theories in question all stress the unit of account function of money, and therefore it is impossible to criticise them without a basic understanding of the role of this function.

[731] Strigl (1934a, p. 27)
[732] Simpson (1921, p. 25)

17.2 The unit of account and payment in general equilibrium

The story that we are going to develop in the following pages is thought to reveal the logic behind the monetary theories stressing the unit of account function of money. It does not orientate itself by the historical evolution of the theory. The main ideas, as should become clear from the works being cited, have appeared again and again so that it would be difficult to illustrate their evolution.

Before we start to criticise the named monetary theories, it seems necessary to mention that there are mainly two approaches to view the role of money within the economy. The first way is to regard the market as a process and money, correspondingly, as a part of this process. This is how Carl Menger explained the origin of money.[733] According to that, barter is expensive as it presupposes the "double coincidence of wants."[734] Some individuals will have recognised the advantages of embarking on *indirect exchange* in order to acquire the good they are in need of, thereby using a good that serves only as a medium of exchange. Others will have copied this procedure so that, finally, a *common* medium of exchange – money – will have emerged.[735] As we live in a world of uncertainty, people will like to hold money balances in order to be able to exchange the money, if needed, against any kind of goods.[736] The value of money – its exchange ratios against all other goods, and therefore the *prices* of these goods – will then depend on its supply and its demand.[737] Thus, from this point of view, money is integrated into the price system and its value is established just as the value of all other goods in a constantly ongoing process. The foregoing discussion of the purchasing power of money stood in this tradition.

[733] See the article "Geld" in Menger (1970a), also Menger (1968, pp. 253 ff.), and Menger (1969, pp. 176 ff.).
[734] Jones (1976, p. 761). See Menger (1970a, p. 6) for a corresponding passage.
[735] See Menger (1970a, pp. 9 ff.), Belke/Polleit (2009, pp. 8 f.).
[736] See Patinkin (1965, pp. 14 f.), Salin (1990, pp. 41 f.), and Samuelson (1983, pp. 123 f.).
[737] See Mises (1949, pp. 398 ff.).

The second way to analyse the role of money within society is the one that leads to the stress of the unit of account function of money. It does not start from a vision of the market as a process that permanently adapts to changing circumstances, but from a world where already equilibrium conditions prevail. This starting point is chosen by all theorists who try to isolate the unit of account function of money. Some of them explicitly assume a *Walrasian general equilibrium framework*.[738] But others, like the creators of the Black-Fama-Hall system that will be criticised later on, want to apply their theory to a reform of the real, non-Walrasian world of uncertainty.

In equilibrium, all exchange ratios are fixed. To be precise, *all* exchange ratios between *all* kinds of goods are fixed. If, for whatever reason, somebody knows of the three goods A, B, and M only the two exchange ratios $\frac{\text{quantity of A}}{\text{quantity of M}}$ and $\frac{\text{quantity of B}}{\text{quantity of M}}$, he could easily derive the third ratio $\frac{\text{quantity of A}}{\text{quantity of B}}$. He only needs to use the good M as a common denominator that allows him to compare A and B concerning their exchange value (against M). Technically speaking, a common denominator reduces the number of relevant exchange ratios between N goods from $\frac{N(N-1)}{2}$ to N. [739] It should be obvious that this procedure can not only be accomplished by means of good M as common denominator, but just as well by means of the goods A or B. In this world, no special medium of exchange is necessary in order to bring the exchange ratios down to one common denominator. By means of a simple calculation, *any good can serve as common denominator*. With given exchange ratios and a common denominator, transactions can "take place not with goods against (nonexistent) money, but with goods against goods, with money in some way acting

[738] See Kuenne (1958, p. 1).
[739] See e.g. Brunner/Meltzer (1971, p. 787).

only as a counting unit."[740] Accordingly, *there will be no demand for or supply of a special medium of exchange*. As money is nothing more than a counting unit, it does not "enter the utility function" of individuals.[741] In some sense, every good can be used as "money."[742] It might be noted here that, without a concrete medium of exchange, i.e., without any *quantity* of money existing, both the quantity theory and the liquidity preference theory lose meaning.[743] There is no supply of money, and there is no demand for money. No influence at all can emanate from the money side.[744] This is the reason why it is regularly stated that money would not even exist in general equilibrium.[745]

In equilibrium, the exchange ratios are given before any actual exchange takes place. Many theorists who stress the unit of account function of money apply this reasoning to the real world. Says Mostafa Moini: "*Indirect valuation* […] constitutes a presupposition for the latter [indirect exchange] and, as such, comes prior to it both in logic and in history."[746] In this view, the unit of account exists independently of any commodity being eventually chosen as a concrete medium of exchange. In other words, the unit of account function can be isolated.

17.3 The idea of a clearing system

In the theories in question, the unit of account function is logically prior to and independent of the medium of exchange function.[747] Under these circumstances, the whole exchange process could accordingly be substituted by a system where everyone

[740] Patinkin (1948, p. 143), see also Wagner V. (1937, p. 85).
[741] Patinkin (1948, p. 140)
[742] See Fama (1980, p. 44), Wagner V. (1937, p. 88).
[743] See Cowen/Kroszner (1987, p. 569).
[744] See ibid. (p. 570).
[745] See Mises (1949, pp. 249 f.), Rothbard ([1962] 2004, p. 767), similarly Hayek (1929, p. 47).
[746] Moini (2001, p. 283, emphasis by Moini)
[747] See Aschheim/Tavlas (2006, pp. 334 f.).

gets the good he wants by the one who owns it, and delivers his good to the one who needs it. One might think of a society where

> [e]very individual quasi inserts his contribution into the big social automaton and receives a quantity of goods in return by means of the working of the mechanism. This quantity, together with the quantity of goods accruing to the other individuals according to the market importance [Marktgeltung] of their contributions, exactly exhausts the social product.[748]

No medium of exchange would be needed at all. Instead, as several authors argue, a central clearing house, or a system of several decentralised clearing houses, could serve as a device to control, according to the ex ante given exchange ratios or prices, whether everyone has delivered goods to others of the same value as he has received goods by others.[749] In such a clearing system, anybody who has already delivered goods but not obtained an equivalent return service obtains a balance in the clearing house that proves that he still has a claim[750] on goods of a specified exchange value. These balances could be deposits at this clearing house, or claim vouchers[751] issued by the latter that testify the right[752] of their holder to a certain amount of goods. The balances, of course, would not have value of their own as they only *represent* the value of the goods they are a claim on.[753] They would be "documents proving the execution of an act of exchange", but would not be the "object of such an act."[754] These devices, then, could be used as means of payment – or money if one wants to employ this term – in further transactions, always providing evidence for the fact that their owner has already delivered services to

[748] Schumpeter (1917/18, p. 633)
[749] See Yeager (2001, pp. 252 f.) and already the German nominalists, e.g. Knapp (1921, p. 139), Bendixen (1912, pp. 33 f.), and Elster (1923, pp. 31 ff.).
[750] See e.g. Moini (2001, p. 299), Landsburgh (1921, pp. 30 f.), even Irving Fisher (1926, p. 12).
[751] See Yeager (2001, p. 253) who follows Schumpeter (1917/18, pp. 647 f.). According to Salerno (1991, p. 339), this view can be traced back even to John Law.
[752] See Moini (2001, p. 268), Landsburgh (1921, pp. 36, 40, 42, 45, 48 f.).
[753] See Holtrop (1933, p. 119).
[754] Budge (1918/19, p. 738)

society, and therefore still has a claim or right to receive equivalent services from society in return.[755] Everyone who holds balances at clearing houses or claim vouchers could accordingly be interpreted as to have *granted a credit to society* by way of furnishing it with goods without instantly demanding a service in return.[756] These balances, or money, then, would only exist in so far as a credit or debt relation between its holder and society exists.[757] Credit could be said to be, in a sense, prior to money.[758] Without credit relations, no money exists. Thus the term money in these theories stands for claims or existing credit relationships. It has no existence outside of these relations. It is a means to accomplish payments, but not a good of its own that is a subject of demand or supply. That is the reason why money, being a credit, is seen as a „social relation" by some economists.[759] Schumpeter's social automaton quoted above should be interpreted in the same direction. To be able to interpret money as a social relation, an existing society must be presupposed. Moini calls this society the "payment community."[760] Earlier uses of this terminology are Knapp's "pay community" [Zahlgemeinschaft],[761] Bendixen's "payment community" [Zahlungsgemeinschaft],[762] and Elster's "economic community" [Gemeinwirtschaft].[763]

Our deductions have all started from the story that was told above about a system of exchange *in equilibrium* where exchange ratios already exist and individual parties can be made better off by the rotation of ownership of their respective goods.

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[755] See Schmidt (1910, pp. 9 f.), Landsburgh (1921, p. 36), Bendixen (1926, p. 18), Wagner V. (1937, p. 83), Schumpeter (1970, p. 210).
[756] See Yeager (2001, p. 253), Landsburgh (1921, pp. 32 ff.), Sherwood (1894, p. 153).
[757] These balances, though allegedly representing credit granted to society, should not be confounded with credit money in the sense Mises used the term. In this sense, "credit money emerges when an issuer of fiduciary media suspends redemption of these media for a definite or indefinite period of time." Salerno (1994, p. 77). See also Hülsmann (2008, pp. 28 f.), Belke/Polleit (2009, p. 7).
[758] See Wagner V. (1937, p. 83), Schumpeter (1970, pp. 209 f.), Moini (2001, p. 282), and Gardiner (2004, pp. 147 ff.).
[759] See e.g. Moini (2001, p. 289), Wray (2004, pp. 231 ff.), and Ingham (1996, p. 510), see also Wieser's ([1909] 1929 p. 220) comments.
[760] Moini (2001, p. 272)
[761] Knapp (1921, p. 135)
[762] Bendixen (1926, p. 57)
[763] Elster (1923, p. 9)

From the story followed the priority of the unit of account function of money, and from there followed the priority of credit as against money and therefore the proposition that money is not a good of its own but only represents social relationships. By referring to several authors in the preceding footnotes we do not want to imply that they have understood the links between the different elements of the deduction to be of the same order, or even that they used all these elements in their theories. Most of the elements can, however, already be found in Bastiat.[764] What has been tried here was to find the logic behind and the starting point of those theories that stress the unit of account function of money and interpret money as a claim on goods.

17.4 Money as a legal right

The most important point that can be said against this claim theory of money is that it cannot be integrated into the price system. It is, in other words, *acatallactic*.[765] As Mises states, an interpretation of money as claims on goods might be a helpful analogy, but it fails to deal with some important problems that have occupied monetary theorists for centuries.[766] The value of money in this theory is not subject to the laws that govern the value of all other goods as they are explained in common price theory. Whereas the value of all goods other than money is determined by the laws of supply and demand, this cannot be said of money if it is interpreted to be a claim. A claim is a *right*. Someone owning a claim on something has the right to take this thing into possession. Mostafa Moini, for example, states:

[764] See Bastiat (1854, pp. 80 ff.).
[765] See Mises (1917/18, p. 204).
[766] See Mises ([1912] 1953, p. 469).

> [M]oney has never been anything more or less than a person's outstanding rights against the expected stream of assets, goods and services supplied within the economy.[767]

Yet, money is in no way a legal right to any kind of good. Contracts presuppose the assent of all contract partners. Money is not a means to force someone else into a contract he does not want. "There are no such indefinite legal rights."[768] Money is accepted voluntarily.[769] Even the widespread legal tender laws do not make out of money a right against any stream of assets, goods, and services. They make out of it a device to pay off debts that have been created before, i.e. a means to pay after a contract has been concluded.[770] These laws, however, do not force anyone to enter into a contract in the first place. And as no individual member can be forced into a contract with anyone ready to pay with money, so society cannot be forced into it. If there were legal rules in a society that force people into these kinds of contracts this would imply that voluntary exchange was abandoned. This, however, is not what the proponents of the claim theory of money have in mind. It will be seen in the following lines that the claim theories of money cannot compensate for the lack of a demand and supply analysis for the value of money.

17.5 The value of money in a clearing system

Our considerations about a system where money basically plays the role of a unit of account began with already existing exchange ratios in a situation of equilibrium. Accordingly, all theories that stress the unit of account function have to start from a system of already given exchange ratios and sometimes explicitly do so.[771] With all

[767] Moini (2001, p. 268)
[768] Anderson (1917, p. 134). See also Budge (1931, p. 70) and Elster (1923, p. 29).
[769] See Wagner (1909, p. 121).
[770] See Fisher (1926, p. 12).
[771] See e.g. Fama (1980, p. 40).

these ratios available no medium of exchange seems to be necessary any more. Only units of account are needed further on.[772] A clearing system can settle all the claims one might have because of one's delivered services, whereby the unit of account serves as common denominator. If all things remained the same for all eternity, like in general equilibrium, this system might be argued as at least being conceivable. All mutual exchange rates – derived or actual – being known and invariable, what remains to be done is an *authoritarian act that defines the unit of account*. Then the prices of all goods could be expressed in this unit. A price system would be created immediately that allowed for business calculation and all kinds of trade: "If money really had no other function than to express and illustrate an already existing value relationship between goods, then indeed an abstract magnitude, a 'unit of value' could totally do the job."[773] And indeed, an authoritarian act, commonly by the state, is exactly what nearly all theories that stress the unit of account function of money either see at the beginning of historical evolution of money,[774] or demand for, like the Black-Fama-Hall system, in order to impose a new, supposedly better monetary system.

Within the framework of constant prices and already given exchange ratios this story sounds feasible. Once a unit of account is defined, trade can start with one central or several decentralised clearing houses settling the claims of the trading parties. But, alas, we live in a world of change. Some things lose their value to men, and others that haven't even been thought of before gain value. This change must of course be taken account of by our clearing system. The producer of some good that loses value will have a smaller claim on the stream of other goods than before. Yet, how exactly can our world adapt to such dynamic change?

[772] See Knapp (1921, p. 13).
[773] See Budge (1919, p. 501).
[774] See Wray (2004, pp. 180 ff.), Hudson (2004, pp. 99 ff.), Peacock (2003/04, pp. 205 ff.).

To repeat, we began with a system of already established exchange ratios. These ratios are frozen once the unit of account has been defined and the clearing system has come into being. Within this system there are no mutual exchanges taking place any more, but only clearings. "The market […] is not viewed as the place where goods are exchanged, but rather as a clearing house for debts and credits." [775] If someone delivers goods what he receives is a balance or a claim whose "value" stems from the exchange ratios handed down from direct barter or any other prior system. In a dynamic world it does not take long until these original exchange ratios do not represent the real value structure of goods anymore. Some goods must become worth more units of account, others less. But this seems impossible if the unit of account is not identical with the medium of exchange. *Between an abstract unit of account and a real good there cannot be any exchange ratio that might adapt itself to "the ever-changing conditions of supply and demand."*[776] No market process is automatically set in motion that could create new ratios according to supply and demand. There is no supply of and demand for a unit of account. Something of the kind only exist for goods that do have an actual and independent quantity, like concrete media of exchange. But to admit that the unit of account stems from the value of some medium of exchange would destroy the whole theory of the priority and independency of the unit of account function. The quantity theory, stressing the priority of the medium of exchange function, would be brought in through the back door.

The arguments that have been brought forth to deal with this problem in order to rescue the priority of the unit of account function are not convincing. The BFH-system will be discussed in the next section. Other economists simply charge the state authority with this task. The state, according to this opinion, not only is able to define the *numéraire* in an otherwise completed system of relative prices, but apparently is also

[775] Wray (2004, p. 239)
[776] Salerno (1991, p. 353). See also Scialom (1995, p. 46).

capable of creating and adjusting the latter system from scratch. It is maintained that "the modern state can make anything it chooses generally acceptable as money and thus *establish its value*" simply by accepting "the proposed money in payment of taxes and other obligations to itself."[777] It might be interesting to note that even Knapp, the author of the "State theory of money," does not go so far as to maintain that the state is able do establish the value of money. According to him, the state is only in the position to define the new unit of value *by means of the old one*.[778] The decision of a state to accept "anything it chooses" as money does not *create* any exchange ratio between different goods or between goods and money. In fact, the state would have to function as the *Walrasian* auctioneer[779] establishing these ratios. The whole price system would have to be centrally administered. The proponents of the claim theory of money do not comment on the possibility or desirability of this implication of their theory. In doing this they would be in the midst of the debate concerning the possibility of economic calculation in socialism started by Ludwig von Mises some ninety years ago.[780] This point has already been noted by Adolph Wagner who was of the opinion that the idea of money as a claim on consumers' goods contains all big socialist problems.[781]

17.6 The Black-Fama-Hall-System

The Black-Fama-Hall (BFH) system shares with the claim theory of money its basic view of the working of money within society. Fama and Black as well as Greenfield and Yeager are dealing with a society where no definable quantity of a medium of exchange exists.[782] The one thing that the BFH-system presupposes is the

[777] Lerner (1947, p. 313, emphasis added). See also Peacock (2003/04, pp. 208 f.). Febrero (2009, section 2) provides a short overview for this neo-Chartalist approach.
[778] See Knapp (1921, p. 19), also Keynes ([1930] 1971, pp. 4 f.).
[779] See White's (1984, p. 701) comment on Fama (1980).
[780] See Mises (1920).
[781] See Wagner (1909, pp. 142 f.).
[782] See Black (1970, p. 9), Fama (1980, p. 42), Greenfield/Yeager (1983, p. 305).

definition of the unit of account by the state authority.[783] Government would play no further role, and especially it would not issue any money.[784] The defined unit would serve as a "critical figure"[785] for the whole system and, accordingly, as a common denominator in clearing.[786] Greenfield and Yeager, following Robert Hall,[787] suggest the unit to be defined physically as the value of a bundle of several commodities that have shown themselves value-stable in history.[788] They propose to define it as "as the total market value of, say, 50 kg of ammonium nitrate + 40 kg of copper + 35 kg of aluminium + 80 square meters of plywood of a specified grade (the four commodities mentioned by Robert Hall) + definite amounts of still other commodities."[789]

So far the BFH-system very much resembles the monetary theories presupposing equilibrium conditions that were presented before. As no exchange medium exists, what takes place is not market exchange, but clearing, or payment of debts. "With no money quantitatively existing, people make payments by transferring other property,"[790] the unit of account serving as a calculation device that specifies the correct ratios in the settlement. Yet, the authors of the BFH-system think that, if no further intervention appears, a decentralised[791] payment system will develop that makes the price structure flexible and that is able to react to dynamic changes. So, in a sense, they try to heal the flaw that we have shown to be present in the claim theories of money. Let us see how they imagine the payment system.

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[783] See Yeager/Greenfield (1989, p. 409).
[784] See Greenfield/Yeager (1983, p. 304).
[785] Greenfield/Yeager (1983, p. 313)
[786] For Yeager (2001, p. 252) money generally serves as a clearing device. See also Yeager (2000a, p. 127) and Landsburgh (1921, pp. 59 f.).
[787] See Hall (1981, pp. 19 ff.).
[788] Greenfield/Yeager (1983, p. 302)
[789] Ibid. (p. 305)
[790] Ibid. (p. 307)
[791] See Yeager (2000, p. 51).

> Under laissez faire, financial intermediaries blending the characteristics of present-day banks and mutual funds would presumably develop. People would make payments by writing checks (or doing the equivalent electronically) to transfer the appropriate amounts value-unit-worths-of shares of ownership in these funds. (Convenience would dictate writing checks in numbers of value units, not in numbers of shares of heterogeneous funds.) The funds would invest in primary securities (business and personal loans and stocks and bonds) and perhaps in real estate and commodities.[792]

There would also be means of payment, or hand-to-hand currency, in this system. Some shares of the financial intermediaries, denominated in the unit of account, "could take the physical form of coins and circulating paper."[793] These notes, though being denominated in units of account, are not defined or issued by the state, but privately by the banks or mutual funds. No state law would force these notes into being or define them as having the value of one unit. Instead, competition would compel the funds to issue them in accordance to demand, to hold their value stable.[794] So media of payment are not abolished altogether. Only the unit of account function is separated from them.[795]

According to its authors, the most important advantage of this system is that it avoids macroeconomic difficulties known from our present system that stem from the manipulation with the quantity of money. These problems would allegedly disappear in the BFH-system.

> The unit of account no longer has its value dependent on the quantity of the medium of exchange. The unit's general purchasing power, being practically

[792] Greenfield/Yeager (1983, p. 307), see also Black (1970, p. 15).
[793] Ibid. (p. 308), also Yeager/Greenfield (1989, p. 409).
[794] See Yeager (1989, pp. 372 f.).
[795] Greenfield/Yeager (1983, pp. 303 f.)

> fixed by definition, is never called upon to undergo adjustment through a process exposed to the hitches characteristic of our existing system.[796]

Furthermore, as no centrally administered base money, no central banks, and no further state interventions into the monetary system would exist, "[c]ompetition […] would spur innovation in finance and the payments system and would exert discipline on banks and investment funds."[797]

17.7 Critique of the Black-Fama-Hall system

A comprehensive critique of the BFH-system is a difficult task. Even Nobel laureate James Buchanan admits that "I simply cannot understand the Yeager-Greenfield BFH System."[798] It suffices here to show that Greenfield's and Yeager's theory does not provide a mechanism that allows for dynamic changes in the price structure, the reason being that the value of the unit of account is not established in the exchange process. Instead, it is fixed by an authoritarian act and the value of the payment media – the notes issued by the banks or funds – must also somehow depend on the unit of account. This must be so because if the value of the notes was determined independently in the exchange process, "the inevitable conclusion results that money [these notes] is of value itself."[799] The whole idea of a clearing system and the dependency of the value of the media of payment on the definition of the unit of account would fall. It is the purpose of these lines to prove that this dependency leads to unsolvable contradictions.

Two ways are open in the BFH-system to make sure that the media of payment – the notes – retain the same value as the unit of account and therefore fit into the

[796] Ibid. (p. 310)
[797] Ibid. (p. 308)
[798] See James Buchanan (1987). Concerning its practical enforceability see Rothbard (1992, pp. 104 f.) and Seiche (1997, pp. 129 ff.).
[799] Budge (1918/19, p. 737)

framework of the clearing system. Usually, these two are not separated in the analysis which leads to severe problems. The first method is to denominate the notes in units of account. That is what Greenfield and Yeager think the private issuers of media would do.[800] What is the consequence of this? As long as only the prices of those commodities not contained in the bundle defining the unit of account are concerned, the system is indeed flexible and is able to react to dynamical changes. The notes denominated in the unit of account are exchanged against goods and therefore the price of the latter can be adjusted by means of demand and supply. If one commodity should be demanded stronger than before, more unit-notes will be paid for it, thereby increasing its price measured in units of account. Its price then increases not only absolutely in units of account, but also relative to the prices of all other commodities. The whole price structure adapts itself. This is possible because, in contrast to the general clearing system criticised in the sections 17.4 and 17.5, the BFH-system allows for means of payment that have an actual quantity.

Earlier or later, however, also the demand for the commodities composing the bundle defining the unit of account might change. Even if the commodities in the bundle have been chosen by the state authority because of their historical price stability, they might still be subject to some value fluctuations. Lawrence White remarks that the bundle of goods proposed by Hall "tracked the CPI well up to 1980, when Hall made his proposal, but […] did not continue to track the CPI well thereafter."[801] Let us suppose that, because of a technical innovation, the commodities included in the bundle can now be employed in a process of production in a more efficient way than another good not contained in the bundle that was used in this process up to the innovation. The following analysis is complicated enough. I therefore assume that *all* commodities in the bundle are affected in the same way. Things would become incomprehensible if the

[800] In addition to the places quoted above, see Yeager (1989, p. 371).
[801] White (1999, p. 241)

relationship between them would change as well. Naturally, the innovation leads to an increased demand for the commodities in the bundle, that is, more unit-notes are paid for them. Yet, how is the price structure supposed to adapt itself to this change?

The proponents of the BFH-system, as well as its critics, argue as if the adaptation could be brought about by a revaluation of the notes in terms of the commodities in the bundle. According to them, the value of the commodities in the bundle *could actually exceed the value of the unit they define.* Kevin Dowd explicitly states that "the commodity that defines the dollar […] has a legal 'par' value of $1", but can have a "market price […] different from $1."[802] Dollar, here, of course is the unit of account. Applied to our case where the demand for the commodities has increased due to a technical innovation, it is supposedly possible that, say, 1.2 unit-notes are offered on the market against the quantity of commodities defining one unit of account. In fact, we were in a situation where one unit of account (bundle) is paid for by 1.2 units of account (notes).

According to Woolsey and Yeager this might happen because

> [p]eople actually setting prices for the items in the bundle would not necessarily pay attention to the definition of the dollar. Each would separately seek maximum profit in view of perceived and expected cost and supply and demand conditions in specific markets.[803]

But if the values of the commodities defining the dollar do not add up to one dollar, what, after all, is the value of the dollar? As the value of its components varies, the value of the unit of account must also do so *by definition*. It is not possible that either the unit of account or the unit-note lags behind without abandoning the definition. And

[802] Dowd (1995, p. 71). For critics who argue in the same flawed line see Schnadt/Whittaker (1993, p. 216).
[803] Woolsey/Yeager (1994, p. 91)

as soon as we let go this equality by definition, we have two price systems instead of one. One price system that denominates all prices in units of account, and another one that denominates them in the supposed unit-notes. But this amounts to saying that the unit defined by the authority loses its role in the economy completely. The important thing would be the value of the notes, not of some arbitrarily chosen bundle of commodities. That is so because a "seller pursues his self-interest by posting prices in terms of the media of exchange he is routinely willing to accept."[804]

The problem is that the price system cannot adapt itself to the changed demand for the commodities defining the unit of account as long as these commodities do not serve as media of exchange themselves. When the demand for them increases because of the technical innovation mentioned above, what one would expect to happen is an increase of their relative price compared to all other goods. Yet, as we have seen, the price of the commodities in the bundle cannot increase measured in unit-notes as they define these units. The only other way that the price structure could adapt would be that all other prices fall. Then the price of the commodities in the bundle would have risen relative to all other prices and would still be equal to one unit-note. However, there is no mechanism to bring this adaptation about. The demand for all other commodities, except for the one affected by the innovation, has not changed at all. There is no reason why fewer units of the unit-notes should be offered for them so that their prices might sink.

This lack of an adaptive mechanism is what unites the BFH-system with the claim theories of money and what distinguishes it from a more conventional monetary system where the unit of account and the exchange medium are identical. In a system of the latter kind the price structure can adapt itself easily. The increased demand for the commodity defining the unit of account would also be an increased demand for the

[804] White (1984, p. 704). See also Walras (1922, p. 68).

exchange medium as they are identical. Both the value of the medium of exchange and the unit of account would rise implying that the prices of all other goods decrease.[805]

The second method in a BFH-system of hindering the unit-notes from fluctuating freely against the unit of account would be to let them fluctuate on the market, but stabilise them by means of redeeming them in goods or shares worth one unit of account.[806] This system is usually called "indirect convertibility" or, following a suggestion by James Buchanan, "indirect redeemability,"[807] and was not part of the original proposal of 1983. To make the point easier, we assume that the notes would be redeemed in gold. Other authors also follow this practice.[808] The logic of the point would not change if other goods or shares were chosen.

What would happen now if, similar to the case dealt with above, technical progress showed that the commodities in the bundle were a profitable substitute in some production process? As in the case before, the demand for these goods, measured in unit-notes and therefore units of account, would rise. This would, allegedly, work as an incentive for the holders of the media to go to the bank issuing them and demand redemption in gold. In order not to misrepresent this process, let us have a look at how Yeager and Greenfield describe it. They start from a situation where an event raises "the price of the standard bundle above its definitional level of U1.00 to as much as U1.20,"[809] U being the abbreviation for the unit of account. "Under these conditions," they continue,

> holders of Unit-denominated notes and deposits could do much better than simply spend them on goods and services. Exercising their redemption privileges at the issuing institutions, holders would redeem each one-Unit note

[805] See Cannan (1932, pp. 10 ff.).
[806] See Yeager/Greenfield (1989, p. 410).
[807] Yeager (1985, p. 104)
[808] See Rabin (2004, p. 33), Yeager (2007, p. 202).
[809] Yeager/Greenfield (1989, p. 412)

> and deposit in as much gold or whatever else the redemption medium might be as actually equaled in value, at current market prices, the total of the components of the bundle. In the supposed abnormal situation, holders would take away a quantity of the redemption medium quoted at U1.20. *They could sell this medium for notes and deposits denominated at U1.20, redeem these in redemption medium salable for U1.44, and so on.* [810]

This possibility for arbitrage would lead to a reduction of payment media and consequently a decrease of prices:

> To engage in such arbitrage, people would try to obtain notes and deposits for redemption by exhibiting reduced eagerness to buy goods and services and increased eagerness to sell them, all of which would put appropriate downward pressure on the general price level and on the total price of the standard bundle, The hypothesized deviation from what corresponded to the definition of the Unit would vanish. At the same time, the volumes of money and intermediation services would shrink, as befitted the shrunken demands for them.[811]

It has been suggested, and rightly so, that this scenario violates the law of one price. [812] If gold worth U1.20 can be had for one unit-denominated note at the redemption window, it cannot be possible, at the same time, to sell this amount of gold at the market for 1.20 unit denominated notes. Why should anyone buy this gold for 1.20 unit denominated notes if he can get the same amount at the redemption window for 1 unit? The market price of gold would sink immediately to the level that it is offered at the redemption window. There would not rest any incentive to convert one's notes into gold. The process that is supposed to reduce the "eagerness to buy goods and services"

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[810] Ibid., emphasis added.
[811] Yeager/Greenfield (1989, p. 413). See also Dowd (1995, pp. 78 f.) and Woolsey/Yeager (1994, pp. 90 ff.).
[812] See Schnadt/Whittaker (1993, p. 216), also Schnadt/Whittaker (1995, p. 297).

and to increase the “eagerness to sell them” would not be kicked off. The price system would not adapt itself.

Another problem would appear if the demand for the redemption medium, gold, increased. In this case the price structure would have to adapt itself such that the price of gold increases relative to all other goods. Yet, the absolute price of gold, measured in unit-notes, cannot increase as nobody would pay a market price higher than one unit-note for the amount of gold that can be had at the redemption window for one unit – the law of one price again.

The other possibility for the price structure to adapt would be the fall of all other prices except the price of gold. Then gold would keep its old price that conforms to the redemption ratio and still would have a higher price *relative* to all other goods. And a fall of prices is what probably would happen. As the demand for gold increases, it will be demanded at the redemption window and the eagerness to buy goods and services will decrease as described above. The decisive point is that this will and must lead to a *decrease of the demand also for those goods defining the unit of account.* Fewer unit-notes will be offered for these commodities as well. Yet, this scenario cannot be dealt with in the BFH-system. The issued notes are supposed to be held equal in value to the unit-defining commodity bundle by means of indirect convertibility. Allowing them to fall permanently below this unit would destroy the whole system as the notes would be valued independently of the defined unit of account.

The fact that the notes are redeemed against gold introduces a second critical figure to the system. On the one hand, the notes are supposed to be held equal to the value of the bundle, on the other hand they are, by the law of one price, held equal to the amount of gold that can be had at the redemption window. The system cannot react to the changed demand for the redemption medium.

The medium of exchange must be free to determine its value in exchange transactions with all other goods. Its value cannot be fixed to the value of some bundle of commodities, to a redemption medium, or both, as long as these goods are not used as media of exchange themselves. If they are not so used, the exchange value of these goods cannot be determined, nor can the exchange values of the supposed media of payment, either, as they are not free to fluctuate against *all* goods. The whole price system would become totally inflexible if the BFH-system or any other system that promotes the unit of account function of money was introduced. As Budge already said in 1919:

> Money that is supposed to grant access not to a specific good, but plainly to all goods, can only and must be the object of an independent act of exchange, and therefore can only and must be a thing of value.[813]

The "nature of money" is not correctly described by the analogy of a claim on goods. The theories that want money to be a claim on consumers' goods, although they would greatly complement the subsistence fund theory in the explanation of the rationale of the financial market, have to be dismissed. The link between money and the fund of consumers' goods is not as easy to detect as these theories imply.

[813] Budge (1919, p. 487). See also Salerno (1991, p. 353).

18. Private capital and the organisation of the market economy

18.1 The financing of the economy

18.1.1 The direction of production

Within the business sphere, businessmen orientate themselves merely by money prices. They calculate and act in money terms. They save money, they invest money, and they want to earn a monetary profit. It has been established for a long time that in striving for monetary profits, the entrepreneurs totally depend on the wishes of the consumers.[814] They are not free to spend money which the consumers are not prepared to refund to them in paying more for the products.[815] In the words of Ludwig von Mises,

> [i]f a businessman does not strictly obey the orders of the public as they are conveyed to him by the structure of market prices, he suffers losses, he goes bankrupt, and is thus removed from his eminent position at the helm.[816]

In addition, not only the businessmen producing consumers' goods depend on the consumers to whom they sell their products. Also those who produce intermediate goods and sell them to other businessmen depend on the consumer choices. Mises adds:

> Only the sellers of goods and services of the first order are in direct contact with the consumers and directly depend on their orders. But they transmit the orders received from the public to all those producing goods and services of the higher orders.[817]

[814] See e.g. Pigou (1949a, p. 36).
[815] See Mises (1949, p. 271).
[816] Ibid. (p. 270)
[817] Ibid.

In calculating in money prices and maximising their profits, entrepreneurs thus organise production in a way that best satisfies the wishes of the consumers.[818]

18.1.2 The allocation of the available power to purchase consumers' goods

Now, the analysis of the last chapters has brought to light another aspect of the organisation of the market economy. All money–commodity–money actions depend on the fact that money is accepted in the consumption sphere as income and profit payments. Otherwise, money could not be used to finance any actions in the business sphere. In incurring money costs, businessmen transfer their power to purchase consumers' goods to factor owners. *Thus, in maximising their money profits, businessmen not only direct production in a way that best conforms to consumer wishes, but they also organise the allocation of the available consumers' goods.* In orientating their actions by money prices, entrepreneurs channel the power to purchase consumers' goods into those production processes that seem to generate the highest profits. So in the end, the power to purchase consumers' goods is allocated to those persons who participate in the production of those goods that are demanded by the consumers. *Figuratively speaking, the businessmen, in maximising their profit, allocate the available subsistence fund to those factor owners who produce what is most in need.*

The analysis of the private notion of capital has brought us to the same result as our discussion of the social notion. To finance production in both cases means to provide the persons that are partaking in production with the consumers' goods they are in need of. This point is not easy to see because, in the market economy where the private notion of capital rules, the whole business sphere is financed with money. Yet, we have shown that money can only serve this function because it has the power to be

[818] See also Liefmann (1932, pp. 372 f.), Hoffmann R. (1962, pp. 20 f.).

used in the consumption sphere, that is, because it allows the access to what may be called the subsistence fund.

Now, in order to explain the role of the financial market in helping to finance the business sphere, it is necessary to understand where and how the business sphere is in need of being financed. To shed light on this question is the purpose of section 18.2. The famous debate on the nature of capital between the schools of Frank Knight and Friedrich von Hayek has turned on this question. The discussion will use elements of both sides of the debate. They both make valuable points, and, based on the results of the analysis so far, I will demonstrate how they can be reconciled with each other. In the end, capital is neither perpetual, as Knight maintains, nor must it be replenished out of additional savings after every transaction, which is Hayek's position. The truth lies in between. The arguments developed in 18.2 will be applied to the institution of capital accounting in section 18.3, and to the organisation of the production structure in section 18.4. In the whole of chapter 18 we go on to assume that no credit exists and that every businessman has to finance his investments with his own savings.[819] The role of credit and financial intermediation in this process can best be explained when they are inserted only later on.

18.2 The financing of the business sphere

18.2.1 Economic growth and the formation of the business sphere

Whether the economy has "grown" in that the well-being of people has increased can not be answered by theory.[820] That some of them feel better, richer, or happier surely is interesting from an psychological point of view. However, the well-being of individuals is a subjective phenomenon that cannot be measured. And

[819] That this can easily be done is confirmed by Pigou (1949a, p. 47).
[820] See Mises (1961, p. 159).

furthermore, what makes some people feel better might make others unhappy. Economic growth cannot be defined unambiguously.

Yet, we have seen in the part on the logic of action that every action is aimed at bettering the actor's situation. Thus, although we cannot measure well-being, we at least know that all human actions are directed towards it. Concerning our topic this means that the financing of actions in the business sphere is at least expected to make all parties involved better off. The founders of an enterprise, of course, want to attain profit. The owners of the originary factors of production employed are striving for income, and apparently they expect the latter to surpass the income they could have earned elsewhere. And in buying the final products, the consumers show that they prefer what has been produced by the enterprise to what they could have bought from other suppliers. Thus, every addition of a new *and profitable* enterprise to the business sphere increases the well-being of the involved people compared to what otherwise would have been. When more costs are incurred in the business sphere, this demonstrates that the corresponding increase of the business sphere apparently serves the well-being of people. The money that has been invested this way – the capital – can be read off from the balance sheets of the companies. Capital as the calculatory form of these costs is consequently a signal – and only that – of how much has been invested in the betterment of the well-being of the people.

If one is, with all reservations, to employ business capital as an indicator of economic growth, then one also takes account of the subjective nature of individual well-being, at least in some sense. Capital is invested where the profits are highest. Whether this is the case in libraries, amusement parks, or gambling casinos does not matter. Business capital is homogeneous. Its growth indicates an increase of well-being for all persons involved, no matter whether outsiders consider the product as productive or not. Of course, this point only holds so far as the capital is accumulated voluntarily.

If people were forced to save against their will, the increase of capital would rather indicate a "compulsory lowering of the standard of living."[821]

The growth of the business sphere must be financed with additional money savings entering it from the consumption sphere. Only this way entrepreneurs are able to employ more originary factors of production in a way that best corresponds to the wishes of the consumers.

18.2.2 The replenishment of business money by consumer spending

So far as the formation and the growth of the business sphere is concerned, the business money needed is provided by new savings entering the business sphere. Some persons save money and invest it in their business, whereby they always keep some amount of it in their cash balances. The savings necessary to finance new or additional investments in the business sphere stem from money income that has been saved. However, as soon as the companies at the latest stage of production have sold their product to the consumers, the cash balances of entrepreneurs are not filled up by saved money any more, but by the money spent by the consumers.[822] Companies who sell consumers' goods receive their money revenues directly from the consumers. A part of these revenues will constitute profits. In the normal course of business, most of the rest will be employed to restock inventories, replace worn machines, and pay originary factors of production. The money spent on consumption will trickle through to the supplier stages where the respective companies will also deduce profit and spent the rest on input. If the businessmen have planned correctly and their money revenues surpass their money costs, this money spent on consumption and passed on by the entrepreneurs is enough to keep the whole production process going. No *additional*

[821] Rothbard ([1962] 2004, p. 964)
[822] See Lahn (1903, pp. 4, 44 f.).

savings are needed in the business sphere as the money necessary to keep on business already comes from consumer spending.

Of course, what has been said above about the purchasing power of money does not lose its meaning. The businessmen selling the goods to the consumers only accept the money of the latter because it has the power to buy consumers' goods. Otherwise they would neither be able to consume their profits nor could they keep their business going as nobody would accept their money in payment.

The idea according to which no additional savings are necessary once a business is in operation lies behind the position of Frank Knight. In opposition to Friedrich Hayek he maintains that "[c]apital is perpetual in so far as economic principles obtain and economic reasoning is applicable."[823] According to him, once the business sphere with its different companies and stages exists, that is, after the construction period,[824] it exists permanently. The money needed for continuing business is always filled up by consumer spending, or, in Knight's terminology, by "an additional flow of consumable services."[825] That is so because, "in the absence of miscalculation, no investment will ever be made unless the yield […] has a discounted value equal to the cost."[826] In other words, what has been invested is expected to come back again through the sale of the product. In this regard it would have cleared things up if Knight had not used the phrase "capital is perpetual," but rather, as he did in a later paper, "capital is self-perpetuating."[827]

Now, in a sense, Knight is correct. Most business projects are indeed planned to be perpetual.[828] It is rather a rare case that capital is disinvested,[829] i.e., that more of the

[823] Knight (1934, p. 259)
[824] See Knight (1934, pp. 272 f.; 1935, p. 80; 1936, p. 453).
[825] Knight (1934, p. 273)
[826] Knight (1934, pp. 270 f.; 1935, p. 91)
[827] Knight (1941, p. 417)
[828] See Knight (1935, p. 89).
[829] See Knight (1935a, p. 626).

money revenue is consumed than the amount that constitutes profit. "Disinvestment is not in question unless society is decadent,"[830] or unless "economic relations are demoralized by crisis conditions."[831] Furthermore, one has to agree when he says that, even if society was decadent, "under modern conditions the possibilities of liquidation without serious loss are very limited, and the possible scope and speed of liquidation are only remotely related to the normal durability of the physical thing […] in which any increment of capital is invested."[832] This argument is developed further by some business economists. There is hardly ever a point in time where the whole balance sheet of a running enterprise consists of money. Some of the capital always consists of unfinished and finished goods in stock, machines, buildings etc.[833] For each of the different items, the time period until they lead to revenues is of a different length. And to keep the more durable investments going, it will be necessary to replace the short ones that are complementary. To be able to liquidate the company without severe losses it will therefore be necessary to carry on business until the lowest common multiple of all complementary investment periods is reached.[834] To stop business at any earlier point in time would be arbitrary and not advisable.

Knight's thesis according to which capital is perpetual is, in the end, based on an empirical argument. What is necessary to keep capital intact is "that the individual owner of any income-yielding capital good or quantity of capital shall distinguish between consuming its yield and consuming the capital itself." And, according to Knight, the "only historical example we have any possibility of studying," namely

[830] Ibid.
[831] Knight (1936, p. 457)
[832] Knight (1935, p. 83)
[833] See Mühlhaupt (1966, pp. 18, 24).
[834] See Hoffmann R. (1962, p. 92).

capitalistic civilisation, does indeed "maintain its capital and increase it fairly rapidly."[835]

Now, Knight's position seems to be the logical consequence of our own analysis. As long as the entrepreneurs calculate correctly, and as long as they do not consume more than their income, i.e., profit, they do not need any further savings in order to keep their capital intact. Under these conditions, which, as we might add, correspond to a "fictitious stationary state" with "perfect foresight,"[836] capital is indeed perpetual. The business sphere, so it appears, is financed by consumption, not by any kind of saving.

However, it must not be inferred from the argument conveying that the necessary money is as a rule filled up by consumption that consumption expenditures alone are able to give a stimulus to production. This view is advocated in Keynesian macroeconomics. There, additional consumer spending stimulates the economy and has a positive influence on the real gross domestic product.[837] It is true, on first sight this point seems to be confirmed by our analysis. Once a business exists and works smoothly, the money necessary for production does not come out of additional savings, but out of consumer spending. What is overlooked in this argument is that additional consumer spending will, first of all, lead to higher *profits* of those companies selling consumers' goods. *Production* will only be stimulated if the owners of these companies *decide not to consume their income, but to save at least a part of it in order to invest it*. Therefore, although the money necessary to keep on business is replenished by consumer spending, its amount can only be increased by additional savings out of income.[838]

[835] All quotes from Knight (1936, p. 457).
[836] Both quotes from Hayek (1936, pp. 226 f.).
[837] See Taylor (2007, pp. 616 ff.), Blanchard (2006, pp. 48 ff.), Dornbusch et al. (2008, pp. 224 ff.).
[838] See Reisman (1998, p. 834).

18.2.3 The necessity of maintained saving

The concept of gross saving turned out to be arbitrary. Instead, Frank Knight seems to be correct in stressing that investments, in general, are made forever and have therefore to be regarded as perpetual without necessitating any further finance out of new saving. At this point, one must be careful not to draw the wrong conclusion from this result. Although, in the absence of miscalculation and decadence, business money is always filled up by consumer spending, this does not imply that no further sacrifices or costs accrue. Indeed, every entrepreneur is able to consume his whole profit. He does not have to save part of it in order to keep his business going. But he nonetheless has to abstain from consuming his savings, especially the amount of his money revenues that do not constitute profit. Concerning this amount, he has to maintain or prolong his saving if he wants to stay in business. To express this idea, Strigl uses the term "beibehaltenes Sparen,"[839] Åkerman the similar term "festgehaltenes Sparen"[840] which both mean "maintained savings." Reisman speaks of "saving out of business sales revenues."[841] As is already indicated by the expression *maintained* savings, these savings stem from the past. They originate from income that has been saved in the past and that has already entered the business sphere. The point is that these savings have been set free again and its owner is in a position to decide whether to save further on and reinvest the money, or to disinvest and consume it. After all, the money has the power to purchase consumers' goods. Thus, his decision to reinvest indeed implies costs, that is, the sacrifice of his power to purchase consumers' goods for another period of time. But it does not make necessary *additional* savings out of his income.

The whole production process is *not* kept in motion *automatically* by the permanent inflow of consumer spending. It is necessary that the businessmen maintain

[839] Strigl (1934b, p. 147)
[840] Åkerman (1923, p. 51)
[841] Reisman (1998, p. 836)

their savings and do not consume their capital. “It is clear that only the permanent reinvestment of the set free money capital makes for the maintenance of production.”[842] To repeat, however, it is inadmissible to add up the maintained savings of all businessmen and call the result “gross saving.” *The savings have been prolonged, not increased*.

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18.2.4 The necessity of additional saving out of income

After the construction period and in case of correct business calculation, no further savings out of income seem to be necessary to maintain the business sphere at a stationary level. As soon as we introduce calculation errors, the picture changes fundamentally. Every time the plans of an entrepreneur fail and his money costs are nor matched by his revenues, he has to stop his business, or at least he has to reduce the amount of his reinvestments, for example by dismissing workers. His capital diminishes. Without additional savings out of income, sooner or later the whole business sphere would disappear as entrepreneurial mistakes can never be ruled out in a world without perfect foresight.[843] And every time the revenues are smaller than the costs, it is impossible to reinvest the same amount as last time. The amount of maintained savings and reinvestments necessarily diminishes.

This process can only be counteracted if new savings enter the business sphere permanently to fill up the lost capital. Other businesses might face higher profits, save part of them and expand business. Some people who have not been part of the business sphere might decide to save and to found their own business. Hence, even to keep the business sphere intact it is not enough to count on the replenishment of business money by consumer spending. There will always be a need for further finance out of savings that must necessarily come out of income.

[842] Strigl (1935, p. 215)
[843] See Mises (1949, p. 291), Lachmann (1973, p. 42).

18.2.5 The permanent nature of most investments

On the one hand, we see the difficulty of liquidating a company, and, on the other hand, we see the necessity of maintained saving in order to keep business going. It must be concluded, therefore, that in most businesses savings are indeed invested without any maturity. Wherever a business project is started that has no predictable end, it is fair to say that the savings have been invested forever. It makes no difference whether the respective company produces consumers' goods or durable machines; or whether its assets are turned over once a week or, as may be the case for some assets in the capital-intensive industries of heavy manufacturing or mining, only once a year or even once a decade. As long as the balance sheet total of the companies with the fast turnover remains constant over time, its need for finance is just as permanent as for those that have a slow turnover.[844] Of course, sometimes unforeseen coincides will make necessary additional and nonrecurring payments. The means to cover such expenses do not have to be invested forever.[845] But, in general, the capital that is necessary for carrying on the complementary investments of the company must be based on permanent savings.[846]

18.2.6 The periodical setting free of savings

That savings have to be set free in cases of short-term and nonrecurring investments should be clear without saying. In these instances, money savings are paid to factor owners and are expected to flow back again after the project. Matching savings and investment maturities in this case is rather unproblematic as the entrepreneur operates autonomously as both the one who saves and the one who

[844] See Polak (1926, p. 45), Hoffmann R. (1962, pp. 92 ff., 102).
[845] See Hoffmann R. (1962, p. 100).
[846] See ibid.

invests.[847] He can assure himself pretty easily that he will be able to maintain his savings until they are set free again.[848] But also in businesses that have no predetermined maturity date savings have to be set free regularly.[849] What has been said in the last section, i.e., that savings must be available for an undeterminable period of time, must not be taken to mean that it is not important how long it takes until savings are set free again. This point is connected to what has been said in section 18.2.2. As soon as a company has started business, its money funds are filled up again either by consumer spending – if it sells goods to consumers – or by the payments of its commercial customers. With this money, it is able to keep on buying input factors and to stay in business. Without this replenishment, it would rely on additional money savings. If these were not at hand, it would have to stop operating.[850] Hence, the length of the period during which the capital is bound up depends on the amount of savings.[851] If an entrepreneur only commands few savings and wants nonetheless to found a permanent business, he must be careful not to immobilise his capital for too long. After all, he regularly needs money to pay for the input. The more savings an entrepreneur commands, the more he can either expand horizontally, that is, engage more factors for the same length of time, or expand vertically, that is, extend the time he advances the payments to the factors of production before the revenues accrue.

It must be added that the length of time between the investment of the capital and its being set free again can not be enlarged by *synchronising* the investments such that always several staggered[852] and time-displaced production processes are taking place parallel. An example of synchronised investments is provided by a company that runs, say, six production processes of the same kind that all take one year. One of them

[847] See Bagus/Howden (2010, p. 67).
[848] See ibid. (pp. 67 f.).
[849] See Marx (1967, Vol. 2, pp. 260 f.).
[850] See Hoffmann R. (1962, p. 46).
[851] See Strigl (1934b, pp. 100 f.).
[852] See Strigl (1934a, p. 23).

starts in January, one in March, one in June, and so on. In such circumstances, the revenues of the respective processes will occur bi-monthly, too. Consequently, if production is synchronised, the revenues of one finished process can be used to finance the payments for the input factors of the other, still ongoing processes.[853]

However, it goes too far to maintain that, because of synchronisation, "[r]eal production is simultaneous with consumption" and that, therefore, "there is no relation between the quantity of capital used in a society and the length of any 'production period' or interval between production and consumption."[854] One must keep in mind that the synchronisation of production has two effects. First, parts of the invested capital are set free more frequently. This effect seems to reduce the time length between the investment of capital and its backflow in the form of cash. Synchronisation thus appears to allow for a lengthening of the investment periods as the necessary savings are always set free by other processes. The investment period apparently loses its meaning. Secondly, however, the synchronisation of production implies a multiplication of input payments. With several processes running parallel, more factors of production have to be employed at the same time. In consequence, more capital has to be invested in order to pay for them.[855] And anytime capital is set free, the respective amount only constitutes a fraction of the whole invested capital.

If, to stay in our example, there are six processes running parallel, every time one of them produces revenue it only corresponds to one sixth of the whole capital.[856] Now, let us suppose that for one or several of these processes the time length between the investment and the setting free of capital is increased. As long as the other processes that have kept their old length provide the entrepreneur with revenues, no disruption will occur. However, as soon as the last process with the old length of

[853] See ibid. (p. 32), Fillieule (2010, pp. 101 f.).
[854] Both quotes from Knight (1935b, p. 25, n. 29).
[855] See Marx (1967, Vol. 2, pp. 262 ff.).
[856] See Strigl (1934b, pp. 14 f.).

investment has been finished, there will be a lack of revenues for some time for the next process has adopted a longer period before its revenues accrue.[857] Either our entrepreneur bridges this gap with additional savings, or he has to stop paying his workers and suppliers.

Concerning the possible length of the time capital can remain bound up the two named effects counteract each other. In the end, this period is not altered by the synchronisation of production. The effect according to which the average time length of investment seems to be reduced and a lengthening of the particular periods seems possible is nullified by the fact that more savings are necessary to bring this effect about. Even with synchronisation the setting free of savings is the bottleneck when it comes to finance an increase in the length of the production processes.

18.3 The social role of capital accounting

The operations of the business sphere are accompanied by capital accounting. It has been explained as a device that allows for a comparison of monetary costs and monetary revenues. This is enough to understand why businessmen employ it in their striving for monetary profit. Now that the connection between the business sphere and the consumption sphere has been clarified, the function of capital accounting within society can be seen more clearly. The capital of an enterprise, as a calculatory magnitude, expresses the amount of money invested in the company. It shines up either as cash or as historical costs. Because of this link to money, capital can be understood, with Walter Eucken, as

[857] See ibid. (pp. 186 f.).

> the power to dispose over consumers' goods that once was in the hands of the entrepreneur and that served for the acquisition of the production goods and consumers' goods that are in the balance sheet at the moment.[858]

As long as capital accounting sticks to the traditional valuation rules, it thus monitors whether the business operations have increased or decreased the power to consume.

> In that businessmen compare the profit contribution with the underlying capital they determine in how far the operations were successfully aligned to the satisfaction of wants.[859]

This, as Eucken adds, is "the rationale of capital accounting."[860] It explains the role of capital accounting not only as a part of the private capital concept. Now capital accounting also makes sense from the social point of view. Similar ideas, but even more shortly expressed, can be found in Kemper Simpson.[861] Yet, both of the mentioned authors take a shortcut and interpret money as a "claim on consumers' goods." But even without this assumption capital accounting can be interpreted this way. *It reveals whether the available consumers' goods have been allocated to the owners of the production factors in a way that increased the well-being in society.*

[858] Eucken (1954, p. 129)
[859] Ibid. (p. 130)
[860] Ibid.
[861] See Simpson (1921, pp. 24 f.).

18.4 The interest rate and the structure of production

In maximising their profits, entrepreneurs not only determine the interest rate, but simultaneously also the so-called structure of production.[862] As was shown above, they must make sure that their capital is set free regularly. They accomplish this by selling their products periodically. They can sell them to consumers, of course, but also to other businessmen who employ them as input. Which one of these alternatives is preferred by tendency is determined by the willingness of the other entrepreneurs to save. When there are a lot of entrepreneurs investing their savings in the business sphere, they will bid up the prices of the goods they need as input and bid down the prices of consumers' goods. Under these circumstances, it will become more profitable to produce intermediate goods that the other entrepreneurs use as input than to produce consumers' goods. Thus, in searching for profits, entrepreneurs will start to produce for commercial customers and therefore to replenish their free capital out of the savings of the latter. In bidding up their own input prices, they will also equalise the rate of profit of producing consumers' goods and producing intermediate goods. If savings are increasing further, the price spreads in question will become smaller and, in the course of this, the input prices of the producers of the intermediate goods will be bid up. Other entrepreneurs will find it profitable to produce these inputs. This story could be continued ad infinitum.

In short, the more savings compete for profit, the less profitable it is to replenish one's free capital out of consumer spending, and the more profitable it becomes to replenish it out of the savings of other businessmen. A lowering of the interest rate, i.e., of the spread between input and output prices, will thus be accompanied by a lengthening of the structure of production.

[862] A short exposition of the concept of the structure of production and corresponding references have been given in section 8.5.

19. The role of the financial market

19.1 The transfer of savings as the basic transaction on the financial market

19.1.1 Credit

So far it has been assumed that every businessman only employs his proper money savings in investments. In other words, he *financed* his plans with his own money. As was already mentioned at the beginning of part II, it is possible that the plans of the acting individuals intersect. The costs or the revenues that appear in the action of one person can be financed out of the savings of someone else. We have already discussed some of these interpersonal aspects. The workers, for example, were paid out of the capital of entrepreneurs. In such cases, the costs of the entrepreneurs become revenues of the workers. But so far the savings have not yet been traded on the market. This aspect of interpersonal finance has been delayed until now. In a complex society, of course, the assumption that everyone who invests must provide the corresponding savings himself cannot be upheld. There, in the words of Friedrich von Hayek, "[o]nly in comparatively few cases will the people who have saved money and the people who want to use it in production be identical."[863]

As we exclude from our considerations all transactions that take place 'beyond the market' – most notably gifts – the transfer of savings is not done for free but is followed up with a return service by the counterparty. This kind of contract is called *loan* or *credit*. "In a credit transaction, a present good is exchanged for a future good, or rather, a claim on a future good."[864] Money loans, which solely interest us, correspondingly consist in the exchange of money for a claim on future money payments. That credit is of advantage for both the lender and the borrower is a long-established fact in economics. The reason is that, very often, those who know how

[863] Hayek ([1935] 2008, p. 264)
[864] Rothbard ([1962] 2004, p. 166, emphasis erased)

money can be invested profitably are not those who command money.[865] There are gains of trade for both parties if they find together and unite their respective powers.[866] One of them provides the savings, that is, finances the undertaking, the other one provides his knowledge and his ability in order best to invest these savings. The savings are "passed from the hands of those who are not able to employ them to the hands of those who are in a position to put them to work."[867] The existence of credit thus enhances the division of labour in society.[868] This way, the tendency to invest the available savings where the highest profits can be derived is strongly enhanced by the existence of credit.

The profits that can be had in bringing together those who save and those who know best how to employ the saved money build the reason for the further development of what we have called interpersonal finance. The profitability of such arrangements has even given rise to the evolution of institutions that serve as *financial intermediaries*. These institutions "bring together those with funds to invest and those seeking funds to borrow. […] [T]hey enable these parties to trade at lower cost or inconvenience than would be the case if they dealt directly with one another."[869] In financial intermediation, even three parties expect to profit from the bringing together of those who save and those who know to invest.[870] The profit opportunity for the intermediaries arises because they facilitate transactions between potential lenders and borrowers. They do so by reducing search-, transaction-, and similar costs[871] and by providing other services like size-, risk-, and term transformation.[872] It might be best to classify financial intermediaries into two groups, the *brokers* and the *dealers*. Brokers only

[865] See Cournelle-Seneuil (1876, p. 22).
[866] See ibid. (p. 23), Reisch (1932, p. 3).
[867] Coquelin (1854, p. 495)
[868] See ibid (pp. 495 f.).
[869] Dowd (1996, p. 114)
[870] See Boyd (2008, p. 360).
[871] See Dowd (1996, pp. 115 ff.), Levine (1997, pp. 690 f.), Howells/Bain (2007, p. 8).
[872] See Bitz/Stark (2008, pp. 9 ff.).

provide information to the savers and borrowers in order to bring them together.[873] The dealers, most notably banks, trade on their own account.[874] They attract loans from their customers and then lend these funds out to third parties.[875]

Loan contracts constitute the most important part of the interpersonal transfer of savings. And where savers and debtors become negotiating partners, markets and commercial forms must necessarily develop.[876] If we stick to our definition of finance, it even seems appropriate to define the financial market as the market for money loans. Financial market then is only a different expression for loan market.[877] In the next section I will elaborate that the terms "loan" and "credit," as it is used here, comprise not only lent money, but also equity capital.

Defined as the general market for loans, the financial market is not organised as one distinguishable market place. Instead, it comprises *all* transactions that consist in the temporary transfer of money savings from one person to another one in order to finance the plans of the latter.[878] In section 19.1.3 I will apply the results of the discussion of the purchasing power of money in chapter 16 on money loans. Credit is nothing else than the transfer of power to purchase consumers' goods. The financial market thus corresponds to what we have called the subsistence fund market. Finally, 19.2 will deal with the time dimension of credit. Whereas money does not have this dimension, credit is nearly always negotiated for a period of time, be it for one day or for ever. As will become clear, this additional dimension does not cause severe theoretical problems. The institutions of mobilisation and term transformation bring the period that the savings are tied up by the savers in line with the period that the savings are invested by the businessmen.

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[873] See Dowd (1996, p. 9).
[874] See ibid.
[875] See Huerta de Soto (2009, p. 168).
[876] See Schmalenbach (1949, p. 14).
[877] See Borchert (1993, pp. 1243 f.), Tuchfeldt (1978, p. 433).
[878] See Prion (1924, p. 59), Borchert (1993, pp. 1243 f.).

19.1.2 Equity and debt capital

All participants of interpersonal finance are, of course, expecting to profit from their transactions. This includes the lender, the borrower and, if involved, the financial intermediary. If the borrower is not part of the business sphere, he expects to gain psychic profit which, as we know, is not open to measurement. If he is part of the business sphere, he will employ the money in order to obtain monetary profit. This profit, however, he will have to share with the saver and, possibly, with the financial intermediary. After all, the both of them want to profit from the transaction either. There are different arrangements possible concerning the sharing of the eventual profits. The saver (or the intermediary) might provide *equity capital*. He then becomes the – or at least one – owner of the company in question. If profits accrue, he is entitled to receive the dividends. Otherwise, he has to carry the losses. On the other hand, the saver might also *lend* the money to the company. Then he does not share in the profits. Instead, as creditor, he will be entitled to interest payments that have been agreed in advance.[879] The same distinction can, by the way, be made concerning the transactions between the savers and the financial intermediaries. Either the former provides *debt capital* to the latter, which is usually the case with the customers of an ordinary bank. Or he acquires equity, for example in a mutual fund, a different kind of intermediary.

There are further legal differences between debt and equity capital. The most important one concerns the claims the respective investors have in case of bankruptcy.[880] For us it is important that in both cases one renounces the command over money in order to receive money payments in the future. People will do so as far as they expect the dividends or the interest payments to be higher than what they would get as profit if they invested their money in an undertaking that was conducted by themselves. For the borrowing entrepreneur, as was already indicated in section 14.1,

[879] See Schneider D. (1992, p. 48).
[880] See Hoffmann R. (1962, p. 66).

both forms constitute credit. Therefore, also equity capital is sometimes included in the term "credit in the broad sense." Schmalenbach for instance calls it "stake credit" [Beteiligungskredit].[881] That equity capital, so far as it is traded on a market, is generally considered to constitute credit can also be seen in the fact that the terms "financial market" and "capital market" generally apply to both equity and debt capital.

From the point of view of those who have money and want to invest it, the financial market is one further alternative. Even without this market it is possible to invest one's money in paying workers or other factors of production in order to make more money.[882] The financial market only *competes* with the self-financing of operations. It therefore also does not determine the market interest rate.[883] Instead, it "adjusts the rate of interest on loans"[884] to the rate of interest that permeates the whole economy as the price spread between money costs and money revenues. If large profits can be gained in financial intermediation, entrepreneurs will enter this area and tend to decrease profitability there. In the same way, if it seems more profitable to provide equity capital than debt capital, savers and financial intermediaries will provide more of the former and less of the latter. Risk and other differences aside, the interest rate tends to become equal in all areas of business.

19.1.3 Money credit as transfer of the power to purchase consumers' goods

After what has been said on the purchasing power of money it should not be difficult to find the rationale behind the working of credit and the financial market. Whenever somebody demands money on the financial market, he needs its power to purchase consumers' goods. This can most easily be understood in the case of

[881] Both quotes from Schmalenbach (1951, pp. 33 f.).
[882] See Strigl (1934b, pp. 163 f.).
[883] See Rothbard ([1962] 2004, pp. 420 ff.).
[884] Mises (1949, p. 524)

consumer credit. It hardly seems necessary to mention that the money obtained by consumer credit must be able to purchase consumers' goods.

But even the case of a *businessman* who demands credit does not pose any problems that have not yet been dealt with. He needs the money to pay either originary factors of production or intermediate goods. The only reason why these transactions can be performed with the help of money is that it has the power to become income of the originary factors of production or profit of other entrepreneurs. And, to repeat, it only has this power if it actually buys consumers' goods. Therefore, the existence of the interpersonal transfer of savings does not change anything in the reasoning so far. Credit serves as a means to transfer the power to purchase consumers' goods. As long as the creditors maximise their profits, they contribute to the allocation of the available consumers' goods to the factor owners that are employed in those processes that best satisfy the wishes of the consumers.

It is also possible by now to interpret the term "loanable funds." Superficially it refers to the money loans that are the object of the actually existing financial market. They represent the savings that are dealt there. However, they also have a counterpart in the vision of the financial market based on the social concept of capital. *In the end, the function of the monetary loans is to allocate the available power to purchase consumers' goods.* The loanable funds bear a close relationship to the subsistence fund. If one keeps in mind that money does not *represent* consumers' goods but that its value also changes according to supply and demand, *it is fair to call the financial market the subsistence fund market. The undefined terms "funds," "resources" etc. that are usually employed in the description of the financial market then have a real meaning. They refer to the consumers' goods that can be bought by the factor owners with the money that the savers have not used to buy these goods.*

One point concerning the purchasing power of money that has already been raised in the treatment of the business sphere must not be forgotten. Money does not flow from the savers via the financial market to the borrowers with infinite velocity. Like all other businesses, banks, brokers, and other intermediaries are in need of cash balances to operate smoothly.[885] An additional demand for cash will arise with the evolution of financial intermediation. However, the consequences of this addition to the demand for money do not require an in-depth analysis. In the end, the cash balances of financial intermediaries are part of the business money and do not make necessary a distinct treatment.

19.2 Financing the economy by means of credit

19.2.1 The different time structure of the demand and the supply of savings

Chapter 18.2 was dedicated to the question as to how the business sphere is financed. What rests to be done is to show how the financial market contributes to this task. There are mainly three ways how the financial market does so. *Size transformation* should not pose a problem for understanding. On the financial market, small amounts of dispersed savings are collected and lent out on a large scale.[886] This task is in the main accomplished by financial intermediaries like banks.[887] They bring savers and borrowers together which would otherwise not have found each other. The basic rationale of *risk transformation* is also not difficult to grasp. Financial intermediaries distribute the savings they collect to a large number of borrowers. As the risks of the individual borrowers do not perfectly correlate, the overall risk can be reduced this way.[888] Borrowing one's money to such institutions is therefore less risky

[885] See Lahn (1903, pp. 106 ff.).
[886] See Levine (1997, p. 699).
[887] See Howells/Bain (2007, p. 12).
[888] See ibid. (pp. 11 f.).

than borrowing it to one individual lender.[889] The following analysis only focuses on the third function of the financial market, namely *term transformation*. The latter seems to be associated with the most possibilities of confusion.

There will, of course, always be some people who only want short-term credit. This might be the case for companies when unforeseen or irregular one-time instances demand additional money funds. Also some forms of consumer credit will not take forever as the respective borrowers are going to pay back the credit out of their future income. To provide the necessary savings for the time in question will not pose serious problems. There are always people who are willing to lend money and to abstain from consumption for a foreseeable time period.

In the business sphere, however, most companies are thought to last forever, or are at least planned without any maturity date. They are therefore in need of being financed *permanently*. Once invested, it is hardly possible to liquidate a larger part of the capital again without serious losses. This gives rise to an important problem. Whereas most borrowers, at least in the business sphere, demand permanent savings, most savers are not willing to bind up their savings forever. Lenders usually prefer to invest their savings only for a short period.[890] They never know in advance whether there will not be a need for liquid money in the future, and therefore they hold back when it comes to give up the availability of their savings.[891] To an entrepreneur this means that, if there were only short-term savings to be had that really had to be paid back after maturity, and if there was no sufficient prospect that the credit will be prolonged or substituted by another one, the whole project could not be started.[892]

As most borrowers demand long-term finance and most lenders prefer to supply short-term loans, there is a mismatch between the supply and the demand for the

[889] See Boyd (2008, p. 361), Fabozzi/Modigliani (2009, p. 26), Hicks (1935, p. 10).
[890] See Schmalenbach (1951, p. 114), Levine (1997, p. 692), Boyd (2008, p. 360).
[891] See Bagus (2010, p. 5), Schmalenbach (1951, p. 114).
[892] See Schmalenbach (1951, p. 117).

different kinds of credit. Therefore, the "yield curve is usually upward sloping, which means that interest rates are higher the longer the term of the loan."[893] If no solution was found to bring the borrowers and lenders together nonetheless, the interest rate would be extremely low for short-term credit, and extremely high for long-term credit.[894] Only very few transactions between the lenders and the borrowers could take place. The business sphere that especially demands long-term finance would for the most part have to get along without credit.[895] Less capital would be invested in the business sphere which would have a detrimental effect on economic growth in the sense we have given to the term in section 18.2.1.

Now, in the course of time, two institutions have evolved that provide a solution to this problem. They make transactions possible between the participants of the financial markets which would not take place without them because of the mismatch of maturity wishes. These institutions are the mobilisation of capital and term transformation.

19.2.2 The mobilisation of capital

To understand the rationale of mobilisation one has to realise that most lenders do not insist on short-term contracts because they definitely plan to reclaim their savings after maturity. What they want is only the *possibility* of doing this.[896] This is enough to feel protected against surprising events that demand the availability of money at short notice. In this respect, it does not matter to the lender whether he can reclaim his savings from the original borrower or from someone else. The main point is that he *can* reclaim them and that they are therefore sufficiently liquid.

[893] Bagus (2010, p. 5)
[894] See Schmalenbach (1951, p. 121).
[895] Similarly Levine (1997, p. 692).
[896] See Schmalenbach (1951, p. 121).

In mobilisation, exactly this fact is taken advantage of. The whole credit is split up into *fungible shares* denominated in small amounts[897] that are called securities. Whoever buys one of these securities from the company newly issuing them grants the latter credit. These kind of transactions take place on the so-called primary market. The key financial institution in the primary market is the investment bank that underwrites the securities[898] and later sells them to the public. This way, on the primary market the savings are transferred from the savers to the company. So far, our problem is not solved yet. An owner of such a security bought on the primary market would still "have to hold it until maturity, if the security featured a maturity, or until death, if the security were a perpetual issue."[899] Yet, as the securities are fungible and denominated in small amounts, it will usually be easy to find someone who wants to take them over in order to profit from the undertaking himself. The possibility to trade fungible securities has given rise to the "market for the exchange for pre-existing securities"[900] which is usually called *secondary market*. The stock market is, in the main, a secondary market for securities.[901] Holders of securities and suppliers of savings meet there in order to trade constantly. Its main function is thus "to promote liquidity for the owners of existing securities."[902]

By mobilising the fungible parts of a credit the borrowers can be provided with long-term credit whereas the lenders are, at the same time, provided with liquidity. As long as there are other people on the stock market who are ready to hand over their savings for these parts, it will always be possible to sell the securities and thus to be forearmed in case of surprises. One must, however, not forget the downside of mobilisation. Sometimes, for instance during an economic crisis, the secondary market

[897] See ibid. (p. 123).
[898] See Santomero/Babbel (1997, p. 434).
[899] Ibid. (pp. 455 f.)
[900] Ibid. (p. 423), similarly Fabozzi/Modigliani (2009, p. 123).
[901] See Schmidt H. (1993, p. 333), Shim/Constas (2001, p. 103).
[902] Santomero/Babbel (1997, p. 423), see also Kohn (2004, p. 28), Huerta de Soto (2009, p. 460)

ceases to be liquid. Thus, the lender incurs the risk that he will not be able to sell the securities without some loss.[903]

19.2.3 Term transformation

Another way of bringing short-term lenders and long-term borrowers together is performed by some financial intermediaries, most notably banks. The banks accomplish the transformation by borrowing short-term from its creditors and lending the money out to its debtors long-term.[904] Thus the original savers are provided with liquidity and the final borrowers with long-term finance. Term transformation serves the interest of both these parties. Furthermore, as Bagus and Howden add, it is also profitable for the banks.

> As the yield curve is normally rising, there is an incentive for entrepreneurs to arbitrage this price disparity. There is a profit opportunity by borrowing short at low interest rates and investing long at a higher rate.[905]

Yet, it might be argued that also the banks are in need of permanent savings. If they lend out money for, say, ten years they are in need of being financed for this whole period. In that their capital rests mostly on short-term loans, they run the risk of becoming illiquid if its creditors do not prolong their loans and no successors can be found.[906] The *golden rule of banking* rests on this consideration.[907] In the words of Otto Hübner:

[903] See Schmalenbach (1951, p. 124).
[904] See Fabozzi/Modigliani (2009, p. 26).
[905] Bagus/Howden (2010, p. 73), see also Bagus/Howden (2011, pp. 7 f.).
[906] See Bagus/Howden (2010, p. 73).
[907] See Schneider D. (2001, p. 763).

> [O]ne cannot loan out long-term funds on the basis of short-term borrowing without running the risk of not being able to pay back the latter. […] [Banks] have acted and continue to do so, despite all the nimbus of solidity they surround themselves with, like a speculator who sells short in divesting stock that was entrusted to him for storage in the believe that he will be able to replace it at any time when delivery is demanded.[908]

Hübner consequently calls for the golden rule according to which banks may not lend out credit that is longer than the credit they receive. If a bank does so, "it warrants something which it does not have itself."[909] This point is still upheld, and with the same argument, by some economists in a recent debate. According to William Barnett II and Walter Block it is "fraudulent […] when there is a mismatch between the bank's borrowing and lending, such that it borrows short and lends long." They argue that, in such a case, there is an "over determination of property titles" at hand. When, for example, 100 dollars that have been borrowed short become due, "[t]here are not one, but *two* people with a valid claim for that $100." First of all, they continue, there is the saver who lent the 100 dollars to the bank for a short period. And then there is the borrower who was told by the bank that these monies are not due back until the end of a longer period. "There is thus a logical incompatibility in this scenario."[910]

Now, these economists would be correct in merely having *concerns* about maturity mismatching. Like mobilisation, also term transformation has a downside. The financial intermediaries must rely on correct anticipations of the future availability of savings if they want to continually roll over their borrowings.[911] This, as Bagus and Howden admit, "is a very risky business"[912] and "carries the danger of insolvency."[913]

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[908] Hübner (1854, p. 29)
[909] Ibid. (p. 59)
[910] All quotes from Barnett/Block (2008, p. 3 of the article, emphasis by Barnett/Block).
[911] See Bagus/Howden (2010, p. 73), Bagus (2010, p. 7).
[912] Bagus/Howden (2009, p. 5 of the article)
[913] Bagus/Howden (2011, p. 10).

Yet, there is no reason to suppose that, in normal circumstances, bankers act in a systematically imprudent way and lend out more long-term credits than they can reasonably expect to be able to finance by means of short-term debt.[914] As Philipp Bagus demonstrates, *systematic* mistakes in maturity mismatching only occur in case of an artificial credit expansion.[915]

To sum up, bringing short-term lenders and long-term borrowers together in any case implies a risk. The possibility of mobilising credits rests on the existence of a liquid secondary market consisting of ready savers. The risk is incurred by the lenders as the market price of their securities might decrease after they have invested their savings. The possibility of term transformation rests on the permanent replenishment of short-term savings. The risk is incurred by the banks as they might become insolvent when their liabilities cannot be rolled over.

19.3 Concluding remarks on the financial market

It might be helpful to sum up the main results of part III. After the second part was dedicated to the real processes that underlie the cash flows on the financial market, the third part focused on the cash flows themselves. The main purpose was to find the connection between them and the subsistence fund that we have shown to be the "real" object of the financial market.

In order to do this, we had to analyse money and its purchasing power in depth. At first, we have ignored the real processes and concentrated on the way how businessmen in the market economy orientate their actions by money and money prices. Business calculation, especially capital accounting, could be demonstrated to be in accordance with the logic of human action. Capital in business accounts is nothing else

[914] See Bagus (2010, p. 7).
[915] See ibid. (pp. 9 ff.).

than a numerical expression of the monetary costs that have been incurred by an enterprise in order to earn revenues.

Later on, we have established a connection between money and the subsistence fund. The analysis of the purchasing power of money has brought to light that the only purchasing power of money that counts is its power to buy consumers' goods. Nobody demands money because it buys other goods like producers' or intermediate goods. Even businessmen are not interested in the latter purchasing power of money. Money is only accepted in payment because it buys consumers' goods.

It was concluded that the capital in business accounts and the cash flows on the financial market bear a close relationship to the subsistence fund. The money loans that are traded on the financial market constitute power to purchase consumers' goods. Only with the help of consumers' goods, or with the power to acquire consumers' goods, it is possible to finance the economy. In the end, the financial market is the market for the subsistence fund. Capital in the balance sheets signifies the amount of the subsistence fund that has been channelled through the respective enterprises. Capital accounting helps to determine whether the past sacrifice of potential consumption is outweighed by the resulting power to consume.

Part IV: The theory of the business cycle and the German crisis of 1873

20. Natural and artificial financing

So far we have assumed a constant supply of money. Due to this assumption we were able to analyse the formation of the purchasing power of money, as well as the financing of the economy by means of money savings, without the necessity of considering effects that stem from an alteration of the quantity of money. Anything could be financed only by means of savings, and savings presupposed the sacrifice of potential consumption. To express it in Angel Rugina's words, we were dealing with "*natural* financing."[916] We will now relax this assumption. In doing this, we come closer to our present monetary system where the money supply has become a policy variable. Today some actors, especially the central and the commercial banks, are able to create money without anybody being in need of incurring a discernable sacrifice. This money can be employed in the business sphere to finance production apparently without provoking any psychic costs in the consumption sphere. This way of financing the economy Rugina calls "*arbitrary*" or "*artificial* financing."[917] The following chapters will show that the theoretical results of the foregoing parts can be applied to explain problems that arise in a world where artificial finance exists.

First of all, it will be demonstrated that our results are compatible with a theory that deals with the problems of our present monetary system. In 1974 Friedrich von Hayek has been awarded the Nobel Price in economics for his contributions to the circulation credit theory of the trade cycle. To the present day this theory, first developed by Ludwig von Mises, is one of the central themes in Austrian Economics. For this reason, it is very often called the "Austrian" theory of the business cycle (ABCT). It is important to us because it can be made compatible with our analysis of the last two parts. Indeed, many thoughts that we have presented stem from expositions

[916] Rugina (1949, p. 109, emphasis by Rugina)
[917] Ibid. (p. 110, some emphasis added)

of this business cycle theory. It is mainly concerned with the link between the financial and the "real" sector, or, as one might also say, between the private and the social notion of capital. Its principle examination object is the expansion of *circulation credit*. Although the latter originates in the *financial* market, it has devastating effects on the *real* economy. An investigation will bring to light that also in the Austrian business cycle theory credit on the financial market has the function to allocate the available power to purchase consumers' goods, or, shortly, the subsistence fund.

In order to understand the ABCT it is necessary to grasp a distinction between two different kinds of credit first made by Ludwig von Mises.[918] The first one, the *commodity credit*, corresponds to our notion of credit. It involves an exchange of present goods for future goods.[919] Credits of this kind are

> characterized by the fact that they impose a sacrifice on that party who performs his part of the bargain before the other does – the foregoing of immediate power of disposal over the exchanged good.[920]

Thus, this kind of credit is related to what Rugina terms "*natural financing*." Concerning money, commodity credit means an exchange of present money against a claim on future money.

The second kind of credit Mises calls *circulation credit*. It stems from the power of banks to lend additional money into existence. It is not necessary to go into the details of fractional reserve banking here. That this kind of banking is able to create additional credit via lending out its own bank notes (in earlier times) or demand deposits that are at any time convertible into money is generally accepted by

[918] See Gentier (2003, p. 46).
[919] See also Mises ([1912] 1953, p. 264).
[920] Ibid. (p. 264)

economists.[921] The phenomenon is called money multiplier. Mises's point is that this kind of credit creation causes nearly no costs to the issuing bank. This

> group of credit transactions is characterized by the fact that in them the gain of the party who receives before he pays is balanced by no sacrifice on the part of the other party.[922]

Circulation credit is not a proper credit transaction, at least according to Mises's (and our) definition, as "the essential element, the exchange of present goods for future goods, is absent."[923]

> If a creditor is able to confer a loan by issuing claims which are payable on demand, then the granting of the credit is bound up with no economic sacrifice for him.[924]

To use Rugina's terminology, circulation credit constitutes *artificial finance*. Chapter 21 is dedicated to the consequences that the latter kind of credit brings about in the real sector. In accordance with the ABCT it can be shown that additional circulation credit makes the entrepreneurs behave as if the amount of the available subsistence fund had increased.

However, we will demonstrate that the ABCT is not always expounded homogeneously. For some Austrian economists, indeed, "consideration of the subsistence-fund is essential to a complete and richly-textured understanding of the business cycles."[925] Others, however, do not think the "subsistence fund" to be a very

[921] See Huerta de Soto (2009, pp. 182 ff.), Belke/Polleit (2009, pp. 29 ff.), Dornbusch et al. (2008, pp. 395 ff.).
[922] Mises ([1912] 1953, p. 264)
[923] Ibid. (p. 269)
[924] Ibid. (p. 265)
[925] Sechrest (2002, p. 3)

helpful tool in economic analysis.[926] It will be shown that those versions of the ABCT that run in the terms of the subsistence or wages fund are superior to those that use different concepts.

After the compatibility of our results with the circulation credit theory of the business cycle has been demonstrated, we will, in chapter 22, illustrate our findings by reference to the German economic crisis of 1873. The latter suggests itself for closer examination because the boom preceding the crash had been fed by artificial financing to a high degree. The episode is chosen as examination object for two more reasons. Firstly, most of the other historical episodes where boom-bust-cycles occurred have already been studied by economists endorsing the circulation credit theory of the trade cycle. For the crash of 1873, so far nobody has compiled and analysed the data from this point of view. Thus, the following discussion contributes to the historical substantiation of the ABCT. The second reason why the crisis of 1873 is analysed in detail concerns its actuality. Although this crisis, together with its causes and consequences, seems to belong to the long distant past, it shares some characteristics with the current financial crisis broken out in 2007. Most notably, the then accounting rules concerning the valuation of assets resemble the modern *fair-value-principle*. In the decades leading to the crash, legislation had deviated from the traditional rules of realisation and lower-of-cost-or-market. In the following boom, the newly introduced rules fuelled the exuberance of the time created by the credit expansion. Also, they made it easier for treacherous persons to exploit the infatuated public – the outstanding feature of the episode. All in all, they had a de-stabilising effect on the economy. The understanding of the impact these rules had on the economy might help to evaluate the modern tendency of implementing the fair-value-principle.

[926] See Kirzner (1996, pp. 84 f.).

21. The circulation credit theory of the business cycle and the subsistence fund

21.1 Exposition and development of the theory

21.1.1 The exposition in Mises's Theory of Money and Credit in 1912

The first exposition of the circulation credit theory of the business cycle theory goes back to 1912. Ludwig von Mises expounded it rather shortly in his habilitation treatise entitled *Theorie des Geldes und der Umlaufsmittel* [Theory of Money and Fiduciary Media].[927] In its original version, the theory can very easily be reconciled with our discussion on the nature of the financial market and its link to the "real" economy. As was already mentioned in the part on the social notion of capital, also Mises stresses the importance of the fund of consumers' goods – the *subsistence fund* – when it comes to determine the possible length of the production processes.

> The period of production […] must be of such a length that exactly the whole available subsistence fund is necessary on the one hand and sufficient on the other for paying the wages of the labourers throughout the duration of the productive process. For if it were [longer][928], all the workers could no longer be provided for throughout its whole course, and the consequence would be an urgent offer of the unemployed economic factors which could not fail to bring about a transformation of the existing arrangement.[929]

In accordance with our theory, he further states that the "national subsistence fund is necessarily altered by the increase of savings."[930] Thus savings, in influencing the subsistence fund, determine the way production is organised in the economy:

[927] Mises (1912), translated as "The Theory of Money and Credit" (Mises [1912] 1953).
[928] Mises here says "shorter" which must be a typo.
[929] Mises ([1912] 1953, p. 360; 1912, p. 428)
[930] Mises ([1912] 1953, p. 347)

> A lengthening of the period of production is only practicable […] when either the means of subsistence have increased sufficiently to support the labourers and entrepreneurs during the longer period or when the wants of producers have decreased sufficiently to enable them to make the same means of subsistence do for the longer period.[931]

The size of the subsistence fund is hereby indicated to the entrepreneurs by the rate of interest such that an increase of the fund leads to a decrease of the interest rate. In consequence, "a reduction of the rate of interest […] must necessarily lead to a lengthening of the average period of production."[932]

Now, according to Mises, the injection of additional circulation credit influences the economy in a totally different way than commodity credit. Whereas the latter does not cause any systematic problems, the existence of circulation credit causes the whole boom-bust cycle. In expanding the amount of circulation credit, the banking system decreases interest below the rate that is indicated by the amount of savings.[933] So despite the fact that the subsistence fund has not increased, i.e., that "there is no possibility of lengthening the average period of production", nonetheless "a rate of interest is established in the loan market which corresponds to a longer period of production."[934]

Now, the entrepreneurs, when they evaluate the profitability of the different production processes, do not orientate themselves by the size of the subsistence fund, which they cannot observe, but by the interest rate. In creating the illusion of the profitability of new investment possibilities – creating longer production processes – "[c]redit expansion initially can produce a boom."[935] However, as the subsistence fund

[931] Ibid. (p. 361)
[932] Ibid.
[933] See ibid. (pp. 361 ff.).
[934] Both quotes from ibid. (p. 362).
[935] Ibid. (p. 422)

has not increased at all, "there cannot be the slightest doubt as to where this will lead:"[936]

> A time must necessarily come when the means of subsistence available for consumption are all used up although the capital goods employed in production have not yet been transformed into consumption goods. […] The means of subsistence will prove insufficient to maintain the labourers during the whole period of the process of production that has been entered upon. Since production and consumption are continuous, so that every day new processes of production are started upon and others completed, this situation does not imperil human existence by suddenly manifesting itself as a complete lack of consumption goods; it is merely expressed in a reduction of the quantity of goods available for consumption and a consequent restriction of consumption. The market prices of consumption goods rise and those of production goods fall.[937]

So after the rate of interest has fallen because of the additional circulation credit and has caused a boom, at last a counter-movement sets in. With higher consumers' goods prices and lower production goods prices, the interest rate rises again.[938] It turns out that the increase of the subsistence fund has been an illusion. The banks might like to prevent the increase of the interest rate by expanding credit even further. But sooner or later the interest rate must rise even if there were no legal limits on the expansion of circulation credit. The reason is that, parallel to the other developments, the purchasing power of money will fall because of "the increase of the stock of money in the broader sense that is involved in the increase in the quantity of fiduciary media."[939] If the credit expansion kept on going, the purchasing power of money would fall further and further until one would reach

[936] Ibid. (p. 362)
[937] Ibid.
[938] See ibid. (p. 363).
[939] Ibid.

> the panic-like course of which there can be no bounds. Then the rate of interest on loans must also rise in a similar degree and fashion. Thus the banks will ultimately be forced to cease their endeavours to underbid the natural rate of interest.[940]

The consequence will be an economic crisis. Some of the longer processes of production have to be abandoned. With the higher rate of interest they cease to be profitable. A part of the new production goods "cannot be withdrawn and must therefore either be left entirely unused or at least be used less economically."[941] So, to quote Mises once more,

> there has been a loss of value. Economic goods which could have satisfied more important wants have been employed for the satisfaction of less important; only in so far as the mistake that has been made can be rectified by diversion into another channel can loss be prevented.[942]

To sum up, the circulation credit theory seems to be perfectly compatible with our own exposition of the role of credit and the financial market. According to the theory as contained in *The Theory of Money and Credit*, additional circulation credit creates the illusion of an increase of the subsistence fund. Entrepreneurs behave *as if* this fund had been increased by savings out of income. *Thus, also in this theory, the function of money in the financial market is to transfer the power to purchase consumers' goods to the originary factors of production. Otherwise, the expansion of money lent to the business sphere would not create the illusion of a risen fund of consumers' goods.*

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[940] Ibid.
[941] See ibid. (p. 364).
[942] Ibid.

21.1.2 The business cycle theory in the hands of Richard von Strigl

It must be pointed out that even the 1912 version is not formulated unambiguously. As long as Mises employs the term 'means of subsistence,' it is clear what he is talking about. These means are definitely "available for consumption" and he contrasts them with capital goods.[943] But he also often employs the term "subsistence fund," of which it is not totally clear how he understands it. On the one hand, he seems to employ it synonymously to the "means of subsistence." On the other hand, he takes the term over from Böhm-Bawerk who wants it to include all kinds of goods, not only consumers' goods.[944] A point which indicates that Mises, at least sometimes, endorses this interpretation is the fact that, for him, the "quantity of metal available for industrial purposes,"[945] which definitely is no consumers' good, is part of the subsistence fund. Furthermore, at one point he even formulates his theory not in relation to either the subsistence fund or the means of subsistence, but to intermediate products:

> [D]espite the fact that there has been no increase of *intermediate products* and there is no possibility of lengthening the average period of production, a rate of interest is established in the loan market which corresponds to a longer period of production;[946]

To be sure, shortly after he has written this sentence he again speaks of the means of subsistence that are missing. However, it can be seen from the quotes given that, even in *The Theory of Money and Credit*, his theory does not always and consistently run in the terms of the subsistence fund as a fund of consumers' goods. At some places, also a different interpretation seems permissible.

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[943] See ibid. (p. 363).
[944] See Böhm-Bawerk (1921b, pp. 391 f.).
[945] Mises ([1912] 1953, p. 346)
[946] Ibid. (p. 362)

In contrast, Richard von Strigl is the economist who most consistently emphasises the connection between the allocation of the subsistence fund and the expansion of circulation credit. For him, money even *represents* the consumers' goods it can buy. And therefore

> all monetary capital represents actually available subsistence means, i.e., […] in offering monetary capital actual means of subsistence which can serve to support roundabout production methods are being made available.[947]

It is not necessary to go into the details of Strigl's exposition. A lot of his arguments have been incorporated in the exposition in the last two parts. I have tried there to heal what I consider to be the weak point of his theory: Money does not *represent* anything.[948] Apart from that his theory is, at least as far as concerns us, compatible with the exposition in *The Theory of Money and Credit* as presented above. He always highlights the role of the subsistence fund. Credit expansion makes entrepreneurs behave as if the available subsistence fund had increased. At the end of the boom the means of subsistence become scarce and many of the new projects have to be stopped.

21.1.3 Further development of the theory by Mises up to 1936

It must be noted that Mises has changed the exposition of the theory in question over the years. It has been shown that even the 1912 version is not formulated unambiguously. Now, in 1928 Mises further developed it. At this point he still uses the terms "subsistence fund" and "means of subsistence" as part of his explanation. He describes their role in the same way as in 1912:

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[947] Strigl (2000, p. 113)
[948] Hülsmann criticises this point not only generally (Hülsmann 1996a, pp. 25 ff.), but also in relation to Strigl (Hülsmann 2000, pp. xxiv ff.).

> Roundabout methods of production can be adopted only so far as the means for subsistence exist to maintain the workers during the entire period of the expanded process. All those projects, for the completion of which means are not available, must be left uncompleted, even though they may appear technically feasible—that is, if one disregards the *supply of capital*.[949]

One could imagine from this quote that he uses "means of subsistence" and "capital" synonymously. And indeed, he even writes that

> [i]n a given economic situation, the opportunities for production, which may actually be carried out, *are limited by the supply of capital goods* available.[950]

Shortly afterwards, he employs the terms "existing resources,"[951] "subsistence fund,"[952] and "funds"[953] to express the same idea. It is not clear what he wants monetary savings and credit to mean in real terms.

Although there are some terminological inaccuracies, up to 1928 Mises's explanation of the business cycle still runs in terms of a "subsistence fund", however defined, that does not suffice in case of projects that only seem profitable because of credit-expansion. In the following years, Mises changes his formulation of the theory and abandons the term "subsistence fund" altogether in connection with capital or business cycle theory. In 1931, in an admittedly very short formulation of the theory, he only mentions "resources" as the decisive factor without any detailed explanation of this term.[954] In 1936, it is neither the subsistence fund, nor the means of subsistence, that limit the length of the production period. Instead,

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[949] Mises ([1928] 2006, pp. 110 f., emphasis added)
[950] Ibid. (p. 110, emphasis added)
[951] Ibid. (p. 111)
[952] Ibid.
[953] Ibid. (p. 112)
[954] See Mises ([1931] 2006, p. 162).

> [t]he material means of production and the labor available have not increased; all that has increased is the quantity of the fiduciary media which can play the same role as money in the circulation of goods. The means of production and labor which have been diverted to the new enterprises have had to be taken away from other enterprises. Society is not sufficiently rich to permit the creation of new enterprises without taking anything away from other enterprises. As long as the expansion of credit is continued this will not be noticed, but this extension cannot be pushed indefinitely.[955]

Here it is the means of production and labour that are not available in sufficient quantities. He also states that society is not "rich" enough, not specifying if this expression is supposed to correspond to the "material means of production and the labor available", or to something else. It has to be said that also this quotation is taken from a minor publication. But still it shows that something has changed. The subsistence fund is not mentioned here at all.

21.1.4 The exposition of the business cycle theory in Human Action

The important question is how Mises formulates his theory in his *magnum opus Human Action* of 1949. There he also develops his capital theory, and so it suggests itself that an analysis of this book will help to clarify the interrelation between the terms in question. In earlier publications Mises treated the issues of capital theory only randomly.

Although, as will be shown below, Mises significantly alters the exposition of the circulation credit theory, he does not forget about the "means of subsistence" altogether.

[955] Mises ([1936] 1996, p. 29)

> People eager to embark upon processes with a longer period of production must first accumulate, by means of saving, that quantity of *consumers' goods* which is needed to satisfy, during the waiting time, all those wants the satisfaction of which they consider more urgent than the increment in well-being expected from the more time-consuming process.[956]

On the same page he explicitly calls these consumers' goods "means of subsistence," so far as they are used to pay labour. So, in a nutshell, he still says that the means of subsistence are the prerequisite for a lengthening of the period of production. In his *Nationalökonomie*, the German-language predecessor of *Human Action*, he specifies this thought in saying that these means serve to free [freimachen] original and produced means of production from being employed in shorter ways of production.[957]

It might be inferred from this quote that Mises still argues in the same line as 1912. Yet, he does not use this concept continuously when he comes to explain the business cycle. In his earlier works, as we have seen, it was the "subsistence fund" that limited the length of the production processes. An artificial lowering of the interest rate induced the entrepreneurs to embark upon unsustainable ("too long") production processes. In *Human Action*,

> the drop in interest rates falsifies the businessman's calculation. Although the amount of *capital goods* available did not increase, the calculation employs figures which would be utilizable only if such an increase had taken place.[958]

So the entrepreneurs do not act as if the subsistence fund had increased, but as if the amount of capital goods had increased. He restates this point a few pages later:

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[956] Mises (1949, p. 488)
[957] See Mises (1940, p. 450).
[958] Mises (1949, p. 550, emphasis added)

> A further expansion of production is possible only if the amount of capital goods is increased by additional saving, i.e., by surpluses produced and not consumed. The characteristic mark of the credit-expansion boom is that such additional capital goods have not been made available. The capital goods required for the expansion of business activities must be withdrawn from other lines of production.[959]

Obviously, the limiting factor here is the capital goods. In this point he differs from his earlier expositions. However, he tries to integrate both phenomena, scarce means of subsistence and scarce capital goods, in his explanation. He also echoes his earlier formulations by saying:

> Production has been altered in such a way that the length of waiting time has been extended. But the demand for consumers' goods has not dropped so as to make the available supply last for a longer period.[960]

With this integration of capital and consumers' goods Mises simply employs Böhm-Bawerk's concept of the subsistence fund that consists of both capital goods and consumers' goods. Anyway, the *decisive* factor that marks the turning point of the business cycle is the scarcity of capital goods, not of consumers' goods:

> [The entrepreneurs] embark upon an expansion of investment on a scale for which the *capital goods* available do not suffice. Their projects are unrealizable on account of the *insufficient supply of capital goods.* They must fail sooner or later.[961]

[959] Ibid. (p. 554)
[960] Ibid. (p. 553)
[961] Ibid. (p. 556, emphasis added.)

To sum up our findings so far: In his earlier works Mises stresses the importance of the subsistence fund, though not clearly defining it. Later on, roughly since the thirties of the last century, he starts to stress different ideas more strongly. Though he still recognises the importance of the means of subsistence, he doesn't think these to be the only, or at least the main, limiting factor for an expanding of production. Rather the capital goods gain prominence.

Now, to derive an exact notion of how he thinks the business cycle to elapse in his later writings it is necessary to understand what he exactly means by capital goods. On one occasion in the third edition of *Human Action*, Mises defines capital goods as

> either intermediary stages in the technological process, i.e. tools and half-finished products, or goods ready for consumption that make it possible for man to substitute, without suffering want during the waiting period, a more time-absorbing process for another absorbing a shorter time.[962]

But, as shows the following quote taken from the same edition, capital goods as just defined are not scarce at all at the appearance of the crisis:

> However, raw materials, primary commodities, half-finished manufactures and foodstuffs *are not lacking* at the turning point at which the upswing turns into the depression. On the contrary, the crisis is precisely characterized by the fact that these goods are offered in such quantities as to make their prices drop sharply.[963]

This is exactly the opposite of what he says in the passages quoted before where he maintains that capital goods are the bottleneck at the turning point of the business cycle. However, we will not evaluate Mises's business cycle theory on the basis of the

[962] Mises (1966, p. 260)
[963] Ibid. (p. 560, emphasis added)

definition just quoted. It does not appear in the first and apparently most stringent[964] edition of *Human Action*. And there he has a different concept in mind when he states that the supply of capital goods is insufficient in the crisis, namely the following: "We may acquiesce in the terminologica1 usage of calling the produced factors of production *capital goods*."[965]

21.1.5 Capital goods as the limiting factor?

Unfortunately, Mises does not explain why he thinks that the fact that credit expansion leads entrepreneurs to calculate as if the *amount of capital goods* had increased causes the business cycle. In order to see that *the scarcity of capital goods cannot produce a bust*, let us assume that the entrepreneurs have indeed been counting on a large supply of capital goods. At some point, they realise that their expectations have been flawed. The price of capital goods rises. Now, it is true, this development will increase the costs of those entrepreneurs who need these goods as input. Those entrepreneurs might indeed have to stop or bring down business.

However, it must be remembered that capital goods, in the definition given by Mises himself, are produced means of production. If they become scarce, their supply can be increased by simply producing them. Thus the rise of capital goods prices will simultaneously establish new profit opportunities. Entrepreneurs will be eager to produce them. Their supply should therefore increase and their prices decrease again. There is no problem with this solution unless something might hinder the production of capital goods. This occurs when such an undertaking appears unprofitable to the entrepreneurs. But the fact that it is unprofitable to produce a good cannot signify its "insufficient supply." Rather the opposite is true. To sum up, the scarcity of capital

[964] See Herbener et al. (1998, pp. xx ff.).
[965] Mises (1949, p. 263, emphasis by Mises)

goods can be healed by producing them. When it is unprofitable to produce them they are not scarce.

It is different when the savings, that is, the available fund of consumers' goods becomes scarce. As against capital goods, this fund cannot be *produced*. As we have seen in the first part, every kind of action involves the incurrence of a consumption sacrifice. In other words, consumers' goods must be there in order to be able to finance production. Of course, *also the production of consumers' goods presupposes the antecedent availability of consumers' goods*. Thus, one cannot argue that the scarcity of consumers' goods can be overcome by producing them. This would be circular reasoning. Instead, the fund of consumers' goods can only be increased by *saving*. And if the savings are not enough to finance the actual production processes, the interest rate will rise and many projects will become unprofitable. Businessmen themselves can do nothing to prevent this consequence as long as people do not save more.

Thus we find that the limiting factor at the turning point of the cycle must be the available subsistence fund. During the credit expansion, the banking system has created additional power to purchase consumers' goods which created the illusion of an increase in this fund. Those versions of the ABCT that do not or not only run in terms of the subsistence fund must therefore be looked upon critically. At this place we are not going to examine all versions of the ABCT. Suffice it to say that nearly no author confines oneself to an exposition in the lines of the subsistence fund. To give only two examples: In the analysis of the followers of Hayek, the expansion of circulation credit creates the illusion of additional gross savings.[966] We have already shown that this concept is arbitrary. It is merely connected to the payment practices and habits of the businessmen. Roger Garrison, in turn, employs the terms loanable funds,[967] investable

[966] See Huerta de Soto (2009, p. 358)
[967] See Garrison (2001, p. 36).

resources,[968] or investable funds[969] when he speaks of savings. He explicitly states that these concepts are not identical with a "stock of consumption goods."[970] Consequently, what makes itself felt at the turning point of the business cycle are "[r]esource scarcities."[971] This terminology evades the problem at hand.

21.2 The effect of a credit expansion on the price system

21.2.1 The leverage effect

In chapter 22, what has been said about the circulation credit theory of money will be illustrated by means of historical data. Before this can be done, we have to enlarge upon the question of how exactly a credit expansion affects the economy. Particularly with regard to an empirical analysis it is necessary to obtain criteria which can easily be observed in the data. As the additional credit has effects on the price system, and as price data is relatively easy to obtain, it might be helpful to expound in detail how the credit expansion is supposed to affect the price system. This will be done in the present section.

When the banking system lends additional money into existence it enters the loan market and decreases the interest rate there. In normal times this is the signal for the entrepreneurs that more savings can be used in the business sphere to be paid out as income or profit. As was explained in part III, with a lower interest rate the entrepreneurs will by tendency switch from consumers' good production to producers' good production.[972]

To be precise, the adjustment process will proceed in a special way. The credit expansion will directly decrease the interest rate for debt capital only, not for equity

[968] See ibid.
[969] See ibid. (p. 72).
[970] Ibid. (p. 36)
[971] Ibid. (p. 72)
[972] See also Rothbard ([1969] 1996, p. 83).

capital. The corresponding change in the production structure is hereby set in motion by the economic calculation of the businessmen who want to profit from this situation.[973] First of all, *all* kinds of businesses will see their profitability increase, no matter whether they produce consumers' goods, producers' goods, services, or raw materials. The reason is that all of them are in need of permanent capital. And as less has to be paid for interest on liabilities because of the credit expansion, more profit on equity capital can be expected in every kind of durable enterprise. Furthermore, it becomes profitable to employ more leverage in order to exploit this effect.[974] All enterprises will by tendency expand business, i.e., spend more on inputs, as long as the higher profit rate persists. In short, "[t]here is a general excess of demand over supply – all is saleable and everybody can continue what he had been doing."[975] A boom begins.[976] In consequence, the prices of inputs, both originary factors and intermediate goods, will rise until the profit rate on equity is more or less equal to the artificially lowered interest rate.

21.2.2 The accumulation of the leverage effect within one enterprise

This general effect – the increase of profitability in all kinds of business that induces entrepreneurs to invest – *accumulates* the longer the incurrence of costs precedes the emergence of revenues,[977] that is, the longer capital is bound up. To illustrate this point, let us first have a look at a single enterprise. The longer the time span between its costs and its revenues, the larger the effect of a reduction of the interest rate. Suppose a company that buys an asset today and sells it tomorrow. The amount of interest for borrowed capital that it has to deduce from the revenues of the

[973] See Mises (1949, p. 550).
[974] See Strigl (1928, p. 192).
[975] Hayek ([1970] 1996, p. 100)
[976] See Mises (1949, p. 550).
[977] See Strigl (1928, p. 194).

sale is nearly negligible, even if the company should happen to be highly leveraged. A decrease of the interest rate, then, would also have a negligible effect on the price of the asset. The small amount of interest payment is reduced some more, it is true, but this will not induce the entrepreneur to spend much more on the respective asset.

Suppose instead a company that buys an asset, say, a smelting furnace, that lasts for 20 years. This asset implies a huge amount of costs that brings about revenues only within a considerable period of time. Therefore, interest payments for capital borrowed to enable the purchase of the furnace will accumulate over the years to a considerable amount. In this case, a decrease in the interest rate has a perceptible influence on the profit on equity that can be had by means of the furnace. As now more profit can be made with these long-living assets if bought on credit, competition will lead to an increased demand for these types of goods that, in the end, will increase their prices and bring their profit rate down to the artificially lowered market rate of interest. It must be added that this effect also influences the price of durable consumers' goods, especially of houses. Houses also last for many years, and interest on borrowed capital very often accumulates to an impressive amount. The lowering of the interest rate accordingly has a large effect on the monetary or psychic profit that can be had from buying or building houses on credit. People will be ready to expand their expenses on houses and will therefore raise their price considerably.

The reason why the prices of long-living assets go up during a credit expansion also works in all other areas where costs and revenues within one firm are separated by a considerable time span. In case of in-house production of the assets, also all goods that help to produce these long-living assets will face a higher demand. Think only of raw materials like coal and iron, or of workers that can be employed in producing the assets or the raw materials. Although the things mentioned are not long-living assets themselves, the expenses on them do lead to revenues only far away in the future.

Therefore, interest payments on these expenses reduce by a large amount if the interest rate decreases.

21.2.3 The accumulation of the leverage effect in the supplier stages

Until now we have been dealing only with the calculations of a single firm. For the latter, it becomes more profitable to employ and construct durable assets. Another important aspect consists in the regularly occurring fact that the input prices that are paid by one company form the revenue of another one producing the input. The latter company has to factor in *two* changes in its calculations. First, its revenues have increased as the demand for its product has risen. Second, like for all other enterprises, credit has become cheaper and therefore profit on equity rises as well. For this company in the supplier stage the credit expansion has two effects that both increase its profitability. It has a double incentive to expand business and to spend more on its inputs. That is, because of the double effect the prices of its inputs will rise even more than the prices of its output. By now it should be clear that the companies supplying *these* inputs face an even stronger incentive to expand business, as the effect multiplies once more. The leverage effect accumulates as we go up the supplier stages. Correspondingly, the input prices of the farther away supplier stages increase by a much higher degree than those of stages near to the production of consumers' goods. It is important to add that the multiplier effect just described is not confined to long living assets or goods that change hands several times until they reach the final stage. The increase of profit possibilities accumulates also in cases where inputs and outputs are different goods. When credit becomes cheaper and revenues increase – the double

effect explained above – more money will be spent on inputs no matter whether these are durable or not. Also here one might think of raw materials like coal and iron.[978]

We see, as the additional circulation credit enters the business sphere, it causes an overall boom. It changes the economic calculation of businesses in a way that leads them to increase investment in all stages of production. Industries that produce goods at the supplier stages will be affected more intensely by the described leverage effect and face an additional demand. They will therefore by tendency expand more strongly than other industries.

21.2.4 The leverage effect on the stock market

A further effect of an expansion of credit is a "dramatic and sustained overall growth"[979] of stock prices.[980] The reason is the same as for durable assets. As credit is cheaper, it seems profitable to spend more on a principally infinite series of dividends. The fact that shares are totally mobilised even creates the possibility of a feedback loop because it seems possible to realise the profits of their increased prices at every moment. Speculation will therefore proceed to buy shares not because of the dividends but because of these price increases and thus bid the prices higher and higher. In normal times, an exaggerated increase of stock prices is limited by the availability of credit.[981] However, if credit does not become scarce and interest remains low, stock prices can rise continually as there is always a liquid buyer who himself expects prices to rise even further.[982] The credit expansion

> allows securities with continuously rising prices to be used as collateral for new loan requests in a *vicious circle* which feeds on continual, speculative

[978] See Strigl (1934b, p. 182).
[979] Huerta de Soto (2009, p. 461)
[980] See Hahn (1960, pp. 313 ff.)
[981] See Machlup (1940, p. 92).
[982] See ibid. (p. 92).

> stock market booms, and which does not come to an end as long as credit expansion lasts.[983]

To sum up, an expansion of circulation credit leads to an overall boom. All prices increase by tendency, especially those of durable goods and of other input that is employed at higher stages of production. Furthermore, as profits can be gained easily on the stock and the asset markets during the credit expansion, "[s]hort-term thinking is rewarded at the cost of long-term thinking and a prudent, conservative entrepreneurial culture."[984] In the words of Philipp Bagus,

> work ethic declines and a culture of «no sacrifice» develops. Entrepreneurial energy is dedicated to making fast profits in the asset price markets. Wanting to earn money as quickly as possible, people fill their daily conversations with the latest asset price market news. They develop and acquire knowledge that helps them to participate in an asset price boom fueled by credit expansion.[985]

21.2.5 The reaction of the price system

As was explained in part III, all money that enters the business sphere is, in the end, supposed to be paid out to the owners of the originary factors of production or to the businessmen themselves. As long as the amount of money held by the businesses – the business money – does not increase by the same amount as the money supply, some of the additional money created by the credit expansion will enter the consumption sphere. In other words, the money incomes of the factor owners will increase.[986] This money, not to forget the increased profits of the entrepreneurs,[987] will be divided among

[983] Huerta de Soto (2009, pp. 461 f.), see also Bagus (2007, pp. 69 ff.), Belke/Polleit (2009, p. 453).
[984] Bagus (2007, p. 66)
[985] Ibid.
[986] See Rothbard ([1963] 2000, p. 11).
[987] See Mises (1949, p. 550).

consumption expenses and savings according to the wishes of the consumers.[988] As long as the consumers do not change their behaviour, which we have no reason to assume, they will divide their income on consumption and production in the same ratio as before.[989] That implies that the absolute amount spent on consumption will increase.[990] This point is what makes the circulation credit expansion differ from a credit expansion backed by savings. If the credit had rested on savings, overall consumers' spending would not change at all, or at least not in a large degree.

Now, at first sight, this difference does not seem to matter at all. Everything runs its proper course. On the one hand, an increase of the business sphere will make necessary a permanent inflow of new savings in order to counteract the losses that stem from entrepreneurial mistakes. This seems to be ensured as parts of the increased income will be saved and thus newly enter the business sphere. On the other hand, the extension of the business sphere will also bring about an addition to the need of maintained savings that have to be set free again regularly out of consumer spending. Also this point seems to be ensured because also consumer spending will rise, as we have already noted.

There will, however, be a further effect that hinders the expansion of the production structure to proceed as smoothly as just described. The additional circulation credit does not stem from savings. The rising consumer spending by the earners of the increased income is therefore not counteracted by less consumer spending of the savers, as in the case of credit backed by savings. Thus the whole process described above is followed up by another effect. As more will be spent on consumers' goods, the prices of the latter will start to rise.[991] In consequence, the rate of profit in the consumption industries will increase as well. It will become more

[988] See Hayek ([1935] 2008, p. 243), Rothbard ([1963] 2000, p. 11).
[989] See Rothbard ([1963] 2000, p. 11; [1969] 1996, p. 83).
[990] See Strigl (1934b, p. 175).
[991] See Mises ([1936] 1996, p. 28).

profitable to invest in these industries. The new savings out of income will therefore by tendency be channelled in their direction. In the following, there are two possibilities. Either the credit expansion has stopped by now. Then the companies situated more up-stream in the production structure will face an increase in the interest rate for new savings which will be hard to stand for some of them as their profitability rested on the cheap credit. They turn out to be malinvestments. "The size of business activities shrinks again. The boom ends because the forces which brought it about are no longer in operation."[992]

The second possibility consists in an on-going credit expansion.[993] Then the entrepreneurs will continue trying to make profits with the newly created credit. They will bid up the input prices further on until the whole price structure is adjusted to the higher consumers' good prices and the low interest rate. But in the course of this process, the incomes will increase once more. Only this time, they will rise by a higher rate. The reason is that, now, not only the credit newly injected in the business sphere is paid out as additional income or profit. One must not forget that also the profits in the consumer industries have risen as well because consumers had spent more.

The cycle will repeat itself once again. The additional income will be used to spend more on consumption. Yet, as just explained, income has risen at a higher rate. So will consumer spending and consequently consumers' goods prices and the profits of the corresponding businesses. If credit expands further, the other industries can adjust again to the higher prices. But this time, a higher amount of credit will be necessary to adjust as the consumers' goods prices have risen stronger. The longer the credit expansion lasts, the faster the prices of consumers' goods will rise and the more credit must be injected into the business sphere in order to allow the entrepreneurs to adjust their investments to the higher prices. At one point, this process has to stop.

[992] Mises (1949, p. 551)
[993] See Rothbard ([1969] 1996, pp. 85 f.).

Otherwise it "would lead to the crack-up boom and the breakdown of the whole monetary system."[994]

With the end of the credit expansion and the rise of the interest rate, the leverage effect turns around. Now especially those projects become unprofitable where the time-length between costs and revenues is long, that is, the employment and construction of durable assets. Also the supplier stages will be hit stronger by the reversion of the leverage effect. The movement of the corresponding prices will therefore also turn around and run in the opposite direction.

21.2.6 The movement of prices during the business cycle

To sum up our results: the circulation credit theory of the trade cycle expounds the effects of additional circulation credit on the economy in harmony with the theoretical discussion of the parts II and III. In regard to the discussion of the German crisis of 1873 in the next chapter, especially what has been said of the reaction of the price system is important. During the boom phase, the prices of durable assets and goods that are employed at supplier stages remote from the consumption stages increase by a greater amount than the prices of consumers' goods and goods near the consumption stages. Furthermore, the owners of the originary factors of production, most notably workers, earn more income for their services. After the crash, the foregoing developments change to the opposite. Especially the supplier industries face decreased demand for their products. The prices of the latter diminish to a higher degree than the prices of goods near the consumption stage. In consequence, their producers suffer higher losses than the consumption industries. The first part of the next chapter will show that the events of the German crisis of 1873 are actually compatible with the analysis provided here.

[994] Mises (1949, p. 552)

22. The German crisis of 1873

22.1 Theory and History

The boom-bust-cycle of the 1870's comprising the *Gründerzeit* and the subsequent *Gründerkrach* was one of the most important periods of German economic history. The term *Gründerzeit* stems from the numerous incorporations (*Gründungen*) that were the outstanding feature of the boom. The crash (*Krach*) marks the end of the heyday of classical liberalism in the German speaking countries.[995] At the time, the antecedent *laissez-faire* policy was made responsible for the numerous formations of unsound corporations during the *Gründerzeit*, and for the extraordinary amount of crashes in the following depression. Liberalism became discredited[996] and the anti-liberal movements gained the upper hand.[997] It is the task of this chapter to show that the liberal laws *themselves* did not *cause* the boom in any way as is still sometimes maintained.[998] As is worked out in section 22.2, the whole business cycle would not have been possible without the immense *expansion of artificial financing* that followed the defeat of France and the foundation of the German Reich in 1871. The later events can easily be explained by the Austrian Theory of the business cycle. But, as is argued in section 22.3, it is true that the liberal laws, especially corporation law, contained several flaws that contributed to the strength as well as to the direction of impact of the *Gründerkrach*. Especially the rules concerning the valuation of assets that resemble the modern fair-value-principle have to be mentioned in this regard. In order to demonstrate their impact, it will be necessary to go into detail and to make some observations on the development of corporation law in German trade law.

It should be clear from the outset that the following discussion is not supposed to *prove* or to *test* our interpretation of the circulation credit theory of money. In this, I

[995] See Kindleberger (1990, p. 77).
[996] See Wischermann/Nieberding (2004, p. 155).
[997] See Rosenberg (1967, pp. 62 ff.).
[998] See Wischermann/Nieberding (2004, pp. 155 f.).

follow Rothbard who, in his history of *America's Great Depression*, does not try to *prove* his theory, but only "to *describe and highlight* the causes of the 1929 depression."[999] He is of the opinion that

> historical facts are complex and cannot, like the controlled and isolable physical facts of the scientific laboratory, be used to test theory. There are always many causal factors impinging on each other to form historical facts.[1000]

This stance he adapts from Mises's work on the methodology of economics. The latter always emphasises the separation between theory and history. Whereas theory "aims at knowledge valid *for all instances* in which the conditions exactly correspond to those implied in its assumptions and inferences,"[1001] history deals with the "*concrete content* of human action."[1002] Therefore, Mises concludes, historical sciences "cannot teach us anything which would be valid for all human actions."[1003]

Accordingly, in the following sections we are not going to verify or falsify our theoretical statements. We are merely going to *illustrate* our theoretical statements by means of historical facts.

22.2 The circulation credit theory of the business cycle applied

22.2.1 The expansion of artificial financing

Before we go on to describe the fate of numerous corporations after the *Gründerkrach*, it is necessary to have a look at the ultimate cause of the whole boom-bust-cycle. Within the framework of the following deliberations it will be easier to

[999] Rothbard ([1963] 2000, p. xli, emphasis added), see also Rothbard (1951, p. 944).
[1000] Ibid. (p. xxxix)
[1001] Mises (1949, p. 32, emphasis added)
[1002] Ibid. (p. 30, emphasis added)
[1003] Ibid.

understand the excesses that occurred in the context of incorporations and the corresponding speculation.

The German monetary system of the sixties and early seventies was not as uniform as it is today. The *North German Federation* consisted of more than twenty states, several of which had their own currency. At the time of its foundation, the *German Reich* still contained seven currency areas.[1004] In addition, a lot of older coins and foreign currencies were still in use,[1005] and, until the unification, many states had issued state notes that continued to circulate.[1006] Furthermore, at the time of the *Gründerzeit* there existed 33 note issuing banks, the so-called *Zettelbanken*.[1007] Also deposit banking appears to have been widely accepted. According to Wagner, legislation nearly generally sanctioned or at least tacitly tolerated that note issuing banks also operated in deposit banking.[1008] The standardisation of the currency was achieved only in 1876 when the gold standard was finally introduced.[1009]

As the monetary system was quite complicated,[1010] it is not easy to say exactly how much money circulated at the time. What follows is data taken from several historical studies that deal with this problem. Table 1 shows the development of the money supply from 1868 to 1875. It does not contain the amount of state notes as there could not be found annual data. The only thing that can be said about these is that their amount was not very significant. In 1865, it was 105 million Marks, in 1872 184 millions, and in 1876 it was back to 128 millions.[1011] So from 1865 to 1872, the amount of state notes increased by 75.2 percent, whereas the amount of coin, bank notes and

[1004] See Weigt (2005, p. 32), Baltzer (2007, p. 51).
[1005] See Pohl (1982, p. 100).
[1006] See Sprenger (1981, pp. 73 ff.).
[1007] See Weigt (2005, p. 32), Baltzer (2007, p. 51).
[1008] See Wagner (1873, p. 375).
[1009] See Weigt (2005, p. 33).
[1010] See Pohl (1982, p. 100).
[1011] See Hoffmann (1965, p. 814).

deposits together only rose by 72.6 percent. Thus, by ignoring state notes the growth rate of the money supply is underestimated a little bit.

Year	Coin	Notes	Deposits	Total	Growth rate in percent
1868	1821	684	1245	3750	3.65
1869	1837	703	1341	3881	3.49
1870	1851	854	1429	4134	6.52
1871	1885	1074	1605	4564	10.40
1872	2189	1378	2117	5684	24.54
1873	2472	1368	2648	6488	14.14
1874	2517	1325	2871	6713	3.47
1875	2551	1054	3047	6652	-0.91

Table 1: Coins and bank notes circulating and bank deposits in the area of the German Reich in million Marks
Sources: Hoffmann (1965, p. 814), Spree (1977, p. 374), and my own calculations.

In the midst of the boom, the money supply soared by nearly 25 percent in one year. But it is interesting to note that contemporary and later writers do not argue very clearly on this point. No matter whether they consider the banks to be guilty of overproduction of money[1012] or not,[1013] they all concentrate on the circulation and backing of bank notes only. Table 1 shows their circulation which increased by 61 percent from 1870 to 1872. On the other hand, as is shown in table 2, the percental reserves for the notes also increased and were nearly at two thirds at the peak of the boom. Concerning the backing of notes the banks were quite sound in this period.

[1012] See Oechelhaeuser (1876, pp. 52 ff.), Tellkampf (1876, p. 3).
[1013] See Wagner (1873, p. 720), Kindleberger (1990, p. 75).

Year	Backing of bank notes in percent	Backing of bank notes plus bank deposits
1868	56.3	20.0
1869	49.7	17.1
1870	49.2	18.4
1871	65.3	26.2
1872	62.8	24.8

Table 2: Backing of bank notes by bullion and coin
Source: Wagner (1873, p. 720), Sprenger (1981, p. 73), and my computations

However, as Oechelhaeuser mentions in passing, the reserves not only had to suffice for the notes, but also for the deposits of the banks.[1014] Table 2 shows that the backing of bank notes and deposits together only amounted to about 25 percent.[1015] Still, one has to admit that the reserve ratio increased during the boom time. The original reason for the increase of the money supply and the credit expansion must therefore not be looked for in the banks becoming more unsound over the period, but somewhere else.

Now, it was demonstrated in chapter 21 how additional circulation credit affects the economy and causes the business cycle. The main point was that additional credit appears on the financial market as power to purchase consumers' goods. As a result, entrepreneurs adapt their plans and expand business in an unsustainable way. In essence, this is also what happened in the *Gründerzeit*. However, in order to understand how exactly this came about it is necessary to have a look at the particularities of the time.

During the episode in question, two factors made the entrepreneurs think that the power to purchase consumers' goods has increased. Of these, the first one was not an expansion of circulation credit in the proper meaning of the word. One of the most prominent events of the time was the defeat of France in the *Franco-German War* of 1870/71. In the following years, France had to pay around 5.57 billion Francs or 4.45

[1014] See Oechelhaeuser (1876, pp. 70 f.).
[1015] Based on the data given by Tilly (1972/73, pp. 347, 359 f., together with 344), the ratio between metal bank reserve and bank notes plus deposits has grown from 13 to 19 percent between 1870 and 1873.

billion Marks as reparations,[1016] a large fraction of which in coin.[1017] The money had to be paid in instalments until March 1874,[1018] but in the end this was done faster so that in autumn 1873 the last instalment was paid.[1019] With the French billions, the German governments paid back war loans as well as some older loans.[1020] The former creditors of the German governments were consequently looking for new investment possibilities,[1021] and thus, as is generally asserted, giant sums entered the German financial market.[1022] Also the Austrian market was strongly affected.[1023] According to Kindleberger, one billion Marks of German state securities were estimated to have been held in Austria.[1024] Hence it is not surprising that Austria also lived through a boom-bust-cycle in the early seventies. The following discussion only focuses on Germany, but the developments that took place in Austria do not differ to a great extent.

It is important to realise that this additional money had the same effect as if the banking system had increased the amount of circulation credit. As Angel Rugina notes, the reparations that France had to pay to Germany were *Beutegeld*, that is, prey money.[1025] "*Beutegeld* comes into existence when a country puts large amounts of precious metals or gold and silver coins into circulation which it has captured in acts of war with other countries."[1026] This money shares one important characteristic with circulation credit: *it is not bound up with a sacrifice on the part of anyone in the country where it is put into circulation*.[1027] Like if they had been circulation credit, the additional millions from the reparations that entered the German financial market

[1016] See Gömmel (1992, p. 153). See Weigt (2005, p. 10, n. 30) for several other, but similar statements in the literature concerning the amount of the reparations.
[1017] See Bamberger (1873, pp. 442 f.).
[1018] See Weigt 2005, p. 10).
[1019] See Blume (1914, p. 21), Baltzer (2007, p. 5).
[1020] See Kahn (1884, p. 187), Gömmel (1992, p. 154), Weigt (2005, p. 10), Meyer (2009, p. 331).
[1021] See Gömmel (1992, p. 154), Baltzer (2006, p. 5).
[1022] See Soetbeer (1874, pp. 36 ff.), Blume (1914, p. 20), Stolper (1964, p. 24), Weigt (2005, p. 10).
[1023] See Baltzer (2006, p. 5).
[1024] See Kindleberger (1990, p. 72).
[1025] See Rugina (1949, p. 106).
[1026] Ibid. (p. 72)
[1027] See ibid. (p. 73).

constituted *artificial finance* or *artificial credit*. They appeared as power to purchase consumers' goods and made entrepreneurs act as if the subsistence fund had immensely increased.

It might be argued that it is doubtful whether the *Beutegeld* has had this influence. After all, the coins that came in from France were not bound to stay in Germany. As soon as the prices in Germany would rise, one could say, the money would flow to other countries. The effect the additional money could have had in Germany must therefore be rather negligible or of a short-term nature. And indeed, an outflow of money actually occurred. It is true, some authors argue that the exchange rates made it impossible to invest the money abroad as long as the reparations were still paid.[1028] But after 1870 German imports started to surpass imports[1029] which indicates an outflow of money.

The argument has some merits. Indeed, the reparations have not just stayed in Germany but, of course, left the country towards cheaper regions. However, one must not forget that the reparations were paid over a period of several years. The money supply was constantly filled up again. During the period, there was a constant source of artificial finance available. To say that the reparations did not have any remarkable effect implies that the instalments left Germany within an infinitesimal period of time. As we are talking about metal, not about electronic money, this assumption does not seem to be very reasonable. And we must also keep in mind the figures given in table 1. The circulation of coin in Germany indeed rose by a noticeable amount while the reparations were being paid. The reparations actually were a source of artificial finance.

The second factor that made entrepreneurs behave as if the subsistence fund had grown can be found in the reaction of the German monetary system on the reparations. Although the banks increased their reserve ratio, the increase of coin circulation

[1028] See Soetbeer (1874, p. 51), Blume (1914, p. 21).
[1029] See Pohle (1923, p. 29).

because of the French reparations[1030] was still *multiplied*[1031] by the banking system, as can be seen in table 1.[1032] Bank notes circulation rose by 60 percent, deposits even by 85 percent from 1870 to 1873, whereas coin circulation only increased by 34 percent. So in addition to the reparations that partly entered the financial market, an enormous expansion of circulation credit through the banking system took place, especially in 1872.[1033] It might be argued that deposits have not been used as money in the same degree as it is the case today.[1034] But *sight credit* alone increased by 697.1 million Marks from 1870 to 1872,[1035] which seems to account nearly completely for the growth of deposits during these two years.

The German financial market was flooded and interest rates decreased. It might be objected that the decrease of the interest rates from 4.87 percent in 1870 to 4.16 percent in 1871 was rather negligible. But one must not forget that the war had destroyed not only a lot of human lives, but also "an tremendous amount of capital."[1036] Furthermore, as will be seen later on, there have been massive investments in the railroad industry at the time. In normal circumstances, interest rates would have risen strongly.[1037] That interest rates did not soar but even declined in Germany can be ascribed to the French reparations[1038] and the subsequent credit expansion.

[1030] See also Kindleberger (1990, p. 71).
[1031] See Soetbeer (1874, p. 43).
[1032] See also Oechelhaeuser (1876, p. 70).
[1033] See Burhop (2004, p. 59).
[1034] See Sprenger (1982, p. 63).
[1035] See Burhop (2004, p. 59).
[1036] Kahn (1884, p. 186)
[1037] See Garrison (2001, pp. 59 f.).
[1038] See Kahn (1884, p. 186).

Year	Average discount rate at the German Reichsbank and its predecessors	Market rate of Prussian government bonds
1869	4.24	4.74
1870	4.87	4.82
1871	4.16	4.17
1872	4.29	4.16
1873	4.95	4.05

Table 3: Short term and long term interest rates
Sources: Homer (1977, p. 265), Spree (1977, p. 378)

Table 3 contains the German interest rates during the *Gründerzeit*. It might be interesting to also have a look at the monthly data in table 4.

	1870	1871	1872	1873	1874
January	5	5	4	4.81	4.7
February	4.5	4.84	4	4.11	4
March	4	4.07	4	4	4
April	4	4	4	5	4
May	4	4	4	5.94	4
June	4	4	4	6	4
July	6	4	4	5.89	4
August	7.16	4	4	4.61	4
September	5.13	4	4.5	4.5	4
October	5	4	5	4.6	4.94
November	5	4	5	5	5.27
December	5	4	5	5	6
Average	4.89	4.16	4.29	4.95	4.38[1039]

Table 4: Average monthly bank discount rate in Berlin
Source: Helfferich (1898, p. 293)

From January to April 1871, the discount rate sank by one percentage point and was kept down there for more than a year. When the rate was increased in September and October 1872 the boom slowed down.[1040] By lowering its discount rate to 4.5 percent on January 20th 1873, and to 4 percent on February 7th, the *Preußische Bank* was able to revive the stagnating boom once more. On April 1st the discount rose again

[1039] Helfferich here says 5.38 which must be a typo. Homer (1977, p. 265) who only mentions the annual averages has 4.38 percent.
[1040] See Blume (1914, p. 35), Oechelhaeuser (1876, p. 69).

to 5 percent, and on May 3rd to 6 percent. After the Vienna stock market had crashed in May, the *Preußische Bank* wanted to prevent a similar event in Germany and therefore lowered the discount rate again to 5 percent on July 28th and to 4.5 percent on August 8th.[1041]

However, after the last French instalment had been paid on September 5th,[1042] the boom was at an end. In October, the first companies, most famously the *Quistorp'sche Vereinsbank*, collapsed. In the subsequent months, many corporations, especially those that had been newly founded during the boom years, followed. The next section will demonstrate that these events can pretty well be explained by the Austrian business cycle theory.

22.2.2 The boom and the bust

The expansion of artificial financing during the *Gründerzeit* affected the economy in a way perfectly compatible with the ABCT. It does not matter in this regard that the interest rate did not decrease very strongly. The interest was lowered by the credit expansion below the rate that would have prevailed without the latter. The effects on the economy would not have been different if, in the absence of the preceding war, the interest rate had been lowered more in nominal terms.

It must be added that it is not only the benefit of hindsight that allows for an interpretation of the events in terms of the ABCT. Ludwig Bamberger warned against the consequences of the reparations while the boom was still going on.

[1041] Data taken from Blume (1914, pp. 35 f.).
[1042] See Helfferich (1898, p. 286).

> The fast payment of the reparations contains an economic mistake that has and will have dire consequences, and much more so for the creditor [Germany] than for the debtor [France].[1043]

The problems arising from the organisation of the reparations were, in his words,

> an unnatural enlargement of means of circulation, an unnatural incitement of enterprise, persistent increases of wages and prices, and a pernicious channelling of our labour force to production processes that are less productive than those that have been chosen with a steady hand in the past.[1044]

And indeed, especially the investment goods industries strongly increased their capacities until 1873.[1045] To go into detail, the most famous higher-order investments of the time in question were the creations of new railway lines.[1046] In addition to new lines, the railway companies as well had to overhaul the old rail network which had suffered a lot during the war.[1047] In this respect, from 1871 to 1874, in Prussia as much smelting furnaces, iron- and engineering works were erected as in the entire seventy precedent years.[1048] The investments of the railway companies also increased the demand for raw materials like iron and coal.[1049] The prices of these goods can be seen in table 5, together with the prices of building material. The building industry is another area that is regularly stimulated by too low interest rates, and the *Gründerzeit* is no exception.[1050] Prices soared in these industries from 1870 to 1873 by 81, 71, and 58 percent

[1043] Bamberger (1873, p. 453).
[1044] Ibid. (p. 458).
[1045] See Gömmel (1992, p. 156).
[1046] See Blume (1914, p. 26).
[1047] See ibid. (pp. 25 f.).
[1048] See Spindler (2005, p. 157).
[1049] See Weigt (2005, p. 9).
[1050] See Blume (1914, p. 91).

respectively. In the years following the crash, they all fell dramatically and considerably below the pre-war level.[1051]

Year	Iron price	Coal Price	Prices for building material	Food prices
1868	98	55	92	80.6
1869	95	57	94	72.2
1870	100	68	99	71.8
1871	114	75	117	78.6
1872	167	98	131	83.4
1873	181	116	156	88.6
1874	130	113	131	89
1875	105	78	129	78.2
1876	90	66	115	84.1
1877	86	57	101	85.7
1878	82	49	89	80.1

Table 5: Price index for iron, coal, building material, and food in Germany in percent, 1913 = 100
Sources: Spree (1977, p. 442, 470, 500), Hoffmann (1965, p. 572, 598)

Food prices, on the other hand, were much more stable over the period. They only rose by 23 percent from 1870 to 1873, and afterwards they only fell slightly below the pre-war level. This fits well our theory. Consumer industries are not affected that much by the leverage effect as the industries at higher stages.

The leverage effect made itself felt also in the stock market. In the early 1870's the speculation profits that could be had at the stock market also infected the public.[1052] Like in many other boom periods, wide sections of the population seem to have lost all moderation and participated in the described *agiotage*.[1053] There have been several attempts to depict the historical development of the stock market. Figure 1 is based on one of the most recent studies that draws on an enormous amount of collected data. The graph underestimates the boom and the bust because some industries, especially the

[1051] See also Oechelhaeuser (1878, p. VI).
[1052] See Baltzer (2007, p. 174).
[1053] See Soetbeer (1874, p. 42), Oechelhaeuser (1878, p. 18), Meyer (2009, p. 332).

insurance business, have not been influenced by the boom at all.[1054] Other indices also show a much stronger increase of the stock market than this one, some of them up to 58 percent from 1870 to 1872.[1055]

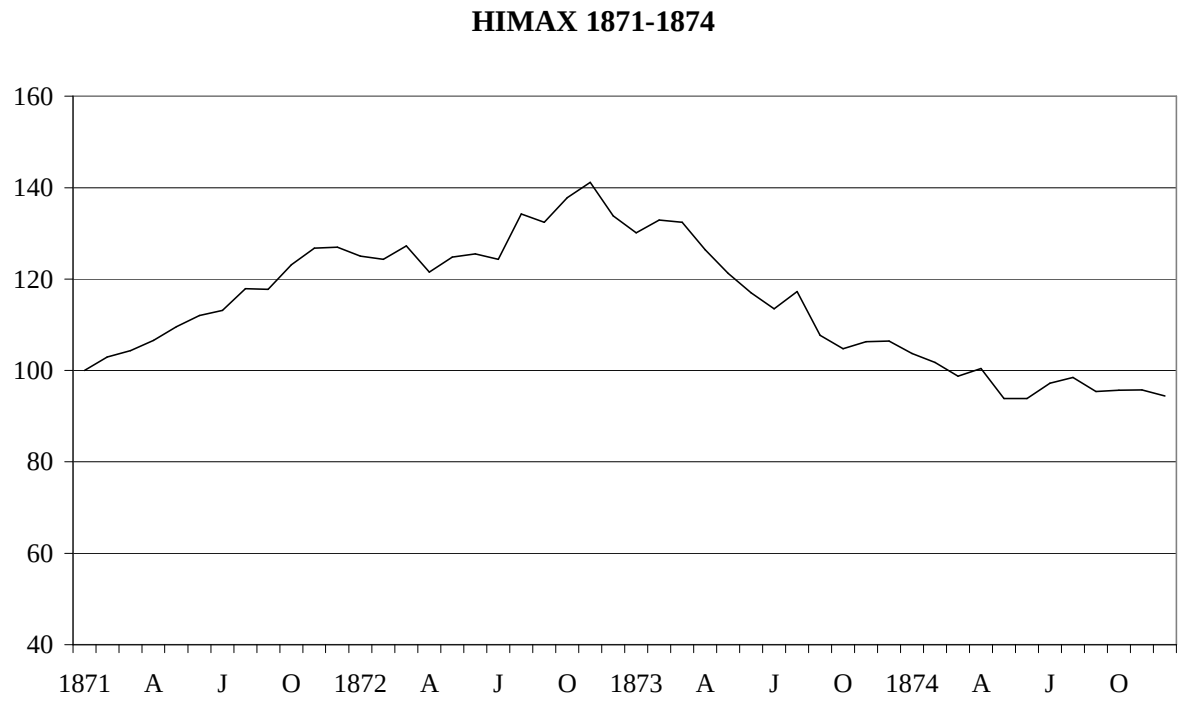

Figure 8: The Historical Market Index (HIMAX) from January 1871 to December 1874
Source: Weigt (2005, p. 249)

Still, even the HIMAX rose by more than 40 percent in less than two years and later on, after the crash, fell below the level of 1871. Like in most booms, the events on the stock market were paralleled by a similar price increase in the real estate market. The speculating new real estate societies bade up the prices because they wanted to profit from further price increases.[1056]

That the whole boom did not rest on real savings but on *Beutegeld* and the artificial expansion of credit can be seen pretty well in the relationship between the prices of labour and consumers' goods. No matter where the additional financing stems

[1054] See Oechelhaeuser (1876, pp. 37 f.).
[1055] See Spindler (2005, p. 165), also Baltzer (2005, p. 18).
[1056] See Gömmel (1992, p. 155).

from – savings or an artificial credit expansion – it is for sure that the new business money will, in the end, be paid out to originary factors of production, especially workers. And indeed, average annual wages rose "in an unprecedented way,"[1057] from under 500 to over 600 Marks, i.e., by more than 20 percent, from 1870 to 1873, and fell again to about 575 Marks until the end of the decade.[1058] Furthermore, during the boom time the average annual wage sum increased in *all* sectors of the economy more than average.[1059] However, if the rise of income had been financed out of real savings, consumers' goods prices should have remained more or less constant. But as the savings rate had not increased in any way, and because also the workers mostly squandered their additional income,[1060] the demand for consumers' goods rose.[1061] What happened was not a modification of the production structure, but an overall boom in all sectors that can only be upheld by a subsisting credit expansion. Unsurprisingly, the boom collapsed shortly after the original cause of the credit expansion – the French reparations – ended in September 1873. All in all, the events of the *Gründerzeit* and the *Gründerkrach* demonstrate the explanatory power of the Austrian theory of the business cycle.

22.3 The special feature of the boom: the Gründungen

The outstanding and eponymous feature of the boom have been the numerous and often unsound incorporations. In the long period from 1790 to 1870, there had been altogether only 371 incorporations in Prussia and Bavaria. In 1871 alone there were 216, in 1872 even 510, and in 1873 still 182 formations of new corporations.[1062] The whole boom such brought about 908 incorporations only in these two states. Many of these

[1057] Engel (1875, p. 468), also Oechelhaeuser (1876, p. 74).
[1058] See Hoffmann (1965, p. 91).
[1059] See ibid. (p. 90).
[1060] See Engel (1875, p. 515), Oechelhaeuser (1876, p. 18; 1878, p. 36).
[1061] See Soetbeer (1874, p. 52).
[1062] See Spindler (2005, p. 157).

new corporations, but also some of the older ones, could not stand the following depression and liquidated or went bankrupt. After the *Gründerkrach*, the liberal majority in the Reichstag, the incorporation business, and the *Gründer* (corporation founders) themselves were blamed for the mess.[1063] A whole *Anti-Gründer* literature emerged.[1064] The term *Gründer* became synonymous to swindler, not only in business life, but in all areas of society.[1065] According to Herbert Blume, even Richard Wagner had to accept to be called a "Großgründer in the field of music."[1066]

We have seen that the credit expansion triggered by the French reparations must be considered as the main cause of the boom-bust-cycle. This chapter will insert the fate of the corporations and their founders into the story. The corporations have shown themselves especially unstable after the *Gründerkrach* because the prevailing laws more or less channelled the additional credit and therewith the speculation into their direction.[1067] As they were urged to follow unsound accounting practices, they calculated much too high profits during the boom and paid them out as dividends. This way, they attracted investors and credit, enforced the boom, but also weakened their equity position. The following sections 22.3.1 to 22.3.3 depict how the unsound accounting rules came to prevail. Section 22.3.4 shows how they influenced dividends and thusly fuelled the boom, but also weakened the position of corporations after the *Krach*. In section 22.3.5, the excesses in incorporation business will turn out to be only a symptom of other diseases that struck the economy.

[1063] See Blume (1914, p. 38).
[1064] See Engel (1875, p. 469).
[1065] See Blume (1914, p. 38).
[1066] Ibid. (p. 38, n. 2)
[1067] See Oechelhaeuser (1878, p. 44).

22.3.1 The codification of general accounting rules

It is difficult to trace back the origin of the traditional accounting rules. The principles of realisation and lower-of-cost-or-market can be detected already in the 14th and 15th century in the accounts of merchants of the Italian city states.[1068] We find the realisation principle laid down in Henricus Grammateus (1518) and many more authors of the 16th century.[1069] But, at this time, merchants were not forced by law to keep books and therefore no codified rules existed. This fact backs up our thesis whereupon the Generally Accepted Accounting Principles indeed are an institution that developed over time and that have not been "invented" by any one person or legislator. After some beginnings in the Italian city states, France, in the "*Ordonnance de Commerce*" of 1673, was the first country to take comprehensive action in the field of accounting law in stipulating merchants to keep books.[1070] It is true, the *Ordonnance* did not itself contain specific valuation directives.[1071] But Jacques Savary's famous book "*Le Parfait Négociant*" which is considered as the leading commentary to the *Ordonnance* [1072] contains both the realisation and the lower-of-cost-or-market principle:[1073]

> Le septième [élément à observer] est de mettre les prix aux marchandises, & pour cela il faut prendre garde de ne les pas estimer plus qu'elles ne valent, car ce seroit vouloir se rendre riche en idée : mais il faut les estimer d'une maniere qu'en les vendant dans la suite, l'on y trouve du profit dans l'inventaire que l'on fera l'année suivante. Pour bien faire cette estimation, il faut considerer si la marchandise est nouvellement achetée, où si elle est ancienne dans le magasin, & dans la boutique : si elle est nouvellemen[t] achetée, & que l'on juge qu'elle n'est point diminuée de prix dans les

[1068] See Barth (1953, p. 65, n. 1).
[1069] See Leffson (1987, p. 254).
[1070] See Barth (1953, pp. 65 f.).
[1071] See Spindler (2005, p. 96).
[1072] See Rückert (2009, p. 74), Spindler (2005, p. 96) and the literature quoted there.
[1073] See also Schneider D. (2001, p. 901).

> Manufactures, ou chez les grossiers, il la faut mettre au prix coustant. Si ce sont marchandises qui commencent à s'appietrir, dont la mode se passe, & que l'on juge que l'on en peut trouver de semblable dans les Manufactures, & chez les grossiers, à cinq pour cent moins, il la faut diminuer de ce prix.[1074]

Although Savary is sometimes credited "with being the individual most responsible for the eventual wide establishment of the [lower of] cost or market rule," [1075] he certainly orientated himself by the then common practice of businessmen.[1076] Nonetheless, the subsequent *Code de Commerce* (1808) still did not codify any principles of valuation.

In the German states one was not totally satisfied with the French model[1077] and, in 1794, the *Allgemeine Landrecht für die Preußischen Staaten* (General State Laws for the Prussian States) for the first time contained, next to the obligation of keeping books, both the realisation and the lower-of-cost-or-market principle as they could be found in Savary.[1078] These valuation rules still were not mandatory but only applied to those companies with more than one associate that did not specify any valuation rules themselves. [1079] According to Dieter Schneider, the clear and exemplary rules concerning valuation in this law can be ascribed to the influence of the three practitioners that have been consulted. [1080] It appears that valuation according to historical costs and the named principles generally were undisputed until the 19th century.[1081]

Yet, when it came to introduce a general trade law for Germany, the ADHGB, the traditional accounting practices apparently were abandoned. The first Prussian draft

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[1074] Savary (1675, p. 325)
[1075] Vance (1943, p. 219), see also Spindler (2005, p. 96).
[1076] See Barth (1953, pp. 114, 125), Spindler (2005, p. 96).
[1077] See ibid. (p. 63).
[1078] See ibid. (p. 128), Schneider D. (2001, p. 914), Spindler (2005, p. 97).
[1079] See Barth (1953, pp. 66 f.), Schneider D. (2001, p. 963).
[1080] See Schneider D. (2001, p. 914), also Lion (1928, pp. 33 f.).
[1081] See Leffson (1987, p. 255).

of 1856 was still based on the principles laid down in the *Allgemeine Landrecht*.[1082] In the commission that was convened to consult about this draft, several businessmen and lawyers opposed this procedure and either wanted no valuation rules at all, or, if there should have to be some, that the commodities be put in the balance sheet according to their "true value price."[1083] Consequently, the second Prussian draft did not contain any valuation principles.[1084] The Austrian draft, however, involved the valuation of all commodities and claims according to their "true value."[1085] After some discussions, a modification of the Austrian proposal was finally codified. The Art. 31 of the ADHGB read:

> All goods and claims have to be put into the inventory and the balance sheet according to the value that has to be attributed to them at the time they are recorded.[1086]

This formulation still leaves some room for interpretation as it is not totally clear what exactly is meant by the "value that has to be attributed" [beizulegender Wert].[1087] Schmalenbach is of the opinion that legislation believed in *laissez faire* and did not want to prescribe any valuation rule so that the "merchant was free to follow his own intentions."[1088] However, in connection with Art. 29 that demanded of every merchant "to state the value of his assets" and to "make an annual statement that showed the relationship between assets and liabilities,"[1089] it seems debatable whether historical cost accounting was intended by the law.

[1082] See Barth (1953, pp. 67 f., 130), Schneider D. (2001, p. 915).
[1083] See Schneider D. (2001, p. 916).
[1084] See Spindler (2005, pp. 104 f.).
[1085] See ibid. (p. 108).
[1086] Lutz J. (1861, p. 6)
[1087] See Barth (1953, pp. 115, 136).
[1088] Schmalenbach (1988, p. 24).
[1089] Lutz J. (1861, p. 6)

Also later on no precise valuation principle has been incorporated into the German trade law. The important thing that happened was that, since 1900, legislation began to refer generally to the GAAP as benchmark for business accounts,[1090] and that jurisdiction accepted accounting according to historical costs as compatible with the law.[1091] The realisation and the lower-of-cost-or-market principles themselves have been codified for all legal forms of businesses only in 1985.

22.3.2 The liberalisation of corporation law

Among companies, the open corporations have always had a special status. The regulations limited companies have been subject to for most of the time can be traced back to the origin of this type of business. It does not stem from the practise of trade and industry, but from the way public loans were organised.[1092] In order to finance their wars, the Italian city states of the 12th and 13th century were in need of huge loans.[1093] The large sums could only be collected because a lot of citizens as well as foreigners participated in lending. The fund of loans was called *mons* and was subdivided into small parts (*partes*) of the same size each. It is easy to see that there was a solidarity of interest among the creditors of the state, all the more as for coverage they regularly depended on state revenues that were leased to them.[1094] In addition, usually privileges were transferred to the lenders, like trade monopolies and banking rights.[1095] These circumstances called for joint actions of the creditors, and the *montes* sometimes were the basis of companies lasting several centuries.[1096]

[1090] See Barth (1953, pp. 80, 214).
[1091] See ibid. (pp. 199 f.).
[1092] See Goldschmidt (1901, p. 328).
[1093] For the following, see Goldschmidt (1891, pp. 291 ff.).
[1094] See ibid. (p. 293).
[1095] See ibid., Oechelhaeuser (1878, p. 1).
[1096] See Goldschmidt (1891, pp. 296 f.).

This is not the place to go into the details of the further development of this kind of business. Suffice it to say that the collaboration of stock companies and the state when it comes to finance government expenditures mark some important events in history. One only has to think of John Law's *Compagnie d'Occident* in France and the famous *South Sea Company* in England. Both rested upon privileges given to them by the state in exchange for war financing or the buying up of government debt.[1097]

Up to 1870, in Germany the afterpains of these origins could still be seen. The formation of limited companies was considered as a privilege in itself. This not only shines out in legislation, as will be seen below, but also in the literature. Tellkampf, for instance, considered the limitation of liability enjoyed by the owners of corporations as an obvious privilege that had to be abolished because, as he thought, it contradicted free trade.[1098] He even credited the events of the *Gründerzeit* to the institution of limited liability.[1099] Similar ideas can still be found in the German ordo-liberals of the 20th century. For them, liability is one of the main preconditions of a functioning market economy,[1100] and they do not recoil from the idea of eliminating limited companies altogether.[1101]

Against this background one understands why, before 1870, in many German states incorporations were only possible if the state authorities approved of them. Moreover, before the 19th century, German corporations were not allowed to pay out any dividends before the whole enterprise was wound up.[1102] "There was only one settlement of accounts. It compared the original capital input with the amount of cash at the end of the undertaking."[1103] If dividends had been paid out nonetheless, they had to

[1097] See e.g. Huerta de Soto (2009, p. 108, n. 117), Polleit/Prollius (2010, pp. 92 ff.), Gareis (1874, p. 42).
[1098] See Tellkampf (1856, pp. 66 ff.; 1876, pp. 5 f., 14 ff.).
[1099] See Tellkampf (1876, pp. 18 ff.).
[1100] See Eucken (2004, pp. 282 ff.).
[1101] See Böhm (1976, pp. 156 ff.).
[1102] See Spindler (2005, p. 51).
[1103] Barth (1953, p. 51)

be put back into the company in case of liquidation in order to cover eventual liabilities.[1104] Correspondingly, corporations usually were planned only for a shorter period of time, like ten years.[1105]

Beginning with the 19th century, the liberalisation of commerce manifested itself also in corporation law. As a first step, interim financial statements were permitted.[1106] The earlier regulation whereupon dividends could only be paid at the end of the whole business "appears not to have conformed with business life."[1107] From now on, dividends paid out to the owners at the end of every year were definitively gone for the creditors.[1108]

Also the concession system was finally abandoned.[1109] Firstly, it could not be upheld that limited liability is a privilege that cannot be assigned to everyone. After all, as long as there is freedom of contract, it is 'my affair' whether I want to contract with any other person even if the latter does not want to be held responsible for more than a part of his personal wealth.[1110] Already Roman law had made it possible to limit liability.[1111] There is no reason to hinder people from basing their business relationships upon this kind of contract. "One must not forget that necessarily everyone who contracts with a corporation always knows that he has such a corporation as debtor, and that it is his will to be bound up with the latter and not with its members or representatives."[1112] Secondly, conforming to the liberal spirit of the time, the concession system began to be regarded as unworkable and useless.[1113] Even legislation

[1104] See Pöhls (1828, p. 225).
[1105] See Barth (1953, p. 51).
[1106] See ibid.
[1107] Pöhls (1842, p. 235)
[1108] See Barth (1953, p. 53).
[1109] See Engel (1875, pp. 452 f.), Löwenfeld (1879, p. 4), Weigt (2005, p. 23).
[1110] See Pöhls (1842, p. 257).
[1111] See Goldschmidt (1901, p. 326).
[1112] Pöhls (1842, p. 257)
[1113] See Spindler (2005, p. 111), Weigt (2005, p. 25), Baltzer (2007, p. 10).

itself admitted that it was not able to decide on the feasibility of entrepreneurial projects.[1114]

Therefore, in 1870 the amendment to the trade law concerning the joint-stock company and the stock company was introduced. With this law, the North German Federation followed England and France in liberalising the formation of stock companies.[1115] It was the peak of the liberalisation of corporation law.[1116] The liberal spirit can be seen in the motive given by the legislation for abandoning the system of concessions:

> As the public counts on the care that is promised by the state, and therefore believes to be able to abandon effort and care itself, this unaccomplishable promise has a destructive effect. Not seldom it *increases* the damages of fraud and unsound business instead of *preventing* them. […] The individual caution does not become dispensable because of the antecedent control of the project and the statute by the *state*.[1117]

22.3.3 The system of normative rules

Despite the liberal spirit that led to the abolishment of the concession system, legislation was not ready to deregulate incorporations completely. The point that interests us here is its stance to the accounts of stock companies. That legislation did not codify any clear valuation principles for *unlimited* companies can be ascribed to the fact that their owners were personally liable for all debts.[1118] What this implies can be illustrated by the following short deliberation. If a merchant is willing to ignore the traditional GAAP, to calculate a much too high profit, and to extract it from his

[1114] See Reichstag (1870, p. 650), also Löwenfeld (1879, pp. 4 f.).
[1115] See Spindler (2005, p. 110), also Reichstag (1870, p. 651).
[1116] See Gömmel (1992, p. 153).
[1117] Reichstag (1870, p. 650, emphasis in the original text)
[1118] See Rehm (1903, p. 73).

business, this does not have to bother his creditors too much. After all, he is still liable with his personal wealth.[1119] What he takes out of his business is, in principle, still recoverable for his creditors. Corporations, on the other hand, are of a different "nature."[1120] They are based on capital. What they pay out as dividends to their owners is lost to the creditors. Thus, in 1870, it was still considered necessary to protect the creditors and the public by hindering corporations from exploiting their 'privileges' in distributing their capital.[1121] A contemporary author wrote that he knows of "no 'free trader' in the full sense" who advocated total *laissez faire* in the area of corporation law.[1122] As an "Ersatz" for the omission of direct state control, i.e., the concession system, the legislator thought it imperative to introduce "once and for all a system of normative requirements" for the formation and continuous management of corporations.[1123] From the point of view of legislation this necessitated corresponding accounting rules.[1124] However, the final amendment was not well thought-out. As several contemporary authors remarked, "[t]he law of 1870 has been hurried through the parliament in one session."[1125] As an effect of the new accounting requirements, stock companies were, if not forced, at least urged by the law to practise *fair value accounting.*

What follows is a compilation of the decisive accounting rules that were law in force after 1870. On the one hand, the ADHGB still contained the Art. 31 demanding all goods and claims to be put into the inventory and the balance sheet according to the *value that has to be attributed to them* at the time they are recorded. In addition, the new Art. 217 provided that "it may only be distributed among the stock-holders what,

[1119] See ibid.
[1120] See ibid.
[1121] See Reichstag (1870, p. 651), Spindler (2005, p. 112).
[1122] Gareis (1874, p. 42)
[1123] Both quotes from Reichstag (1870, p. 651), see also Spindler (2005, p. 112), Baltzer (2007, p. 11).
[1124] See Spindler (2005, p. 112).
[1125] Oechelhaeuser (1878, p. 44), similarly Löwenfeld (1879, pp. 5 f.).

according to the annual settlement […] results as pure surplus over the whole advanced capital."[1126] At first sight this rule seems to be pretty prudent. It apparently *saves* the advanced capital from being distributed.[1127] However, Art. 217 did not define the surplus. Whether there is a surplus or not depends on the way the goods and liabilities are valued. If companies stick to the GAAP and post historical costs, no profit can be distributed until a cash-flow has resulted. If, instead, they post the current market value of their assets, which Art. 31 can be interpreted to require, a surplus might appear even if no cash has been earned at all. This is why, after the *Gründerzeit* with its rising asset prices, Hermann Löwenfeld wrote about the Art. 217:

> [T]he word 'only' sounds like a warning for the careless manager. But the serious merchant must have the opposite impression; the borderline which is set by this 'only' sanctions the ruin that it is supposed to prevent.[1128]

To go on, the new Art. 239a prescribed a rule that sounds similar to what today would be called the mark-to-market principle for financial instruments:[1129] "Commercial papers that have a market price may be put into the accounts at the most according to the price they have at the time of their recording."[1130] Again, at first sight Art. 239a seems to be pretty prudent. It stipulates an *upper* limit – "at the most" – for the valuation of commercial paper. It was supposed to counteract the attempt to value commercial papers unscrupulously.[1131] And indeed, in the motives given for the introduction of this article we read that the legislator wanted "to set arrangements on behalf of the creditors and therefore to work against the tendency of drawing the

[1126] Schubert/Hommelhoff (1985, p. 118) which contains a reprint of the original 1870 law.
[1127] See Löwenfeld (1879, p. 14).
[1128] See Löwenfeld (1879, p. 14).
[1129] See Sinn (2010, p. 207).
[1130] Schubert/Hommelhoff (1985, p. 123)
[1131] See Löwenfeld (1879, p. 430).

balance in a way to be able to distribute high dividends."[1132] Yet, together with Art. 217, Art. 239a sanctioned the practice of reporting unrealised profits, thereby contradicting the traditional realisation principle. In addition, in providing for a special upper limit for commercial paper that it considered to be particularly prudent, legislation indicated that for all other assets even less prudent valuation principles were appropriate. As one contemporary lawyer noted, only by means of "forensic tricks" it is possible to maintain that historical cost accounting was still permitted by the law.[1133]

22.3.4 The excessive distribution of dividends

These were the general conditions of the *Gründerzeit*: On the one hand, the French reparations kicked off an immense credit expansion that led to soaring asset and stock prices, on the other hand, the formation of corporations had been liberalised and a system of rules had been put into practice that reinforced imprudent accounting. Due to the corporation law that more or less prescribed fair value accounting, many corporations showed high profits. Especially – but not only – the assets of the higher-order industries and the real estate societies increased in value as long as the credit expansion continued. Based on these increased asset prices they calculated their profit and paid dividends.[1134] In fact, a corporation could do no other than to distribute the calculated paper profits as the law forced it to "hand over as dividends to their shareholders everything it had earned in the course of the year."[1135] The leap in dividends can be seen in table 6.

[1132] Reichstag (1870, p. 657).
[1133] See Strombeck (1882, p. 489).
[1134] See Neuwirth (1874, p. 58), Sinn (2010, p. 207).
[1135] Löwenfeld (1879, p. 14)

Year	Dividends in percent	Number of included corporations founded before 1871
1868	7.5	291
1869	8	304
1870	8.6	326
1871	12.4	319
1872	13.3	312
1873	11.5	292
1874	9.8	286
1875	8.6	269

Table 6: Dividends paid by corporations founded before 1871 in Prussia and Bavaria
Source: Spindler (2005, p. 162)

It must be noted that the figures given in table 6 are not affected by the fraudulent activities – the *Gründerschwindel* – that sometimes accompanied incorporations in the years after 1870. It only contains those corporations that were formed before the *Gründerzeit*. Beginning with 1871, even these companies paid out much higher dividends than before. After the credit expansion ceased, dividends went back to normal. It must, however, not be overlooked that from the peak of the boom 1872 until 1875, some of the old corporations went bankrupt or liquidated. These are not part of the statistic and therefore do not affect negatively the depicted dividends. Furthermore, not all sectors have been influenced by the boom in the same degree. So to say that things went back to normal seems a little optimistic. To give an example for a higher-order industry, the dividends of the mining and smelting corporations founded before 1871 soared from 5.2 percent in 1867 to 23.3 percent in 1872, only in order to fall to 2.7 percent in 1877.[1136] There have not been many building corporations founded before 1871. However, as their assets were strongly affected by the price increases, they witnessed high accounting profits that regularly were paid out as dividends or

[1136] See Spindler (2005, p. 172).

management bonuses.[1137] This practice ended abruptly in 1873, when dividends collapsed from 8.5 to 1.5 percent, after they had been 2.5 percent in 1869.[1138]

The practice of distributing bonuses and dividends on the basis of paper profits amplified the disproportionateness between the business and the consumption sphere described above. Due to the increased income of shareholders and managers the demand for consumers' goods received a further shot in the arm. The incentive to expand business was reinforced. Yet, the increased consumption of the named groups reduced the power of the business sphere to pay originary factors of production. This fact was clouded by the ongoing credit expansion and the low interest rates. As long as this situation prevailed, the increasing asset prices and profits incited businessmen to invest in the higher-order industries although, at the same time, the rising wages and profits reduced their savings that were necessary for these investments. So when the credit expansion stopped in 1873, it became clear that what had appeared to be a true profit was based upon the illusion of a never-ending credit expansion, and that the consequent expenses had been aligned with an increase of wealth that only was fictional.[1139] During the boom the corporations had distributed dividends that, in the end, did not stem from profits but from savings or, in other words, from their "substance."[1140] No wonder that they encountered severe problems after interest had risen and the illusion had ended.[1141] From the 371 corporations that existed in Prussia and Bavaria before 1871, 53 (or 14.3 percent) had to liquidate and another 30 (or 8.1 percent) went bankrupt until 1883.[1142]

[1137] See Spindler (2005, p. 180).
[1138] See ibid. (p. 179).
[1139] See Oechelhaeuser (1876, pp. 15, 19).
[1140] See Mildebrath (2008, p. 24).
[1141] See Sinn (2010, p. 207).
[1142] See Spindler (2005, p. 167).

Already many contemporaries mentioned the unsound accounting practices of the *Gründerzeit* as one of the main reasons for the strength of the whole boom-bust-cycle.

> Next to unsound incorporations the improper way of making up the balances, the artificial computation of problematic profits, has most sharply marked the nuisance of the resent speculation period.[1143]

It was understood that the "value that must be attributed" of Art. 31 ADHGB had been used "to cover bogus-balances,"[1144] and that Art. 239a sanctioned "the principle whereupon rested the unsound balances of the speculation banks."[1145] In the words of Löwenfeld, "among all sore spots, the sorest one"[1146] is that the new law forced the corporations into unsound business practices.[1147] When it came to change the corporation law, it was therefore demanded that the balance sheet should rest upon principles that are commercially sound.[1148] Only realised profits were supposed fit to be distributed,[1149] and, correspondingly, historical costs should be the upper limit in the balances.[1150] And indeed, the new amendment of 1884 finally contained in Art. 239b ADHGB, together with Art. 185a ADHGB, both the realisation and the lower-of-cost-or-market principle for corporations.[1151]

[1143] Oechelhaeuser (1878, p. 78)
[1144] Ibid. (p. 79)
[1145] Ibid. (p. 80)
[1146] Löwenfeld (1879, p. 13).
[1147] See ibid. (pp. 13 f.).
[1148] See Oechelhaeuser (1878, p. 80).
[1149] See ibid. (pp. 79, 84), Löwenfeld (1879, p. 435).
[1150] See Oechelhaeuser (1878, pp. 80 f.), Löwenfeld (1879, pp. 432 f.), Strombeck (1882, p. 491).
[1151] See Schubert/Hommelhoff (1985, pp. 573 and 599).

22.3.5 The business of incorporating

The special feature of the *Gründerzeit*, the extraordinary amount of incorporations, must be seen against the backdrop of the problems presented in the foregoing chapters. The credit expansion disturbed the nexus between the consumption and the business sphere and fuelled speculation. As long as the boom lasted, the accounting rules stipulated by corporation law even intensified the effects of the credit expansion. It was made easy for the founders of corporations to jump on the bandwagon and profit from the unsuspecting public. Under the prevalent circumstances – the rising stock prices and the high dividends – additional stock was warmly welcomed by the speculators as it promised further profits. The public was eager to buy new shares and did not care about the soundness of the underlying companies.[1152] Thus it was very attractive to issue new stock. It could be placed at a premium and, after the licence system had been abandoned, it was possible to incorporate within one day only and to sell the stock at the next one.[1153] In consequence, many people took up the task of founding new corporations not in order to produce anything, but merely to profit from the process of incorporation itself.[1154] Even several banks – the *Gründerbanken* – that resorted to the organisation of incorporations sprang up and tried to profit from the hype,[1155] sponsoring even "the most unsound formations."[1156]

The only thing that rested to be done for the founders was to find decent objects as basis for the incorporations. Very often they drew on already existing companies and only changed their form of organisation. This was the fastest way to incorporate if one didn't bother about the company itself.[1157] Fifty percent of incorporations during the *Gründerzeit* can be traced back to such *Umgründungen*, i.e., reorganisations. Before

[1152] See Engel (1875, p. 470), Blume (1914, p. 74), Wunderlich (1923, p. 18).
[1153] See Löwenfeld (1879, p. 9).
[1154] See Engel (1875, pp. 457, 528), Oechelhauser (1876, p. 34; 1878, p. 18), Löwenfeld (1879, p. 9).
[1155] See Oechelhaeuser (1876, p. 36), Blume (1914, pp. 73 f.), Spindler (2005, p. 170).
[1156] Blume (1914, p. 83)
[1157] See Engel (1875, p. 468).

June 1870, only eight percent of incorporations had originated this way.[1158] As the public was blinded by the general boom, the founders were able to further increase their profits – the *Gründergewinne* – by issuing shares whose nominal value by far surpassed the prices that had been paid for the assets comprising the corporation.[1159] This was no problem because the value of the assets of a newly founded corporation could more or less be stated arbitrarily.[1160] Art. 209b ADHGB only stipulated that the value of all non-monetary contributions should be mentioned in the company agreement together with the price or the amount of shares granted,[1161] but did not add what this "value" was supposed to be. It is not surprising that for reorganisations mostly those companies were chosen that had been in difficulties before. These were the companies the founders could most easily and cheaply obtain from their original owners,[1162] and whether their prospects were good or not did not matter as the public bought everything. Very often, even these shares representing overrated assets could be sold above par.[1163]

The business of incorporating rested upon the same principles as the whole boom. Nobody cared about the companies themselves as the only thing that everybody was looking for were the profits from the permanent price increases. That the newly founded corporations posted fictional asset values does not distinguish them from the long-established ones that also, as we have demonstrated, paid dividends on the basis of illusive balance sheets. What distinguished the new corporations from the old ones was that the latter at least rested upon solid *fundaments*. They were not brought into being because of short-run foundation profits but in order to respond to the needs of consumers. The boom has thrown some of them off the track, but most of them were able to stand the consequences of their malinvestments and oversized dividends. After

[1158] See Baltzer (2007, p. 28).
[1159] See ibid. (p. 57).
[1160] See ibid (pp. 31 f.).
[1161] See Schubert/Hommelhoff (1985, p. 116).
[1162] See Blume (1914, p. 51).
[1163] See Spindler (2005, pp. 177, 186).

all, their basis was sound. The newly founded corporations, instead, very often bore the imprint of unsoundness right from their beginning. Whereas the older companies paid too high dividends, the newer ones lost part of their capital already to the founders and to the previous owners of their overpriced assets. A large part of what the first-time buyers of the shares paid was divided among these two groups of people and the *Gründerbanken*.[1164] Daniel Spindler provides some characteristic examples. He mentions a mining society that was founded with an authorised capital of 900,000 Marks although the assets brought into the business obviously were worth only 12,000 Marks.[1165] Such systematic overassessment of assets was one possibility to obtain high foundation profits (*Gründergewinne*).[1166] This way the corporations were impaired even before they started their business. In addition, some of them paid extremely high dividends in order to attract investors.[1167] The real estate society *Landerwerb und Bauverein auf Actien* paid a forty percent dividend in 1871 after it had only existed for six months.[1168] The *Berliner Maklerbank*, founded in 1871, paid 25.7 percent at the end of the same year, and the *Centralbank für Bauten* distributed 48.2 percent in its founding year 1872.[1169] But in general, on a percentage basis, the dividends distributed by the new corporations significantly fell behind what the older ones paid.[1170] The reason was that they overassessed their assets, i.e., their equity that the dividends are related to. In 1871, the companies founded after 1870 paid 2.6 percentage points less, and in 1872 even 4.3 percentage points less in dividends than there pre-boom counterparts.[1171]

[1164] See Blume (1914, pp. 53 ff.).
[1165] See Spindler (2005, p. 173).
[1166] See ibid. (p. 177).
[1167] See ibid. (p. 162).
[1168] See ibid. (p. 180).
[1169] See ibid. (p. 188).
[1170] See ibid. (p. 163).
[1171] See ibid. (p. 162).

Because of their unsound foundations, the new corporations showed themselves way more fragile after the *Gründerkrach*.[1172] Of the 908 companies that originated in *Prussia* and *Bavaria* between 1871 and 1873, 268 had to liquidate and another 67 went bankrupt before 1884. In total, more than a third of them went out of business. The corporations founded before and after the *Gründerzeit* show much lower failing rates of about 20 percent.[1173] The sectors most hurt by the crisis are those that were especially reactive to the unsound valuation rules. Of the banks founded between 1871 and 1873, 49.4 percent disappeared within a few years.[1174] The notorious *Maklerbanken* (broker's banks)[1175] for example, a type of business that originated in the *Gründerzeit*,[1176] not only traded with commercial paper on commission as they were supposed to, but started to speculate themselves.[1177] Soon they paid high dividends[1178] based on the mark-to-market valuation indicated in Art. 239a ADHGB.[1179] They were hit badly by the crisis because of the huge amount of overvalued commercial papers in their balances. Many had to liquidate and some had lost the half of their equity.[1180] The same is true for the real estate banks that during the boom paid dividends according to the rising prices of real estate and later on had to write off their assets that had been overvalued from the start.[1181] The overall dividends of the newly founded banks collapsed from 11 percent in 1871 to 3.5 percent in 1873, not counting those that had already liquidated.[1182] The real estate sector that had grown very fast after 1871[1183] was hit second-strongest. Of the 89 new societies, 35 had to go out of business after the

[1172] See Baltzer (2007, pp. 44, 68).
[1173] See Spindler (2005, p. 167).
[1174] See ibid. (p. 187).
[1175] See Kindleberger (1990, p. 73).
[1176] See Wunderlich (1923, p. 4), Gömmel (1992, p. 164).
[1177] See Wirth (1874, pp. 87 ff.), Wunderlich (1923, p. 3), Weigt (2005, p. 30).
[1178] See Wunderlich (1923, p. 15).
[1179] See Spindler (2005, pp. 189 f.).
[1180] See Wunderlich (1923, p. 19).
[1181] See Kindleberger (1990, p. 73).
[1182] See Spindler (2005, p. 188).
[1183] See Blume (1914, p. 121).

Gründerkrach.[1184] The increasing real estate prices during the boom had led to high paper profits that were often distributed as dividends or bonuses. Thus the liquidity of these companies was reduced. When the prices of their assets dropped, they regularly came into trouble.[1185] The dividends of these corporations fell harshly from 29.8 percent in 1871 to 3.1 percent in 1873, and even to 0.9 percent in 1876.[1186] In the mining, iron, and steel industry, things looked similarly. The companies overvalued their assets, paid high dividends, and became illiquid when prices dropped. Of the newly founded companies, 39.1 percent had to stop business after the *Gründerkrach*, and their dividends went down from 9.2 percent in 1872 to 1.1 percent in 1878.[1187]

The events of the *Gründerzeit* can pretty well be explained by the Austrian Theory of the business cycle. The immense credit expansion after the foundation of the German Reich fuelled speculation and malinvestments on a large scale. The liberalisation of corporation law in 1870 in itself cannot be held responsible for the crisis. It might not be without interest to note that even before 1870 there had existed unregulated forms of companies with effectively limited liability, like the *Kommanditgesellschaft auf Aktien* (partnership limited by shares), and those have never been at the heart of a boom-bust-cycle.[1188] Interestingly also, some German states, most notably Baden, Wuerttemberg, and Hamburg, refrained from introducing a concession system after 1861[1189] but did not experience a boom before 1871. On the other hand, Austria had not abandoned the concession system at all after 1870 but experienced many unsound incorporations and suffered a bust – even before Germany.[1190] Still, it was demonstrated in this chapter that the liberalised corporation law was not very well

[1184] See Spindler (2005, p. 178).
[1185] See Wirth (1874, pp. 99 ff.), Spindler (2005, p. 180).
[1186] See Spindler (2005, p. 179).
[1187] See ibid. (p. 172).
[1188] See Engel (1875, p. 457).
[1189] See Pohl (1982, p. 98).
[1190] See Gömmel (1992, p. 154), Baltzer (2007, p. 38), Wirth (1874, p. 28).

conceived. It contributed to the intensity and the direction of the crisis. Especially the accounting rules amplified the fragility of corporations and helped to blur the goings-on of the many unsound incorporations.

23. Concluding remarks

The work in hand has set itself to remove the veil of money from the activities on the financial market. The whole discussion was based on methodological individualism. The theories and arguments that have been examined were checked on their compatibility with the logic of individual human actions. We have come to the conclusion that the financial market is, in real terms, a market that allocates the available consumers' goods. This way it supports or finances the persons who partake in production or who are in need for consumer credit.

This main result of the present thesis has been achieved in three steps. First of all, it was necessary to provide a solid fundament for the chosen approach. If the compatibility with individual human action is taken as a yardstick for the soundness of economic theories, it is necessary to have a coherent concept of human action itself. Part I was dedicated to this task. As time plays an important role in financial transactions, the relationship between action and time was especially focused on. It could be demonstrated that both the time preference theory and the opportunity cost theory are not apt to describe this relationship. They concentrate on the analysis of human *choices* which, by their very nature, have no time dimension. Only *action* extends in time. The analysis of action in the passing of time has brought to light that an acting person, in acting, demonstrates that he values what he achieves – his revenues – more than what he gives up in order to get it – his costs. Furthermore, costs and revenues are both psychic or subjective phenomena that must relate to the consumption of the actor. As a by-product of the examination of the logic of action in the passing of time, it could be shown that the interest phenomenon is inherent to human action itself. To obtain a surplus-value is the end of every purposeful action.

The second step we have undertaken to remove the veil of money from the transactions on the financial market was to single out the *technical* problem that has to

be solved by any institution which has the function of financing the economy. As the classical economists have clearly seen, the necessary condition for any production process is the maintenance of those persons who participate in it. This was the main idea of their wages or subsistence fund theory. Our discussion revealed that this theory is compatible with the logic of action. We have healed several flaws that the original version of this theory contained and defended the rest of it against the numerous attacks lanced against it by later economists. Its main point can and must be upheld. When it comes to finance production, the one important thing to do from a technical or materialistic standpoint is to provide the involved persons with what they want and need. Everything else, the machines, tools and buildings, do not have to be financed on their own. Only the people that produce and maintain these things must be thought of. *Their* needs and wants must be financed. Thus, no matter whether we are dealing with a socialistic or a market economy, the *technical* prerequisite for the financing of production is a fund of consumers' goods that can be allocated to these people.

After it had been pointed out what any institution that has to finance the economy has to accomplish, we clarified – in the third step – how this task is actually brought about in the market economy. For this purpose, we had to establish a connection between the subsistence fund and the money transactions on the actually existing financial market. In order to accomplish this, a very complicated problem had to be tackled. Money is very often used to buy all sorts of goods that are not consumers' goods. Entrepreneurs regularly purchase machines, tools, raw materials, etc. In these transactions, money does not seem to be connected to a fund of consumers' goods in any way. To show that this is the case nonetheless, we have divided the realm of action into the consumption sphere and the business sphere. The former comprised all actions where money plays the role of a mere item in transit. What really counts there are the psychic considerations of the individuals. It was easy to demonstrate that,

in this sphere, the purchasing power of money only relates to goods and services that the acting people consider as consumers' goods, in other words, to the subsistence fund. In the business sphere, in contrast, money constitutes the be-all and end-all of all actions. There, money is not used to satisfy subjective needs, but in order to make more money. It is not employed in the purchase of consumers' goods, but of factors and means of production that are required in business. The challenge was to prove that also in this sphere money bears a close relationship to the fund of consumers' goods.

The first thing we have done was to demonstrate that the actions of businessmen in the business sphere are compatible with our stance on human action. The institutions of economic calculation – capital accounting and the corresponding traditional accounting rules – are totally compatible with the microfoundations laid down in part I. Entrepreneurs orientate their actions by monetary magnitudes, not by psychic considerations, but otherwise their behaviour conforms to the former results. Secondly, we were able to unveil that the whole business sphere with its monetary calculations depends on the fact that the money which is employed there has the power to become income in the consumption sphere. Money would never be accepted in payment if it didn't have the power to purchase consumers' goods. Neither workers nor, by implication, entrepreneurs would sell anything against money if it could not be used to satisfy psychic needs. In the end, everybody is only interested in money because it can be used to buy consumers' goods. If money could not be applied to this purpose, it could never obtain the power to purchase producers' goods.

Thus, we were able to establish a connection between money and the subsistence fund even in the business sphere. When money is traded, the real magnitude that underlies it are saved up consumers' goods that can be bought by the earners of income. This statement holds true also for the financial market. What is transferred in credit transactions is the power to purchase consumers' goods. This is the only power

of money that is necessary to finance the economy. *In real terms, the financial market is the market for the subsistence fund.*

We cemented our results in three different ways. First of all, we always kept in touch with actual institutions. Especially capital accounting could be shown to be compatible with our analysis. Accounting contrasts historical costs and revenues – both in terms of money – and thus allows for the determination of profits. But even if one removes the veil of money capital accounting makes perfect sense. The balance sheet keeps track of the potential to consume once sacrificed in financing the corresponding project. It shows how much of this potential has passed through the company. Later on, this sacrificed potential can be compared to the potential that the company newly creates. When there is profit, the company has contributed to society's power to consume.

The second way we have secured our results consisted in the demonstration that they are consistent with other economic theories. We found that our point according to which the purchasing power of money is determined in the consumption sphere is confirmed by the Austrian Theory of the Trade Cycle. The latter attributes the recurrent boom-bust-cycles to additions to the money supply lent into existence by the banking system. Although this theory is not always outlined homogeneously, some versions of it come very close to our own findings. It has been shown that all other versions contain inconsistencies. According to the correct one, artificial credit expansion makes entrepreneurs calculate as if the fund of consumers' goods available for the financing of production had increased. The newly created money simulates an increase of the subsistence fund which actually doesn't exist. Entrepreneurs consequently invest money in more roundabout ways that seem to yield more profit because of their misguided calculation. They kick off a boom. However, in reality the fund in question has not been increased at all. The entrepreneurs are not aware of this fact because they

are not able to look through the veil of money. At one point, this lack of power to purchase consumers' goods makes itself felt. It becomes more profitable to produce consumers' goods whereas the investments that have been started because of the misled calculation must be abandoned.

At long last, we illustrated our theoretical findings empirically by means of the German Crisis of 1873. In the years preceding this event, a tremendous amount of artificial money and credit had entered the German economy. Concurrent with the particular version of the Austrian Theory of the Trade cycle that conforms with our results, entrepreneurs were led into thinking that more power to purchase consumers' goods was available. They consequently expanded business and created a boom as predicted in the theory. The investments into new railways have become famous for this period. Later on, it became clear that the power to purchase consumers' goods had not increased by so much as was initially expected. The started projects could not be financed any more. A bust set in.

The crisis of 1873 also demonstrates one further result of our discussion. Capital accounting only suits for the guidance of business actions as long as it conforms to the Generally Accepted Accounting Principles, and therefore to the logic of action we have presented in part I. Before the *Gründerkrach*, however, a different system of accounting rules had been implemented in Germany. In the subsequent years, especially corporations were more or less forced to practise fair value accounting. In consequence, they ceased to ground their calculations and dividend payouts in their costs and their revenues. Instead, they had to employ the market value of their assets. This implied that the profits they showed and cashed out did not have much to do with their performance any more.

Many of the issues that have been dealt with in the course of the discussion have only been touched upon. Most of them deserve further attention. Especially the problem

of economic growth has only been treated superficially. What we have done is that, in separating the two different concepts of capital that are usually mixed up, we have laid the groundwork for further discussion of growth and its connection to the financial market. The veil of money has been removed from the relevant processes. However, it seems doubtful whether economic growth can be analysed without huge difficulties. In the end, human well-being and its growth are subjective phenomena. At one point, we have taken the size of the business sphere – measured by the capital invested there – as an indicator of economic well-being. If this should happen to be a reasonable approach, the current growth models could consider this idea in confining their capital concept to business capital and leaving out everything else, especially public investments. Of the latter, it is unclear even *ex post* whether they are able or intended to enhance human well-being as they do not rely on revenues paid by voluntary customers.

Another topic that has not been paid due attention to are the technical details of the modern financial market. The organisation of modern stock market transactions, the over-the-counter-market, the numerous different financial derivatives, and many other particularities have been left out. However, there seems to be no stumbling block to integrating these issues into our discussion. They all influence the way money is allocated, but, as far as I can see, they do not change the role of money – and the financial market in general – in allocating the available fund of consumers' goods.

One area that I consider to yield especially profitable results to further study is the point of intersection between accounting theory and economics. Concerning the boom-bust-cycle, both research approaches seem to complement each other. So far, the Austrian Theory of the Business Cycle has already implemented the role of the processes in *bank* accounts. The accounts of non-banking companies and the Generally Accepted Accounting Principles, on the other hand, have only been hinted at by some of the corresponding theorists. Yet, these principles seem to mitigate the harmful

effects of an artificial expansion of credit on the financial market. To analyse in depth why this is the case will probably shed light on some important aspects of the market economy. In particular, it will help to understand how the division of labour is organised by calculation in money, that is, how the plans of the individual businesses intertwine. It would be interesting to know what difference it makes for the allocation of the power to purchase consumers' goods according on whether banks and other businesses calculate profits on the basis of historical costs or some other magnitude.

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