



A political economy essay on the fiscal and monetary interactions in Brazil

Marcos Centuri3n-Vic3ncio

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A Political Economy Essay on the Fiscal and Monetary Interactions in Brazil

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Abstract

A Political Economy Essay on the Fiscal and Monetary interactions in Brazil

by Marcos Centurión-Vicêncio

One of the principal conclusions of modern macroeconomics is that fiscal dominance is a threat to price stability. This ‘unpleasant dominance’ describes a particular situation in which short-sighted politicians would use the central bank’s power to create money so to accommodate the financial needs of the government. The empirical demonstration of fiscal dominance firstly presented by Sargent and Wallace (1981) unveiled a positive correlation between price instability and this specific dysfunction in fiscal and monetary interactions. The emphasis placed by the subsequent contributions on the benefits of having a monetary-dominant regime to mitigate the risk of fiscal dominance, our documentary analysis suggests, faded away more consistent discussions about non-dominant solutions. This thesis seeks to fill this gap by investigating how the idea of monetary dominance has been generating negative externalities over the fiscal balance of the government. We argue that this notion is none but a partial solution. This is because the influence of interest groups over monetary decisions is often neglected, as central banks are assumed to be impartial institutions interacting with irrational governments which choices are likely to generate time-inconsistency problems. Two fundamental limitations of these assumptions are then acknowledged. Firstly, by rarely looking at the social and institutional mechanisms through which price instability can arise, a minimal emphasis is given to what we will call here as the ‘financialisation of monetary policy’ – a distortion in monetary choices leading to the maximisation of private gains at the expenses of collective losses. Secondly, little attention is paid to the negative externalities of monetary dominance over the fiscal balance of the government. These limitations are explored through a political economy analysis of the repurchase agreements (repo) used for monetary purposes in Brazil during the period 2006-2016. At the same time that these operations were extensively deployed by the Brazilian central bank to make inflation converge to the target, we show that repo count among the most important sources of funding for the major commercial banks in the country. The ‘double character’ of this financial instrument suggests that central bank decisions are not purely ‘technical’ but also political, which consequently calls for a study that integrates the conflict of interests over monetary decisions, as well as the mechanisms at the disposal of the central bank to deal with the action of organised interest groups. We, therefore, go beyond the assumption of inflation as a merely ‘monetary disease’, to investigate the economic forces that lie behind the excessive injections of money into the Brazilian interbank market. This is how this thesis intends to contribute to rethinking monetary policy theory and the nature of public borrowing.

Keywords: Fiscal and Monetary Dominance, Repurchase Agreements, Financialisation, Interest Groups, Convention economics, Central Bank. Brazil.

JEL Classification: E63; E58; G23; D79; O54

Résumé

Essai sur l'Economie Politique des Interactions Budgétaire et Monétaire au Brésil

par Marcos Centurión-Vicêncio

L'une des principales conclusions de la macroéconomie moderne est que la domination fiscale est une menace pour la stabilité des prix. Cette 'domination désagréable' décrit une situation particulière dans laquelle des politiciens à courte vue utiliseraient le pouvoir de la banque centrale pour créer de l'argent afin de répondre aux besoins financiers du gouvernement. La démonstration empirique de la domination fiscale présentée pour la première fois par Sargent et Wallace (1981) a révélé une corrélation positive entre l'instabilité des prix et ce dysfonctionnement spécifique des interactions fiscales et monétaires. L'accent mis par les contributions ultérieures sur les avantages d'un régime à dominance monétaire pour atténuer le risque de domination fiscale, selon notre analyse documentaire, a dissipé des discussions plus consistantes sur les solutions non-dominantes. Cette thèse cherche à combler cette lacune en étudiant comment l'idée de dominance monétaire a généré des externalités négatives sur l'équilibre fiscal du gouvernement. Nous soutenons que cette notion n'est rien d'autre qu'une solution partielle. En effet, l'influence des groupes d'intérêt sur les décisions monétaires est souvent négligée, car les banques centrales sont supposées être des institutions impartiales qui interagissent avec des gouvernements irrationnels dont les choix sont susceptibles de générer des problèmes d'incohérence temporelle. Deux limites fondamentales de ces hypothèses sont alors reconnues. Premièrement, en examinant rarement les mécanismes sociaux et institutionnels à travers lesquels l'instabilité des prix peut se produire, on accorde une importance minimale à ce que nous appellerons ici la *financiarisation de la politique monétaire* - une distorsion des choix monétaires conduisant à la maximisation des gains privés au détriment des pertes collectives. Deuxièmement, peu d'attention est accordée aux externalités négatives de la domination monétaire sur l'équilibre budgétaire du gouvernement. Ces limites sont explorées à travers une analyse d'économie politique des pensions livrées (repo) utilisées à des fins monétaires au Brésil au cours de la période 2006-2016. En même temps que ces opérations ont été largement déployées par la banque centrale brésilienne pour faire converger l'inflation vers la cible, nous montrons que les repo comptent parmi les plus importantes sources de financement des principales banques commerciales du pays. Le 'double caractère' de cet instrument financier suggère que les décisions de la banque centrale ne sont pas purement techniques mais aussi politiques, ce qui nécessite donc une étude qui intègre le conflit d'intérêts sur les décisions monétaires, ainsi que les mécanismes dont dispose la banque centrale pour faire face à l'action des groupes d'intérêts organisés. Nous allons donc au-delà de l'hypothèse de l'inflation comme une simple 'maladie monétaire', pour étudier les forces économiques qui sont à l'origine des injections excessives d'argent sur le marché interbancaire brésilien. C'est ainsi que cette thèse entend contribuer à repenser la théorie de la politique monétaire et la nature de l'emprunt public.

Keywords: Dominant Fiscal and Monetary, Pension Livrées, Financiarisation, Groups of Interest, Economy of conventions, Central Bank, Brazil.

Classification JEL: E63; E58; G23; D79; O54

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Acronyms

ANBIMA	Brazilian Association of Financial and Capital Market Institutions
BACEN	Central Bank of Brazil
BIS	Bank for International Settlements
BRL	Brazilian Real
CMN	Brazilian National Monetary Council
D-SIBS	Domestic Systemically Important Banks
FTPL	Fiscal Theory of the Price Level
GDP	Gross Domestic Product
IBGE	Brazilian Institute of Geography and Statistics
IPEA	Brazilian Institute for Applied Economic Research
LFT	Letras Financeiras do Tesouro (Domestic bond)
NAIRU	Non-Accelerating Inflation Rate of Unemployment
NFC	Non-Financial Companies
REPO	Repurchase Agreements
SDM	Sovereign Debt Management
SELIC rate	Special System for Settlement and Custody (Brazilian central bank interest rate)
TN	National Treasury (Tesouro Nacional)

Sapere aude, incipe.

General Introduction

One of the principal conclusions of modern macroeconomics is that fiscal dominance is a threat to price stability. This ‘unpleasant dominance’ describes the misuse of the central bank’s power to create money for public debt monetisation by short-sighted politicians. Under this regime, the monetary authority is forced to accommodate the massive deficit spending of the government, as well as the deleterious effects of inflation on economic growth. As a consequence, the domination of fiscal choices undermines any possibility for the central bank to follow a credible and transparent inflation targeting mandate. This process was described by Sargent and Wallace (1981), whose argument of price instability under fiscally dominant regimes represented a major step forward toward the understanding of distortions in fiscal and monetary interactions. Their findings have not ceased to shape our comprehension of the mechanisms by which such interactions are to interact optimally, which undeniably ranks the ‘unpleasant monetarist arithmetic’ among the most important contributions of all time to macroeconomics (Lucas and Stokey, 1983; Alesina and Tabellini, 1987; Leeper, 1991; Calvo and Guidotti, 1992, 1993; Nordhaus, 1994; Sims 1999a; Woodford, 1994, 1999; Schmitt-Grohe and Uribe, 2004a, 2007; Cochrane 2005, 2018).

Drawing upon the vast array of literature influenced by Sargent and Wallace (1981), we have conducted a documentary analysis that provides a wholesale overview of recent debates on the relationship between the central bank and the government¹. The motivation of this research study derives from the abounding controversy in the literature about the most appropriate design of fiscal and monetary policies. The extent of this debate suggests that there are no easy solutions at hand and that there is no policy choice without mutual externalities. However, the very fact that the debate is sustained suggests two important substantive considerations. First, this calls for a more comprehensive analysis of the distortions on fiscal and monetary interactions. The majority of the literature assertedly points out some of the consequences of a dysfunctional relationship between the central bank and the government, ranging from, *inter alia*, uncontrolled inflation, systemic risks

¹ For the purposes of this research study, we will be using the terms ‘government’ and ‘fiscal authority’ interchangeably.

or government failure. However, other outcomes, although less evident, may also correlate to these distortions. We think of the success and failure of social systems, significant economic inequalities or the financialisation of the economy. Second, this debate has not yet crossed the boundaries imposed by the idea of *dominance* – either fiscal or monetary. This idea, championed by Sargent and Wallace (1981), says much about the inefficiencies of fiscal interference over monetary decisions, but very little about monetary interference over fiscal decisions. The notion of dominance has eclipsed alternatives other than a dominant central bank to cope with fiscally dominant regimes. This bias has drawn our attention to the fact that interests, other than purely scientific, might have been *lobbying* for the idea of monetary dominance to gain institutional legitimacy. These two considerations provide valuable insights into the reasons for fiscal and monetary interactions to remain one of the most challenging and contemporary issues in macroeconomics.

Therefore, we offer a critical examination of this array of work to interrogate existing theoretical perspectives, and explain *why* and *how* the idea of dominance in economic policy stands out as the beacon to the studies of fiscal and monetary interactions. We observed that researchers have been thinking this relationship at the extremes, ranging from one form of dominant-based coordination scheme to another. This means that ‘dominance’ became – openly and implicitly – the prescription (monetary) and diagnosis (fiscal) of distortions in fiscal and monetary interactions. The core problem of such emphasis on ‘dominant solutions’ remains the relegation of the non-dominant ones to a secondary or even inessential role. By non-dominant solutions, we understand institutional arrangements for fiscal and monetary interactions that goes beyond mere *vertical coordination* (i.e., **A** dominates **B**). We contend that rather than using this typology, an alternative explanation might be found in *horizontal coordination* – a concept that will be further developed along the lines of this thesis.

Within the framework of these criteria we initiated this research to investigate the unseen power of the idea of dominance in economic policy. Our dissertation then calls into question the current *status quo* of research on fiscal and monetary interactions, and takes a new look at the theoretical discourse giving legitimacy to the institutionalisation of vertical coordination. It follows from the above insights that we will be primarily focusing on the influence of **monetary dominance** over policy prescriptions of practical significance. Some of these practical aspects include central bank independence, the adoption of inflation targeting² and the measures of fiscal austerity. In so doing,

² In general terms, inflation targeting relies on the following elements (Mishkin, 2001): (i) public announcement of quantitative inflation targets in the short and medium-terms; (ii) institutional commitment that price stability is the central objective of monetary policy, to which all other objectives are subordinated; (iii) the use of several variables, and not only the monetary aggregates and the exchange rate, to define the set of instruments that will be used for the conduct of monetary policy; (iv) giving as much transparency as possible to the strategy being implemented by the

it is not our purpose to reject any of Sargent and Wallace's (1981) elegant mathematical demonstrations of fiscal dominance; Neither to invalidate the harmful effects of political opportunism over the general price level. Instead, our work extends current knowledge on the topic by providing a political economy analysis of fiscal and monetary interactions.

We chose this particular approach on account of the long-standing tradition of political economists to elucidate the economic forces and theoretical ideas that operates over policy decisions. From Hume, Smith, Ricardo and Marx in the eighteenth and nineteenth centuries, to Keynes, Olson and Minsky in the past century, and North and Rodrik more recently, political economy theory has been representing a valuable alternative to the narrow-angle lens of *pure* quantitative analysis. We understand that the political economy approach has the potential to challenge the grounding beliefs in which the practical aspects of monetary dominance have been enacted. These practical aspects, we argue, have been moving together with a legitimisation process aiming at coordinating the expectations of economic agents around the believed-to-be benefits of a dominated (passive) fiscal policy by a dominating (active) monetary policy. This coordination of expectations proceeds very much in the same way as indicated in Orléan (1994), from whom we adapted the notion of *convention* for the sake of our argument. Such notion is very useful for understanding how common-ground beliefs may serve the interests of a specific leading group. An interest group that has power³ enough to provide benefits to those joining the convention and to sanction the leavers, will have strong incentives for transferring the costs of the advantage taken from policy favours to the other groups in society. If we consider monetary dominance as convention, this suggests that parts of the common belief on the benefits of central bank independence and inflation targeting mandates may reflect the viewpoint of a specific group; And that the cost and benefits of such regime might be unequally distributed among the different groups in the society.

We derive this insight from an important drawback in Sargent and Wallace's (1981) argument. They explain *how* but not *why* governments behave in the way they do under fiscally dominant regimes. No important scientific effort is made to understand the political forces which lie behind the excessive injections of money in the economic system, as there is no breakdown of the different groups and sectorial claims influencing government decisions affecting the money supply. This drawback relates, we deduce, to their grounding belief in inflation as a purely 'monetary disease', mainly caused by the increase in the money supply, faster than real GDP, to cover massive public

central bank in the conduct of monetary policy; and (v) making the central bank responsible for the achievement of the defined monetary targets.

³ For the purposes of this thesis, the notion of 'power' relates to the bargain strength of interest groups *vis-à-vis* the public institutions.

deficit spending. Hence, while the inflationary consequences of fiscal mismanagement receive most of the attention, the idea of central bank impartiality goes implicitly. This view on central bank behaviour suggests that the monetary authority would be sheltered from vested interests competing to monetise the assets they control, whether by means of control of interest rates on the part of banks, the bargaining power of the systemically important financial institutions (SIFI), or inefficiencies in the interbank lending market.

Central bank impartiality can be explained *a contrario sensu*, using the idea of partiality. Partiality can be understood in two different manners: as a subjective action in the pursuit of selfish interests; or as the fruit of an objective choice guided by a held belief of the right or most advantageous ‘thing to do’. The notion of impartiality hinges on these two nuances. On the one hand, it is the exact opposite of the idea of subjectivity of selfish interests, revealing itself as objective conduct, detached from the interests at stake (therefore neutral, grounded on isonomy, independent). On the other hand, impartiality is in its fullness when one pays attention to the whole (and not only to the part of it). Impartiality therefore requires attention to be paid to all interests significantly affected by one’s action.

The assumption of central bank impartiality should be assimilated with great caution. The paucity of rigorous analysis of the limits of monetary dominance have induced many researchers to assimilate that the government alone has incentives to use the central bank for debt monetisation, while private agents have none. We observed this unrealistic situation as one of the most important limitations within much of the fiscal and monetary literature initiated by Sargent and Wallace (1981). The focus has primarily been placed on the misbehaviour of short-sighted politicians when explaining poor monetary choices, whereas the part played by private interest groups in such decisions is underexplored. This literature bias calls for a reconsideration of the findings pointing out fiscal dominance alone to be blamed for price instability and fiscal fragility. It is in reconsidering the held beliefs about inflation and monetary dominance that fiscal policy may regain importance from the absolute low point reached in the 1980s.

Of equal importance, monetary dominance should be understood as a by-product of the ideological clash of economic views between Keynesianism and Monetarism regarding the role of fiscal and monetary policies. The idea of monetary dominance embodied the triumph of the latter over the former in the guidance of macroeconomic policies since the early 1980s. Historical facts such as the demise of Bretton Woods, the oil shock, and the official rejection of Keynesian economics in Britain by the Thatcher’s administration, were crucial for the demise of the post-war Keynesian consensus. The monetarist argument on the benefits of a dominant monetary policy (i.e. dominated

fiscal policy) provided the theoretical framework for explaining the way fiscal and monetary policies were to interact from that moment forward. Panić (1978: p. 137) gives a substantial explanation of this transitional period:

One of the major consequences of the worsening inflationary trends has been the virtual abandonment of the objectives of full employment and economic growth which dominated the economic policies of industrial nations after World War II, and which were pursued so successfully until the early 1970s. Instead, a new consensus seems to have developed according to which the two objectives cannot be attained until the problem of inflation has been 'solved'.

This argument echoes the calls from other prominent figures of monetarism such as Friedman (1987), Schwartz (1987) or Meltzer (1977) regarding the importance of monetary-dominant regimes for achieving overall price stability. Otherwise stated, the subordination of fiscal objectives to monetary policy became a *sine qua non* condition to this end. This derives from the assumption that the agents are keen to anticipate the inflationary effects of expansionary policies if monetary goals are subordinated to fiscal policy. Therefore, any government intervention for the stabilisation of aggregate demand would increase price volatility due to uncertainties about future inflation. Such interventions would be inefficient because i) no signs would be given that would stimulate (re)actions by agents in the same direction as the stance of fiscal policy. As a result, ii) there would be harmful side effects to long-term investments due to unexpected inflation. McCallum and Nelson (2006: p. 17), two prominent figures of monetarism, illustrate well the view of this doctrine about fiscal and monetary interactions, and the importance of a coordination scheme based on (monetary) domination:

This coordination obligation does not overturn the result that the monetary policy rule alone determines the inflation rate; indeed, it is the mirror image of the monetarist position that fiscal policy matters for inflation only via its effect on money creation.

According to the monetarist account of fiscal and monetary interactions, fiscal policy should primarily assume the role of accommodating monetary choices. This statement stands in clear contrast to the role of fiscal policy advocated by Keynes (1936). His reasoning in terms of idle resources have resulted in the understanding that capitalism has a problem of resource mobilization rather than an allocation problem. Therefore, Keynesian fiscal policy should by no means be seen as an allocative policy, but a 'mobilisation policy' oriented towards the management of the appropriate level of aggregate demand for sustaining full employment. Ideally, Keynesian fiscal policy would be the one that stimulates entrepreneurs to make efficient use of production factors, leaving it entirely up to them to decide when and where to employ such factors. Instead of dominating each other, monetary and fiscal policies would function as complementary policies for the management of aggregate demand. On the one hand, the former would operate through

investment decisions, inducing agents to adjust the demand for assets (real and financial) according to price movements and the cost of money (interest rate channel). On the other hand, the latter would operate on the demand directly through public spending, or indirectly through taxation. As a result of the fiscal multiplier, each monetary unit spent by the government would increase the income of the private agents, whose, in turn, would expand their own consumption expenditures according to their marginal propensity to consume.

One of the contemporary consequences of this ideological clash is the hierarchisation of the goals of the central bank and the government, with the practical aspects of monetary dominance at the top of the list. Central bank objectives have become the dominant factor in different jurisdictions, together with the demise of fiscal policy as an active tool for macroeconomic stabilisation, which implies that fiscal objectives are to be attained once the problem of inflation has been solved. At the centre of this change in policy priorities, monetary dominance stands, we argue, as the intellectual foundation in which central bank independence and inflation targeting are bound together – all for the sake of price stability. In the light of this argument, we place our object of study in the intersection of philosophical and political issues, which marks our difference from most of the literature written on fiscal and monetary interactions. The narrow focus on the limits and benefits of the practical aspects of monetary dominance can be compared to someone who ‘looked carefully at the fruits but neglected the roots’, i.e., particular attention has been paid to central bank independence and inflation targeting while neglecting the governing idea supporting the implementation of both aspects. Differently, our understanding is that the idea of monetary dominance should not be superficially studied but thoroughly explored. This may allow future research to be more precise in supporting or criticising central bank independence, inflation targeting mandates or fiscal austerity policies. A critical thinking about monetary dominance has not only the potential to generate a better comprehension of how to enhance fiscal policy on the one hand but also to improve central bank choices on the other.

Another limitation observed during our documentary analysis relates to the little attention paid to the influence of private interest groups over central bank choices. This derives, we deduced, from the assumption of central bank impartiality – implicit within most of the favourable accounts of monetary dominance. With most of the emphasis placed on the risk of fiscal dominance, the figure of the short-sighted politician carries alone the burden of proof regardless of realism content in the claim of irrational choices and the time-inconsistency problem⁴. This argument is intellectually

⁴ The problem of time inconsistency was initially analysed by Kydland and Prescott (1977), who drew attention to the fact that a given policy can be conducted by rules or discretion. The latter occurs when the government freely acts without announcing beforehand an economic measure to be adopted, whereas in the former economic policies are to be forwarded guided according to

safe, but at the same time theoretically weak, as it implies declining an explanatory challenge which would lead across the conventional boundaries of economic analysis. From this minimal attention given to the risk of private interference over central bank decisions, we derive our main motivation for addressing three fundamental questions yet to be answered in the study of fiscal and monetary interactions.

First, should we think of fiscal and monetary interactions in terms of dominance? The treatment of fiscal and monetary objectives in terms of *domination* have consolidated the idea that both goals are necessarily traded off against one another. But does the solution for a situation of dominance (fiscal) should be found at the opposite end, in another regime of dominance (monetary)? For instance, if phenomenon A is bad it does not make phenomenon B, opposed to A, necessarily good. Apart from the fact that ‘bad’ and ‘good’ are judgments of value, whose value depends on the judge and the context, the simple information that ‘A is bad and B is the opposite of A’ is not enough to decide if B is good. Phenomenon A can be a drought while B can be a flood - they are opposite, but none is necessarily good. We found a reason for this polarised reasoning in North (1990). Specifically, his groundbreaking contribution on institutional changes are of great help for understanding the passage from the theoretical idea of monetary dominance to a set of policy prescriptions that institutionalised the dominance of central bank objectives over fiscal goals. The author sees in the bargain strength of interest groups, a driving force for the transformation of informal institutions⁵ (that reflect their view, e.g., unwritten social rules, taboos, sanctions or conventions), into formal institutions serving their interests:

Institutions include any form of constraint that human beings devise to shape human interaction. They can be either formal constraints - such as rules that human beings devise - and in informal constraints - such as conventions and codes of behavior. [...] Institutions are not necessarily or even usually created to be socially efficient; rather they, or at least the formal rules are created to serve the interests of those with the bargaining power to create new rules.[...] If economies realize the gains from trade by creating relatively efficient institutions, it is because under certain circumstances the private objectives of those with the bargaining strength to alter institutions produce institutional solutions that turn out to be or evolve into socially efficient ones (North, 1990, p. 16).

For the sake of our argument, we borrow three key-concepts from North (1990): interests, convention and sanctions. In so doing, we assume that informal institutions can emerge from different possibilities, including as a convention for representing the viewpoint of organised interest groups. And, therefore, that the idea of a dominant central bank itself could embody a

different macroeconomic scenarios. Generally, the time inconsistency problem arises via discretionary decisions. A discretionary economic policy is not only undesirable from the point of view of price stability, but also for the overall macroeconomic stability, as it creates incentives for irresponsible politicians to maximize short-term gains.

⁵ According to Helmke and Levitsky (2004): ‘formal institutions are openly codified, in the sense that they are established and communicated through channels that are widely accepted as official.

convention. However, this alone explains little about the formal institutionalisation of the theoretical idea of monetary dominance. Using North's framework of analysis, we argue that this institutionalisation results from the capacity of powerful interest groups to transform this idea into a convention, as well as from the incapacity of the groups of taxpayers to coordinate and better understand the alternatives at their disposal. Subjective perceptions that originates in the taxpayers' minds when there is an input of a certain stimulus (e.g., inflation → fiscal mismanagement) take a prominent position for the peaceful acceptance of policy priorities that not necessarily reflect their aspirations.

Precisely, the convention on monetary dominance would function as a 'normative representation' of how the institutional arrangement between the central bank and the government should be structured to avoid price instability. This convention is very relevant for i) guiding expectations about future prices; ii) creating patterns of fiscal behaviour, and iii) imposing sanction costs for the governments that deviates from this convention. Specially in countries relying on weak formal institutions, the government may be forced to renounce social objectives to avoid the political costs of economic sanctions. In the words of Hardie (2011: p.1), these financial sanctions represent the capacity of investors to exert discipline over the fiscal authority outside of the formal sanctioning mechanisms.

'Investors reward or punish governments for policy decisions directly through the cost and availability of financing. The more a government can borrow, the greater its immediate ability to carry out its chosen policies [...]. Even in less confrontational times, government debt is not only a transfer of resources between generations but potentially between successive governments'.

Second, we address the question of fiscal fragility under monetary dominant regimes. The emphasis placed on fiscal dominance eclipses the monetary mechanisms that would drive forward 'fiscal indiscipline' and, consequently, price instability. This partially explains why the negative externalities of monetary dominance have been surprisingly understudied. An important insight from the contributions we have analysed is that the majority of the authors have failed to address the fiscal costs of a dominant central bank. For instance, we know very well the benefits of inflation targeting, but very little is known about the fiscal costs to converge inflation into the target. Our findings go beyond previous research in this area. We suggest that monetary externalities do affect the fiscal balance of the government. Drawing upon on the study of the central bank interactions with the fiscal authority in Brazil, we bring this issue to the forefront.

Our analysis of the use of public-debt instruments for monetary purposes, hereafter repurchase agreements (repo)⁶, suggests that the single-mandate of inflation targeting have contributed to increase the fiscal fragility of the government during the period ranging from 2006 to 2016. This argument is consistent with the findings of Pellegrini (2017), for whom the current institutional arrangement for fiscal and monetary interactions in the country have been generating important fiscal costs to the government. His analysis of the balance sheet composition of 14 emerging economies central banks⁷ indicates that the extensive use of repurchase agreements for monetary purposes⁸ observed in Brazil had no equal. He estimates the outstanding amount of repos by calculating the quantities of public securities held by the central banks for monetary purposes (used as collateral in this operations) in the portfolio of rights with the central government (claims on central government). In this regard, the Brazilian portfolio corresponded to more than 24 per cent of GDP at the end of 2016 whereas in the Philippines, ranked second out of the fourteen countries, this amount represented only 3 per cent of the country's GDP. Following Magalhães and Costa (2018), we point out that the extensive use of repos for monetary purposes have attenuated Brazil's fiscal fragility, which is more evident during the downward phase of the economic cycle.

Finally, we raise the question of the impartiality of monetary choices. This hypothesis is grounded in the belief that central banks and fiscal authorities are asymmetrically exposed to conflict of interests. While the latter is said to be inefficient in dealing with opportunistic governments aiming at monetising public debt, the impartiality of the former suggests a monetary authority that is sheltered from the action of interest groups lobbying for a monetary policy stance that maximises the returns of the assets they hold. In the real world, however, the holders of financial assets have strong incentives to oppose policies that reduce return on financial investments – such as expansionary policies tackling unemployment. To understand this is to understand that inflation is not a uniform monetary phenomenon. Rather, inflation is primarily the outcome of a distributional conflict among two different interest groups: The smaller but organised group of investors⁹ and the larger but unorganised group of taxpayers¹⁰. The consciousness of the objective, structure and

⁶ Repurchase agreements functions as type of collateral-backed, short-term, interest-bearing loan. In these operations, the seller commits to repurchase the lent securities on a pre-established date accompanied with a pre-established remuneration. These operations are extensively discussed in Chapter 2 when analysing the practical aspects of monetary dominance.

⁷ The author uses data from countries with international reserves equal to or greater than 15 per cent of GDP. The 14 central banks are from: Brazil, Mexico, Chile, Colombia, South Africa, Turkey, Poland, Romania, Hungary, Russia, Philippines, Thailand, Malaysia and South Korea.

⁸ The use of the term “repo for monetary purposes” in this thesis indicates the central bank's use of repurchase agreements for liquidity management in order to make inflation converges to the target.

⁹ Along the lines of this thesis, we will be using the terms ‘bondholders group’, ‘financial interest groups’ and ‘small and organised interest groups of investors’ interchangeably. These terms will refer to the large financial institutions holding large amounts of government debt liabilities (e.g., the private banks allowed to engage in repo operations with the central bank of Brazil, pension funds or hedge funds).

¹⁰ Since the ‘investors’ are also taxpayers, we should clarify that the ‘group of taxpayers’ stands here for the group that has not financial power (bargain strength) to influence policy decisions.

functioning of the organised group is superior to that of the unorganised group. The taxpayers are can vote for a government strongly committed to reduce unemployment by means of expansionary aggregate demand policies. Which means that they may be more tolerant to inflation, while the investors understand that inflation must be targeted at a low level to which i) their financial wealth is not at risk of losing value; and ii) and prevent deflation. All of this suggests that central bank decisions are not purely ‘technical’ but highly political and, therefore, that the possibility of a ‘monetary capture’ should not be disregarded. The problem of regulatory capture¹¹ was introduced by Stigler (1971), and highlights the situation in which a political entity, policymaker, or a regulatory agency loses sight of promoting the collective interest and start serving as an instrument to promote and legitimize the private interests of organised groups. The regulatory problem provides important evidence about the non-impartiality of public institutions.

We transpose Stigler’s (1971) capture to the field of fiscal and monetary interactions and introduce the concept of ‘financialisation of monetary policy’. This form of financialisation of public policy sheds light on the influence of interest groups over monetary choices. We argue that each competing interest under inflationary conditions seeks in effect to monetise the assets it controls, whether by means of control of interest rates by the private financial institutions, or the type of debt instrument to be issued by the government. The use of repos for monetary purposes in Brazil also reflects much of the central bank’s exposure to conflict of interests. As we previously mentioned, these operations count among the main instruments at the disposal of the monetary authority for converging inflation into the target. Special mention should be made, however, of the importance of repo for the central bank counterparties in these operations. We will be showing that this debt instrument is one of the most important sources of funding for the commercial banks in the country. This ‘double character’ of repos and the conflict of interests it raises, are in close similarity to Hirsch’s (1978) ‘financial resistance’:

Since the financial confidence will necessarily be affected by state actions that transgress the bounds considered safe by financial interests, a powerful indirect deterrent against such actions is constantly at play. The phenomenon is a part of the complex mixture of antagonism and mutual support characteristic of the modern relationship between bankers and nation-states. The banks cast critical eyes on state interventionism in all but its original and still most pervasive form, the support provided by the central bank to the banks themselves. Large and powerful banks provide at once a potential captive source of finance for the state, and a source of potential financial resistance to it. Such resistance can be curtailed by internal regulations requiring funds to be channelled in ways specified by the state. But the efficacy of such regulations is weakened by external financial connections.

¹¹ Regulatory capture occurs when there is distortion of public interest in favor of private gains, caused by pressure of economic power interest groups. This phenomenon clearly affects the impartiality of public institutions. According to Bernstein (1955), Huntington (1952), Stigler (1971) and Laffont and Tirole (1991), capture takes place when the regulator fails to act on behalf of general interest. Instead, regulator’s choices are made so to legitimize the maximisation of private interests in regulated sectors.

The idea of a financialised monetary policy then reflects much of this dynamic. We use the example of the extensive use of repos in Brazil to introduce this concept, and illustrate the political organisation of financial interests around the central bank. Most of the studies have focused on quantitative data while demonstrating price level dynamics, but have disregarded the political aspect of this dynamics. Governments having antagonised their financial communities, have almost without exception faced a ‘capital strike’ to some extent. Our research study recognises that the rationale behind central bank choices is a field yet to be developed by political economists in Brazil. This is why we attempt to fill this gap through a qualitative investigation of repos, which requires a political economy analysis of the economic forces that lie behind the choice of this instrument for the fine-tuning of monetary policy.

In the light of these three questions, we advance the argument that both monetary and fiscal regimes of dominance share a similar *nature*. If we relax the hypothesis of central bank impartiality, we will observe that the use of public institutions for debt monetisation is not restricted to the regime of fiscal dominance. While short-sighted politicians are at the origin of poor monetary decisions in fiscally dominant regimes, financial interest groups, on the other hand, have strong incentives to behave in a similar manner under the regime of monetary dominance. Our principal objective here is to explain the limits of the theoretical idea of monetary dominance, but it is also important to understand that this idea wouldn’t have crossed the boundaries of academia without the action of organised interest groups. An understanding of the interrelationship of ideas, financial interest groups and central bank choices would provide a useful framework for identifying distortions in the central bank relationship with the government, which are analysed here from three perspectives: The financing needs of the government, the central bank commitment to curb inflation and the necessity of large financial institutions to lend money. Before proceeding with the analysis, this introductory section lays out the presentation and definition of the major themes that underlie our contribution to the political economy of fiscal and monetary interactions in Brazil.

1. Justification of the political economy approach for the analysis of fiscal and monetary interactions

The use of the theoretical framework of political economy to explain the behaviour of public institutions requires a brief reference to the history, relevance and evolution of this branch of study. The political economy approach highlights the importance of structural forces, historical processes, and institutions in shaping economic outcomes. Among the most relevant historical process in which political economists have been at the vanguard of social and economic changes, the passage

from feudal to modern society stands out. While the 1453 conquest of Constantinople, the 1492 European discovery of America, and the 1517 Protestant Reformation are the historical and military landmarks of this transitional period, we understand that the decline of nobility is the political economy milestone of this passage. The incapacity of nobility, the then-leading group¹², in designing new institutional arrangements, that could justify their position and existence, provides a consistent explanation for the collapse of medieval society. This incapacity was crucial for this decadent group to fail in anticipating the arrival of new theoretical ideas vehiculated by new interest groups.

At the theoretical level, the rediscovery of classical thought in the Renaissance, such as Plato's *Laws* and Aristotle's *Nicomachean Ethics* alongside the theological revolutions, have undermined the notion of a divinely-organised social hierarchy. The ideas of freedom, the dignity of all human being and equality were incompatible to the divine rights of the nobles and the privileges that followed. As for the new interest groups, their emergence follows a historical cycle of rise and fall of organised interests in the quest for political and economic power. The decline of nobility, therefore, was not only inevitable but necessary for the establishment of a new economic system that would reflect the interests of the emerging group. Therefore, the social acceptance¹³ of the ideas of freedom, justice and equality has then turned into an issue of primary importance for these new organised interests to be trusted as epistemic authorities. This is because the non-coercive legitimacy of this new group and principles was a *sine qua non* condition for the establishment and subsequent development of this new economic system. In the view of Tyler (2001: p. 416), 'if authorities are not viewed as legitimate, social regulation is more difficult and costly'.

It is precisely at this point where political economy, as a science, rose to prominence. The ideas vehiculated by prominent figures of this new field of study, such as John Locke and Adam Smith, conferred legitimacy for this emerging group for gradually replacing the then-prevailing economic rules. For instance, Locke's idea of *tabula rasa* provided fertile ground for the development of this new economic system. This notion, opposing 'divine' and 'natural' rights, attested the *coup de grâce* against medieval economic principles. The argument that human minds are born as a blank page (*tabula rasa*) had a double appeal. For the individuals, it offered a new perspective on their social existence based on the freedom to author their own souls and the direction of their lifepaths. On

¹² We understand that a class is itself a group, to the extent that people within each class share a social relationship and that not necessarily everyone within a group know each other—members only need to be bound by some social benefit, social stigma or cultural influence. This understanding of groups comes from sociology, to which a class is a group of people of equivalent status, often sharing similar levels of wealth, prestige and power.

¹³ Explanation for social acceptance to a new set of rules and laws without the use of coercion can be found in Max Weber's (1919) essay *Politics as a vocation*. He outlines three reasons that explain the ability of a particular power (group) in achieving compliance without the use of coercion: Belief in tradition, charismatic leadership and legitimate authority.

the other hand, it offered legitimacy for the emerging group's rejection of the notion of inherited (divine and social) privileges – the idea that supported nobility's legitimacy for years. Locke's criticism of human subordination to the divine will was mainly a contestation of the founding beliefs of feudal society on how social existence was to be produced. Justification for such existence, according to him, was to be found in the exercise of productive activities generating economic value.

For what reasons have the emerging group found Locke's argument a very appealing idea? At the philosophical level, the idea of *tabula rasa* stood in clear contrast to the *non-valeur*. In practice, the latter was used to point out that nobility was none but an obstacle to wealth creation and a heavy burden to society. It contrasted to the emphasis placed on the economic importance of work so as to justify social existence (Bendix, 1956). While nobility struggled to dispose of the unrealism that every decadent group creates about its real existence¹⁴, Locke's philosophy of the social value of work set the foundations for the new economic rules of resource allocation in modern society. The scientific knowledge expressed in terms of the political economy thus became meaningful to this end. It conferred legitimacy to the emerging group for conducting the change from the serfdom-based feudal mode of social organisation, to the new system based on the private ownership of the means of production, wage labour, profits, competitiveness and capital accumulation. Political Economy as a field of study is, therefore, an outcome of modern history. This science results from the clash between old and new forms of social organisation, as well as the respective ethics and modes of social regulation that follows. It was through the study of the correlation of dominant and dominated forces, and the conceptualisation of power and wealth relations that this branch of knowledge established some of the principles of modern economics. As a result, we can deduce that the power of an interest group to shape economic preferences in a non-coercive manner goes together with the necessity to legitimise a doctrine of economic thought.

This historical account points out to the relevance of political economy for studying the interaction between theoretical ideas, legitimacy and the action of interest groups. The investigation of the underlying forces promoting specific agendas indicates that formal and informal institutions play a pivotal role in preventing or prompting the collapse of economic regimes. The weaker the formal institutions (e.g., law enforcement) in regulating private interests, the strongest the probability of a country to have the prospects for sustainable growth undermined (Stiglitz, 1998) via the process of regulatory capture. The analysis of institutional changes is, therefore, of primary importance to the understanding of the decline and rise of economic regimes which, in turn, is preceded by a

¹⁴ In literature, the decadence of the Nobles and the strive to justify their social existence can be compared to the 'sorrowful figure' of Alonso Quijano, Miguel de Cervantes' Don Quixote de la Mancha (1605).

change in the balance of forces¹⁵. Drawing upon the example of the fall of nobility, there was a failure to anticipate that the non-coercive pledge of the emerging group consisted, above all, in the quest for legitimacy of the new modes of social regulation and economic rules. Consequently, social demands for a new set of institutionalised economic principles based on freedom, justice and equality have been disregarded by the nobility. With the assimilation of these ideas by different strata of society, people had no more incentives to support the then-prevailing system. It ultimately culminated in the erosion of the social conformity¹⁶ with the laws and rules at the time. The crisis that followed was, therefore, the unavoidable outcome of this transactional period in which decadent and emergent forces were disputing the legitimacy to make of informal institutions (reflecting their view and interests), formal institutions that were socially accepted.

At this point, we highlight another core notion issued from political economy literature useful for the purposes of this thesis: self-interest. Very few concepts were so influential to ingrain the egalitarian sense into the general understanding of 'public interest' like this focus on the one's self. At least until the 17th century in Europe, the association of public interest to divine rights was part of the society's unquestionable truths. Once the doctrine of natural rights came to be socially accepted, the relations of serfdom (either with God or the Lords) came into fierce criticism (Gunn, 1969; Gilchrist, 1969). At the top of the self-governed minds, the freedom for subordinating has replaced the subordination of freedom. It was within this context that Adam Smith (1776) suggested the quest of self-interest as a mode of social regulation. According to him, the founding principle of self-interest (vested, public, group or private) bounds all human beings, and constitutes the base of the wealth of nations. He thinks of social order in a way that harmonizes the potential chaos of the pursuit of individual interests and translates it into welfare for society. Instead of clashing, inducing Hobbesian state of nature or Locke's unstable peace, private interests are governed by an invisible hand that guides them towards collective well-being. To illustrate his argument, Smith compares the superiority of the 'advanced society' in producing wealth to the poverty of 'primitive society'. The freedom to pursuit self-interest precedes the division of labour. The whole society benefits from individuals free for acting in his or her own interest, in order to increase wealth and improve life quality.

It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our necessities but of their advantages (Smith, 1776: p. 19).

¹⁵ Berend (2006) and Maravall (1997) provide historical accounts of this interaction over the last centuries in Europe, while Bernholz (1998) offers more theoretical representation of the causes of change in economic regimes.

¹⁶ The theory of conformity states that we act in accordance with the rules because we accept their legitimacy and are encouraged by the approval and reward obtained from others (Bernheim, 1994).

Self-interest would then be the harmonious solution for the conflicts proper to the hierarchical and dispersed feudal society. Smith was thus concerned about the necessity of rupture with the Catholic ethics, i.e., the moral system prevailing in feudalism. And this rupture should pass through the social acceptance of self-interest as a mode of regulation. To do so, the socially accepted truth of 'loving your neighbour as yourself' had to turn into 'love yourself as your neighbour'. Otherwise stated, the founding principle of the new economic system (self-interest) was inconsistent to the old (altruism)¹⁷ system of moral rules based on Christian ethics.

Do nothing out of selfish ambition or vain conceit. Rather, in humility value others above yourselves, not looking to your own interests but each of you to the interests of the others (Phi. 2: 3-4, New International Version).

There was no room for both the moral value of unselfish behaviour and Smith's natural self-interest. In the same way as Locke, Smith's principle of self-interest has conferred legitimacy for the emerging group to create institutions that would best shape society's economic preferences, and dislodge nobility from their privileged position. The quest for self-interest, not unselfishness, became the benchmark for explaining the inextricability and meaningfulness of social and economic relations. This new ethics came to replace the old social ties that bounded individuals together. Individuals were to be united by the freedom to trade following Smith's (1776) natural propensity to barter. From a political economy perspective, these claims of freedom, either of trade, labour, agriculture, industry, or to compete (of both capital and labour) are not void of context. They are part of the underlying power struggle for establishing a new economic system, rejecting all kinds of regulations, incentives, monopolies, restrictions or specific protection of one sector over another that prevailed in the feudal society.

This new system, economic liberalism, was conceived on the belief that freedom and competition would generate collective gains and general prosperity. However, if Darwin's reasoning on competition is to be taken into account, the logical tendency is it to fade away on its own. If it is true that competition can affect prices positively, it can also lead to the triumph of the strongest, the advent of natural selection, and a situation of competitive disadvantage (Powell and Arregle, 2007). Initially restricted to the private sector, this logic of competition has also permeated the public sphere. The potential benefits of competition among public institutions are highlighted in different theoretical contributions indicating, explicitly or implicitly, its positive effects over the efficiency of the policymaking process. Among these contributions, Sargent and Wallace's (1981) 'unpleasant monetarist arithmetic' provides a good illustration of the pervasive influence of the

¹⁷ The controversy between altruism and self-interest is the subject of a long and inconclusive debate on the main characteristics of human nature. Its influence ranges from the produced an extensive scientific literature on the foundations of justice to behavioural economics and moral philosophy. For further details see Grant's (2000) *Altruism and Christian Ethics*.

idea of competition within and between public policies. Under such an influence, fiscal and monetary interactions have been redesigned to comply with the standards of competition and performance.

All of this suggests that interest groups are powerless without a socially legitimised theoretical idea. This is a central notion that justifies the choice of the political economy approach for the study of fiscal and monetary interactions. For political economy addresses issues directly linked to material (economic and social) interests and assumes that there is not and cannot be ‘impartiality’ in public decisions. The arguments and findings of political economists have always been closely linked to the interests of organized groups. Locke and Smith did not seek, with their contributions, to constitute a trivial scientific discipline. They sought to understand the social organisation prevailing in feudalism before formulating the founding principles of modern economic system. By articulating ideas about power and wealth, this discipline has been consolidated as a tool of great practical significance in assisting political decisions - whether public or private.

Hence, following the long-standing tradition of political economists, we attempt to shed light on the underlying forces conferring legitimacy to Sargent and Wallace’s (1981) ideas. It means that we do not accept the argument of monetary dominance as given, without investigating the interests prompting the institutionalisation of this theoretical idea. To the contrary, the theoretical framework of political economy provides a broader understanding of the influence of interest groups on public institutions. And, thus, to explain the way institutions are constantly changing in their fundamental structure. This justification for the political economy framework can be summarised in the words of Mukand and Rodrik (2018: p. 1): “By focusing on interests, political economists have shed light on policy and institutional change and the persistence of inefficient policies in a variety of contexts”.

2. Vertical coordination and the idea of dominance in economic policy

The different doctrines of economic thought have attributed particular importance to the idea of ‘dominance’ while discussing the optimal role of fiscal and monetary policies. In what has become one of the most fruitful macroeconomic discussions of the 20th century, Monetarists and Keynesians have confronted their views on the benefits of having dominant monetary or fiscal policies (Musgrave, 1987; Friedman, 1968; Keynes, 1936). The ideas of Milton Friedman successfully challenged the Keynesian consensus that prevailed in the post-war, and prompted the so-called monetarist counter-revolution. There was considerable contestation over Keynesian-

inspired macroeconomic theories of fiscal policy after the arguments of automatic stabilisers (Friedman, 1948), the presence of lags in fiscal policy (Friedman, 1961) and the Presidential address to the American Economic Association on the role of monetary policy¹⁸ (Friedman, 1968).

More than shifting the focus away from Keynesian-inspired theories of fiscal policy, Milton Friedman helped to lay the intellectual foundations of economic neoliberalism. His critique of the Phillips curve carried out a strong message against all form of state interventionism, and consolidated the idea of a ‘natural unemployment rate’¹⁹. In the absence of monetary illusion, institutional rigidities, and with expectations-adjusted, unemployment rate would converge to a ‘natural’ level. Although the details of this convergence are assuredly peculiar to Phelps (1967), it is noteworthy the similarity of Milton Friedman to Locke with regard to the purpose of creating a socially acceptable truth based on natural philosophy. The influence of Locke’s natural theory over Friedman’s ‘natural’ unemployment corroborates this comparison. We observe that, once again, natural philosophy played a pivotal role in creating a valuable knowledge for the legitimacy of policy decisions. While the ideas of Locke and Smith were at the very basis of the transition process towards liberalism, Friedman’s have been playing this role to the consolidation of neoliberalism.

In a similar manner to what caused nobility to decline, the contemporary process of policy legitimisation passed through the demise of a consensus – in this case, from Keynesianism to Monetarism. Precisely, this theoretical view points out that ‘excessive’ (social) public spending would have subverted the ‘good theory’ grounded in the ‘laws of nature’, and thus shifted the labour market out of a ‘natural’ balance and the GDP growth out of its ‘potential’. Any deviation from the natural rate of unemployment would pressure wages upwards, forcing companies to pass on increases in product prices, generating inflation. Inflation, therefore, is a result of the rise in the level of employment above the natural rate by external market interference. This logic is at the very basis of orthodox thinking and is at the heart of the inflation targeting – grounded on the equilibrium of ‘natural rates’ of employment and output. To summarise, this argument provides a theoretical justification to condemn fiscal intervention, for the sake of central bank credibility. The recommendation for central bankers made by Goodfriend and King (1997: p. 26) implies much of this view:

¹⁸ The American Economic Review ranked this contribution among the top 20 most influential articles published during its first 100 years.

¹⁹ Friedman (1968: p. 8) defined the natural rate of unemployment as: “the level that would be ground out by the Walrasian system of general equilibrium equations, provided there is imbedded in them the actual structural characteristics of the labor and commodity markets, including market imperfections, stochastic variability in demands and supplies, the cost of gathering information about job vacancies and labor availabilities, the costs of mobility, and so on”.

The recommendation is that monetary policy should stabilize the path of the price level in order to keep output at its potential. This policy is “activist” in that the authority must manage aggregate demand to accommodate any supply-side disturbances to output.

The term ‘activist’ here stands for the ‘dominance’ of monetary goals, and brings implicit the idea of a *vertical coordination* within fiscal and monetary authorities. This hierarchy-based coordination scheme assumes that monetary and fiscal objectives are always on a collision course²⁰ and, therefore, that the subordination of fiscal goals to the central bank would be the best alternative to avoid any ‘accident’. The main concern with the rationale behind this institutional arrangement relates to the establishment of a ‘coordination for the powerful’, i.e., one of the two institutions (monetary or fiscal policy) would face incentives to impose the equilibrium that maximises its preferences. This concern had been absent since the early monetarist contributions, and it is manifested in the narrow focus on the dismissal of fiscal policy, so to explain the need for dominating this policy. Friedman (1960), grounded on the monetarist understanding that nominal income and prices are functions of the money supply (and not of the volume of aggregate demand, as argued by Keynes), advanced the idea that fiscal policy should primarily be accommodating of monetary choices. Hence, the effectiveness of fiscal policy was to be conditioned to variations in the quantity of money. If not, the potential short-term effects of public expenditures were to be completely offset. Friedman’s argument, highlighting the limits of fiscal policy in stabilising the price level, was of crucial importance for providing a theoretical justification to the regime of monetary dominance.

The central problem is not to construct a highly sensitive instrument that can continuously offset instability introduced by other factors, but rather to prevent monetary arrangements from themselves becoming a primary source of instability. What we need is not a skilled monetary driver of the economic vehicle continuously turning the steering wheel to adjust to the unexpected irregularities of the route, but some means of keeping the monetary passenger who is in the back seat as ballast from occasionally leaning over and giving the steering wheel a jerk that threatens to send the car off the road (Friedman, 1960: p. 23).

Despite the idea of a dominant central bank had good acceptance within the monetarist circle in the 1960s, the socially legitimacy of this idea was yet to be reached, so as its acceptance at the policymaking level. The lack of empirical evidence on the benefits of monetary dominance was the last frontier for a restructure in the institutional arrangement for fiscal and monetary interactions to be politically justified. The appearance, great influence and expansion of Sargent and Wallace’s (1981) ideas should be understood within this context. Their contribution came to satisfy a specific need: The empirical demonstration of fiscal dominance is the corollary of theoretical discussions about the establishment of a monetary dominant regime, while providing politicians and central

²⁰ For instance, this view is implied in Wallace’s (1987) explanation of fiscal and monetary interactions. He sees these interactions as a “game of chicken” in which the first mover constrains the policy options of the ‘follower’.

bankers a strong argument for institutionalising the subordination of fiscal policy to monetary goals.

In this seminal contribution, Sargent and Wallace (1981) firstly presented empirical evidence of the harmful effects of fiscal dominance over monetary policy. At the origin of these effects, they point out the independent choices made by a fiscal authority about the future path of the primary balance, but regardless of the debt level. Other than constraining the effectiveness of the monetary policy, these exogenous choices would generate two different undesirable outcomes. On the one hand, fiscal dominance would increase the possibility of monetisation of the public debt and the consequent rise in future inflation expectations. On the other hand, this would raise concerns about the path of public indebtedness and hence increase the risk premia (i.e. the cost of borrowing). These two aspects of fiscal dominance combined would then compel the monetary authority to accommodate (i.e. be dominated by) government choices via Seigniorage revenues. Seigniorage would thus be used to cover the difference between the fixed amount of tax revenues and the market demand for public bonds. If the government deficit is financed via the issuance of public debt securities with a real interest rate (r) higher than the growth rate of the economy (g), the most likely outcome would be the important increase in the debt to GDP ratio. Which consequently would cause the monetary base to expand and the ‘inflation tax’²¹ to emerge.

Under these circumstances, the central argument advanced by the authors is that the use of restrictive monetary policy, in which $(r) > (g)$, lead the agents with rational expectations to anticipate the future levels of monetary expansion. And, thus, to define higher price levels in the present. The efficiency of monetary policy in controlling inflation, under a scenario of fiscal dominance, would, therefore, be strictly associated to the ability of the central bank to subordinate fiscal choices to the objectives of monetary policy.

By doing this in a binding way, the monetary authority forces the fiscal authority to choose a $D(t)$ ²² sequence consistent with the announced monetary policy. This form of permanent monetary restraint is a mechanism that effectively imposes fiscal discipline. (Sargent and Wallace, 1981: p. 7)

In this theoretical perspective, the emphasis is placed on the primacy of the central bank’s objectives. The firm commitment of the monetary authority with the goal of price stability would,

²¹ Inflation tax relates to the gain obtained by the government from issuing more money to finance its expenditures. This increase in the volume of money in circulation in the country raises inflationary pressures. Thus, the ‘damage’ caused to the taxpayers by high inflation is proportional to the revenue obtained by the government by issuing more money. That is why Friedman (1984: p.1) compared it to a tax: “Insofar as it [the deficit] was financed by printing money, we paid for it by the hidden tax of inflation; insofar as it was financed by borrowing, we paid for it in the form of an even more subtle hidden tax on wealth”.

²² “We will refer to $D(t)$ as the deficit, but keep in mind that equals the real deficit as ordinarily measured less real interest payment” (Sargent and Wallace, 1981: p. 3).

therefore, compel the government to adopt an accommodative fiscal policy. Otherwise stated, the intertemporal control of fiscal policy is the anchor of monetary policy and the centrepiece of a macroeconomic policy committed to fighting inflation.

The influence of the ‘unpleasant monetarist arithmetic’ goes beyond the monetarist framework, to reach a pivotal place in shaping the understanding of fiscal and monetary interactions within other doctrines of economic thought. This is the case for the Fiscal Theory of the Price Level – hereafter FTPL (Leeper (1991), Sims (1994, 1999a), Woodford (1994, 1995, 1996, 1998a, b, c, 1999, 2001) and Cochrane (1999, 2001, 2005, 2018)). At first glance, the FTPL seems to challenge the monetarist view of monetary dominance. However, rather than a rupture, we understand that the FTPL joins the debate about fiscal and monetary interactions as an extension of the monetarist doctrine. Although they realise that the small size of seigniorage is irrelevant for debt monetisation, their findings shared the monetarist understanding about the inflationary impact of government spending and, thus, served to reinforce the held belief in the need to impose budget constraints (dominate) fiscal choices. Here again, the underlying assumption of a dominant monetary policy is deployed to explain the necessity of an independent central bank to ensure price stability – reflecting though the force of the monetarist doctrine in shaping academic discussions on the role of fiscal policy in accommodating monetary choices.

It is worthwhile emphasising that Sargent and Wallace’s (1981) diagnosis and conclusion on the ways and means to cope with inflation is strongly influenced by the monetarist view on the topic, i.e., that “Inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output” (Friedman, 1970: p.11). In their conclusion about fiscal dominance, and the implicit claim on monetary dominance, no institutional variables are considered, there is no historical context to the discussion, and no explanation is offered about the organisation of economic interests around the fiscal and monetary authorities. In other words, they pay little attention to the fact that inflation is not a uniform phenomenon but a quintessential allocation and welfare problem and might be a syndrome of very different group conflicts. Do these considerations mean that we must reject that inflation is *also* a monetary phenomenon? By no means, but it imposes great caution about imputing simple correlation between monetary expansion, the spiral of inflationary acceleration and the need for a dominant central bank to prevent it all. They assertedly explain *how* inflation may occur, but it alone cannot explain *why* a dominant central bank would be the optimal choice for preventing inflationary pressures to rise. Specifically, no mention is made to the economic forces operating over monetary decisions.

Anderson (1978) sheds light, for instance, on the role of monopolies in triggering the inflationary process. His analysis of the sources of inflation in Britain sheds light on the fact that inflation may arise from authorities that lack power for constraining the action of powerful monopolies. It will force prices to rise, which, consequently, would lead authorities to respond by increasing the money supply. In the same vein, Di Tella (1979) and Stigler (1962) also contends that price volatility correlates to an underlying struggle between oligopolistic groups for a share of the national income. A more recent study conducted by Aquanno and Brennan (2016: p. 241) points to evidence that inflation in Canada is rooted in institutional power and distributive conflict, with implications of practical significance for the conduct of monetary policy:

Beginning in the late 1970s, the Canadian state and the Bank of Canada embraced an anti-inflationary monetary policy. If inflation is beneficial for the working and middle classes and for smaller firms, and if inflation is harmful to larger firms and the top income group, then one interpretation of the shift toward anti-inflationary monetary policy regards the use of state power to redistribute income from labor to capital, from small to large firms, and from lower to upper echelons of the personal income hierarchy. Far from the neoliberal globalization, implying the “retreat” of state power, in this instance the meaning of neoliberalism is the utilization of state power to restrain the wage demands of the working class and to strengthen the social position of capital, especially dominant capital. Under this interpretation, what is sometimes referred to as “sound monetary policy” is, in effect, working and middle class-restraining, business class-promoting state policies that redistribute income upwardly.

The relevance of ‘conflict inflation’, also found in Lavoie (2002) and Rowthorn (1977), challenges the monetarist assumptions on the causes of inflation, and, consequently, Sargent and Wallace’s (1981) policy prescription of *vertical coordination* for correcting fiscal and monetary distortions. More important, it challenges the idea of *domination* in which most of the literature is grounded on. For the sake of our argument, we go beyond the well-known causes of price instability generated from inefficiencies in fiscal and monetary interactions. Our contribution sheds light on the political reasons for the domination-based solution to prevail over *horizontal* coordination. None of this is to reject the threat fiscal dominance represents to the monetary goal of keeping the overall price level stabilised at a low level. Rather, we draw attention to the fact that scholars have been moving around two extreme poles, i.e. from a dominance (fiscal) to another (monetary), rather than contemplating a solution outside of the realm of *domination*.

3. The idea of horizontal coordination

The horizontal coordination embeds a questioning of the theoretical assumptions that support the hierarchisation of macroeconomic objectives. We question here the reasons for fiscal and monetary dominance to be studied in terms of domination, i.e. within the perspective of vertical coordination. As we have discussed, theoretical discussions on the hierarchy of policy objectives and the

legitimacy conferred to the dominance of monetary objectives goes parallel. This is corroborated by the emphasis placed on vertical coordination (domination) by monetarist theory, and more recently by the so-called ‘new consensus’ in macroeconomics. The held belief that the objectives of inflation and full employment are traded-off against one another anchors the theoretical basis of vertical coordination. This dilemma, expressed in the Philips curve, has consolidated the idea that both goals cannot be attained simultaneously. And, therefore, that it would be meaningless to think of fiscal and monetary interactions outside of vertical coordination.

The Phillips curve has long been the benchmark in academia for explaining the link between inflation and unemployment. Implicit in the rationale of this curve, the level of the non-accelerating inflation rate of unemployment (NAIRU) provides, at least in theory, a guide for policymakers to assess the economic costs of a supply or demand policy. However, a reliable measure of the Nairu on the basis of a wage-setting curve (such Philips curve) is fairly unrealistic, as the parameters for calculating this rate are numerous, and the variety of mechanisms involved are very complex and unquantifiable. Thus, equilibrium unemployment²³, which remains essentially a theoretical concept, may not have a practical significance. While this analytical framework provides important insights about the determinants of unemployment, it remains insufficient as a guide for macroeconomic policy. The appeal to this trade-off emerged to play a defining role in the legitimation of modern comprehension of fiscal and monetary interactions – a role that remains central nowadays. It facilitated the provision on more information on the possible components of a supply policy than on the optimal balance between supply and demand policies.

Although it is not our objective to deepen the debate on the determinants of unemployment²⁴, it is worth noting that the practical application of short-run Phillips curve and the NAIRU (at the heart of the practical aspects of monetary dominance, i.e., inflation targeting and central bank independence) remains questionable. Despite the recent developments and various adjustments, both theoretical instruments are far from being consensual. The discussion surrounding the role of expectations in the choice of monetary policy raises questions about the very existence of the trade-off itself. According to Sicsú (2002), there is no broad evidence of the applicability of the

²³ Modern theories of equilibrium unemployment have Friedman's (1968) natural unemployment as their starting point. However, unlike natural unemployment, whose level is invariant, at least in the medium term, equilibrium unemployment can change and thus be influenced by economic policy decisions. He assumes that these modifications involve structural shocks whose effects may be permanent, unlike the NAIRU on which these same shocks will have only transitory effects. By highlighting the role of structural shocks, the proponents of equilibrium unemployment opened the way to a very rich explanation of the formation of unemployment and its persistence. But this explanation is probably the less parsimonious one. A natural counterpart to such an approach is the difficulty of theoretical modelling and the lack of empirical developments: because it poses fairly extreme evaluation problems, equilibrium unemployment remains in many respects a theory without measurement.

²⁴ Coibion, Gorodnichenko and Kamdar (2018) and Forder (2014) provide a pertinent overview of this topic.

Phillips curve to explain the formation of inflation expectations under market imperfections. On this trade-off Blanchard (2004, p. 190) states:

This relation has held quite well since 1970 [...] But evidence from the earlier history, as well as the evidences from other countries, points to need to for a number of warnings. All of them are on the same theme: The relationship between inflation and unemployment can and does vary across countries and time.

When considering the spatial-temporal dimensions of the relationship of inflation to unemployment there is a necessity to recognise qualitative differences across different periods. In Brazil, for example, studies on inflation and unemployment confirm the existence of relevant inflationary pressures even in the long run stemming from imported inflation, the oligopolistic structure of the banking sector and distributional conflicts, which casts doubt on the hypothesis that supply 'shocks' have a zero average in the long run (Suma and Macrini, 2011). Blanchard (2005) goes beyond mere call for cautiousness on the relationship between inflation and unemployment. He calls for a rethinking on the one-size-fits-all macroeconomic conclusions, that does not integrate political and economic specificities of each country. This is why we bring this discussion to the realm of political economy. In so doing, we assume that expectations in the choice of monetary policy are not formed rationally but guided by a convention (monetary dominance) and, hence, that the choice of the primary macroeconomic goal (inflation or full employment) do not derive from quantitative economic rationale alone: this decision is also political. It is constrained by the internal and external coercive power of interest groups, which reflects the bargaining strength of these groups vis-à-vis policy makers for coordinating the expectations of the agents around the benefits (disadvantages) of vertical (horizontal) coordination. This management of expectations stands in clear similarity to what is described by Langley (2002) as 'shared meanings' of the *mentalité* of investors. Hence, this convention around the necessity of a dominant central bank operates throughout two different levels: i) Theoretical, via the idea of monetary dominance; ii) Practical, according to the choice of central bank instruments to meet the targeted inflation.

A set of instruments is directly allocated to the pursuit of each of the fiscal and monetary objectives. From where we can deduce that the maximisation of these objectives derives from the instrumental capacity of both institutions. Consequently, to think of a trade-off between fiscal and monetary goals, is to think of a problem of minimax: Policy makers are confronted to a maximisation of objectives according to the possibility frontier of fiscal and monetary instruments, in order to obtain a (strategic) logic of priorities among the objectives. As the ordering of priorities may not correspond to the ordering of instrumental possibilities, an effective strategy (in technical and political terms) seeks to achieve a maximum of priority for a minimum of instrumental inefficiency.

This raises a fundamental question regarding the ordering of priorities: Are the instrumental tools of fiscal and monetary policies equally designed and distributed, in a manner that ensures both institutions an equal treatment in the relationship ‘goal-instruments’? Šehović (2013) suggests a negative answer to this question, which might explain the origin of competitive behaviour and unreasonable dominance within fiscal and monetary interactions.

This brings out the idea of vertical coordination. While thinking of this sort of institutional framework, we think of a ‘coordination of equals’ – which stands for the equality in the use of policy instruments to achieve the objectives to which they are associated. It contrasts to the unequal use of policy instruments observed under vertical coordination in two aspects: i) the call for non-discretionary rules to **both** institutions (and not only fiscal) in the use of their respective instruments; and ii) the non-domination of one instrument over the other. The extensive use of repos for monetary purposes, a practical aspect of monetary dominance in Brazil, illustrates very well these distinction features of the two modes of coordination. Our study shows that the use of this instrument for the fine tuning of monetary policy have constrained the use of the fiscal policy instrument of public spending during the period 2006-2016. The adoption of a rule of reaction by the monetary authority, based on dominance, under the regime of inflation targets – sustained by the hypothesis of neutrality of money and the Nairu – has been presenting controversial results for the Brazilian economy. The dominance of monetary instruments and objectives has produced significant negative externalities over the economic growth and fiscal position of the Brazilian economy. It has also been gradually reducing potential output through low investment rates. It should be noted that while the rules for fiscal consolidation are well established in the country, the same does not apply for the use of the monetary instrument of repos. The came into force of the law on Fiscal Responsibility in 2000 contrasts to the absence of a Law of Monetary Responsibility.

Hence, as economic theory considers that there is an insoluble dilemma between the objectives of these two institutions, it is necessary to think beyond conventional economic rationality to foresee objective solutions for this trade-off and, consequently, for a transition from coordination based on domination (vertical) to horizontal coordination. Thus, here we have a dilemma that cannot be possibly solved only with a narrow thinking on the interaction of these two so-called incompatible objectives (inflation or full employment) and, hence, neither in terms of dominance alone. Above all, horizontal coordination provides an useful framework for reconsidering the idea of dominance in economic policy, because the coordination problem is basically one of an effective shortage of instruments. Horizontal coordination is then a call for rethinking the foundations of fiscal and

monetary interactions, and the negative externalities produced by a dominant-based coordination scheme.

4. Interest groups and the legitimacy of an economic idea

The organisation of political groups around specific interests is shaped by the political and economic context where these groups are inserted in. This is the main conclusion of the political economy analysis of the fall of nobility. It means that the rationale of policy choices cannot be set apart from the way interest groups are organised around public institutions. If the sources of inefficiency in economic policy are to be studied, it also calls for an analysis of the logic of collective action of interest groups. Their action *per se* does not lead to suboptimal resource allocation in the economy. Rather, the existence of organised groups is a *sine qua non* condition for a democratic system to work properly. What is problematic, however, is the search for unfair policy favours that would maximise private gains at the expense of collective losses. Under these circumstances, not only public interest would be under threat but also democracy and freedom itself.

We proceed to a case study of the influence of interest groups over the policymaking process. But before doing so, a clarification on the definition of interest groups seems necessary. Truman (1951: p.33) suggests a definition of interest groups that we will be relying on for the purposes of this thesis.

[A] shared-attitude group that makes certain claims on other groups in society, for the establishment, maintenance, or enhancement of forms of behaviour that are implied by the shared attitudes [...] and their basic objective is to have access to one or more key points of decision in the government.

The reason for this choice is twofold. First, Truman's view echoes an earlier call from Max Weber (1919) on the link between the stability of political institutions and the action on interest groups. According to him, the existence of conflicts of interest is at the very nature of policy decisions, but the government is not a neutral observer, nor an absent force. Second, the author defines interest groups into political and non-political. For instance, interest groups pledging for political favours are different in nature of those organised around familiar or religion goals (unless, of course, the purposes of these groups do not turn into political ones). An interest group is said to be political when the shared attitude of its members converges towards the quest of influence over public institutions. Specifically, we focus on the action of political interest groups over monetary decisions.

Buchanan and Tullock's (1962) approach reflect much of this dynamic. When policy decisions are oriented to maximise private gains, the small but well-coordinated interest groups are likely to

strengthen their bargaining strength *vis-à-vis* the government. This situation generates a vicious circle in which the incentives created by policy favours finally reinforce the power of the advantaged groups. It propels their influence to keep lobbying in support of the policy that maximises their benefits the most. All of this occurs at the expense of the much larger, but dispersed, group of taxpayers. Although bearing the social and economic costs related to the maximisation of private gains, the members of the taxpayers group face weak incentives to engage in a collective action to reverse this situation. This inaction is explained by Olson (1965: p. 2) as follows:

‘[U]nless the number of individuals in a group is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, rational, self-interested individuals will not act to achieve their common or group interests. In other words, even if all of the individuals in a large group are rational and self-interested, and would gain if, as a group, they acted to achieve their common interest or objective, they will still not voluntarily act to achieve that common or group interest.’

In brief, the larger the group, the less it will promote the common interests of its members. And consequently, the further away it will be from effective collective action. This is because an individual, even if not contributing to the provision of a collective good, he or she could, under certain conditions, equally benefit from this provision. Even if the benefits from a collective action exceed the costs of cooperation, this individual would still face incentives to be a *free rider*²⁵. According to Olson (1965), this would be the most rational choice for a member of a large group. Whenever the benefits of individual contributions to the provision of a collective good are unnoticed for the group as a whole, free-rider behaviour will stand as the most rational choice. Otherwise stated, unconstrained individual maximisation in large groups makes actions that are rational for each individual irrational for all individuals together. He highlights three main aspects of group size and effective collective action: 1) the larger the group, the smaller the individual fraction of the collective benefit; 2) the larger the group, the less likely it is that one member alone will earn enough to bear all the costs to provide the collective benefit; and 3) The greater the number of members, the greater the cost of organization. In the absence of coercion or selective incentives, large groups will usually not be able to provide for their common interests.

The literature on interest groups identifies three fundamental factors explaining the success of interest groups to succeed in their political activities: 1) strategic position in society; 2) the level of internal cohesion; and 3) a wide networking at the top level of decisions, ranging from CEOs of

²⁵ Microeconomics definition of free rider behaviour stands for the situation in which one or more economic agents benefit, without any contribution, from the provision of a certain good. This problem arises in the provision of a public good, since its characteristics are non-rival and non-excludable, i.e., it cannot be assigned a property right. Thus, individuals do not have incentives to pay as much as the good is really worth to them, and that is precisely why the provision of public goods is often lower than what would be socially desirable.

the most powerful economic sectors to high officials at the government. The addition of a fourth element to this categorisation is one of the contributions of our thesis: The role of conventions in legitimising the actions of interest groups. It can be expressed, in the language of the theory of conventions, as the need for a certain degree of legitimacy with regard to the chosen rules. We then once again turn to Mukand and Rodrik (2018: p.30), for they bring into light a central question in our analysis: “If an [interest group] pushes a particular policy, is that because they have a vested interest in that policy or because of ideational forces that shaped their understanding of where their interests lie?”.

We provide an answer this question by combining Olson’s (1965) logic to Orléan’s (1994) theory of conventions. Olson provides a pertinent explanation about the efficiency of the collective action of small and organized interest groups. However, the power of these groups is not only based on efficiency (nor only on force), but on their legitimacy. If we assume that domination exists, we must also admit that it cannot have social acceptance without being accompanied by a legitimisation process (all domination tends to be presented as ‘legitimate domination’) that tend to dissimulate the inequality that it produces and reproduces between the domination group (e.g. investors) and the one that is subject to dominance (e.g. taxpayers). Thus, we argue that the relationship between interest groups and conventions is established through the dissemination of the latter by the former through epistemic authorities. This means that the convention is all the more likely to disseminate and be perceived as a true idea if it is disseminated by a scientific community or persons of eminence.

The convention is generally based on scientifically established theory, except that this theory is subject to implicit assumptions that are not very easy to define (e.g. natural unemployment → inflation; sovereign debt sustainability → fiscal austerity; central bank independence → price stability, etc.). The challenge would then be to explain how rational taxpayers can believe these conventions in a logical manner, thinking that these are right and fair. We believe that because of bounded rationality (Simon, 1982), individuals have a propensity to deploy familiar ideas or notions, that they think logically reliable, to formulate a logical perception of the reality. If, for example, the theory of monetary dominance is perceived as a theory that provided a logical answer for a difficult issue (e.g., dominant central bank can cope with inflation or increasing public debt), the same propensity will serve the analysis of another situation, regardless of similarity, using the same *modus operandi*.

Now, in the specific case of the convention on monetary dominance due to a so-called irresponsible fiscal authority generating inflation, the ordinary citizen only has to listen to the speeches of

technocrats, politicians or the media to feel that he himself has a valuable reason to share of this explanation provided by these epistemic authorities. The epistemological effect will play a very important role. If very well-educated and empowered people hold the belief that inflation and rising public debt are primarily linked to fiscal misbehaviour, and that everyone can see for themselves that price levels and debt are uptrend, then any reasonable human being would be predisposed to think that he or she has just found a sound explanation for inflation as well as for the policies of fiscal austerity. This is why the dominant interest group will attempt to spread the convention that suits their interest the best, via the epistemic authorities of the system, for the consolidation of their position. This means that they will try to have an influence over different levels of knowledge production, ranging from the educational system, to academic research and the mass media. For this reason, the dominant interest groups will strive to maintain the stability of the formal institutions, but also the convention that legitimises their vested interests. This group will present to all members of society the existing convention as ‘natural’ and ‘necessary for the common good’.

Drawing upon this argument, we formulated an explanation for the action of financial interest groups in Brazil. The action of interest groups over monetary choices in Brazil is particularly understudied. Few exceptions are: Teixeira and Pinto (2012) Olivieri (2007) and Bresser-Pereira (1988). We will be exploring the practical aspects of the convention on monetary dominance in the country through the analysis of the extensive use of repos for monetary purposes. This will help to broaden current understand on how legitimacy has been conferred to the practical aspects of this convention. In the words of Orléan (1994: p.16) in the introductory lines of his *Analyse économique des conventions*: ‘the main ambition of the concept of ‘convention’ is to understand how a collective logic is established and what resources it must mobilize to stabilize itself’. He goes further to explain the coordination of expectations through a convention:

The interest that economists have shown in the conventions stems from the fact that this notion reveals a very different way of equilibrium from the Walrasian one. [...] It can be said that the convention overtakes the economic actors to become a general belief in the behaviour of the group, a generalized belief that makes coordination easier and self-replicating. Contrary to the Walrasian equilibrium, equilibrium by convention modifies the interactions because it modifies each individual. In short, we can say that convention is a social mediation that interposes the force of its evidence among private actors (Orléan, 2004: p. 5).

Hence, convention theory provides a valuable analytical framework for understanding how theoretical ideas are transformed into practical public policy actions via the action of interest groups. Despite its apparent superficiality, this is a very complex question if understood through the lenses of causality: Does the theory describes the reality, or does it create a reality to be described and legitimised by interest groups?

5. Financialisation: A new perspective on the rationale of central bank choices

One of the major characteristics of the world economy in the last decades, specifically after the demise of the Keynesian consensus, is the growth of finance and the power of the financial sector. This structural change is at the very heart of the financialisation thesis, to which the growing disparity between financial profits and productive investment is a matter of primary importance (Epstein, 2005; Krippner, 2005; Palley, 2007; Van der Zwan, 2014). More recently, there has been a growing interest in theoretical data-driven methods that attempt to recognise the institutional characteristics of financialisation across different jurisdictions (Lagna, 2016; Davies and Walsh, 2016; Dowling, 2017; Lavinas, 2017). In this regard, the theoretical discussion on the financialisation of the State assumes greater relevance. This is because, on the one hand, at the domestic level, savings are less directed to the financing of the productive sector. On the other, the share of speculative capital within the international capital flows has not ceased to increase since the financial liberalisation, which raise concerns about the overall stability of the financial sector, moral hazard²⁶ problems and the scenarios of possible crisis (Davis, 2018). These situations, thus, call for a discussion on the role of the State in the process of financialisation, and the design of appropriate regulatory mechanisms to avoid market distortions that ultimately would generate uncertainty and credibility losses.

We answered this call with a broad characterization of the financialisation of the State, and, specifically, by introducing the concept of *financialisation of monetary policy*. Despite the efforts of many scholars to provide financialisation an appropriate conceptualisation, the definition proposed by Epstein (2005: 3) remains the benchmark for analysing this phenomenon: ‘financialisation means the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies’. We will be emphasizing the domestic operation of financialisation in public institutions, and exploring the different changes imposed on the different levels of public and private decisions. The mild level of financialisation stands for the ‘diverse ways in which finance is grounded in practices of everyday life’ (van der Zwan, 2014: p. 102).

²⁶ Moral hazard refers to opportunistic behaviour in which one party seeks its own benefit at the expense of its counterparty being unable to observe or be informed of its conduct. This failure appears in markets with asymmetric information. One party has private information about its conduct while others are unable to obtain this information. In the face of this asymmetry, economic agents are likely to take greater risks, make less effort or take advantage of certain circumstances because they know that the cost of their actions will be borne by others. In financial economics, this term is commonly used to describe the specific situation in which the central bank would be compelled to come to the rescue of a systemically important institution financial institutions (SIFI) facing financial issues, so to avoid the collapse of the entire sector (or the economy as a whole). A situation that is colloquially acknowledged as the “too big to fail” problem (Gorton and Tallman, 2016; Mishkin, 2005).

The most extreme and sophisticated level of financialisation derives from the political power of financial interest groups to exert influence over fiscal and monetary decisions. Although the socio-economic effects of financialisation are not restricted to one level or the other, this metrics is critical for the assessment of the new spaces of capital valuation. Aalbers (2017) shows that financial operations in the private sphere are now increasingly complementary to those carried out with and within the State. This new rationale behind public choices, which we call financialised, is currently redefining the role and function of public policies.

The financialisation of public policies thus transforms public indebtedness into a sort of guarantee fund for financial investors, to whom public securities fulfill a collateral function for taking long, short and leveraged positions. We identified three major macroeconomic consequences for this financial use of public securities: i) the expansion of external and domestic debt associated to the need for monetary stabilization, but dissociated from public productive debt (e.g. government debt that finances investments that appreciate in value); ii) a high share of financial costs within public budget (e.g. debt rollover and interest payments); and iii) a simultaneous effect of private enrichment and fiscal fragility due to public indebtedness for reasons of liquidity provision followed by high financial returns via securitisation of public assets (e.g. public debt used as collateral in repos operations).

What is innovative in the financialisation of public policy approach is that public indebtedness is not seen through the conventional view of the financial needs of the government alone. Instead, it also sheds light on the necessity of large financial institutions to lend money. And, hence, extends Hardie's (2011) insights on the exorbitant capacity of bondholders to impose discipline on the government. Orléan (1999) goes further and sees a 'dictatorship of creditors'. The author highlights two points under which this 'dictatorship' is most evident: On the one hand, monetary policy is reoriented with the aim of ensuring financial profitability via strict inflation targeting coupled with measures of fiscal adjustment. On the other hand, the financing of public deficits through the financial markets attenuates the subordination of fiscal policy (revenues and expenditures) to the demands of investors.

Despite the pivotal role played in the process of financialisation, the State has received little attention in the specialised literature; *Despite* this policy space contraction to the detriment of an increase in financial expenses related to unproductive debt, reflections on the fiscal costs of financialisation are still in its infancy; *Despite* the profound change caused by financialisation in the nature of public policies, country studies are far from extensive analysis. Schelkle and Barta's (2014) raise an important question that contributes to move this agenda forward: Do governments use the markets

by making policy choices in which they have full sovereignty, or the markets make use of the government?

In the same vein, Fastenrath et al. (2016) conducted a data-driven study that shows the specific differences of 23 OECD countries in the process of financialisation of sovereign debt management. Mention should be made to the intellectual framework that unite them all: conventional financial economics. Its assumptions have been shaping government choices on how and from whom to borrow. Similarly, Karwowski and Centurion-Vicêncio (2018) attribute important significance to the central role played by the State in generating the conditions to consolidate financialisation within the public sphere. They indicate that the financialisation of the State stands for the consolidation of financial logic as a new guiding principle for the functioning of public institutions. A particular aspect of this process comes through the placement of financial interests at the centre of public management, and the adoption of corporate management methods into public choices, such as those related to public debt (Fastenrath *et al*, 2017) or social policy (Lavinias, 2017).

This active participation of the State in promoting the financialisation of public policies is paradoxical. The undermining of the policy space and financial autonomy of the State is associated to its growing dependence vis-à-vis the financial markets. This is partly explained by the fact that the financial markets have become a very important source of funding for the government. Nevertheless, this funding comes to the government at the expense of: i) renouncing a greater use of taxation as a means of public financing; ii) implementing measures of fiscal consolidation; iii) according priority to inflation targeting (historical claim of financial capital); and iv) central bank independence (subject to legal interdiction of directly financing the government). This autonomy loss is a central issue within the French school of regulation. Boyer (1998), Aglietta (1998) and Plihon (2004) share the same view on the negative externalities produced by the market ‘discipline’ over the policy space of the government. The measurement of this discipline derives, on the one hand, by the central bank’s capacity to follow the credible commitment of making inflation converges to the target; which, on the other, imply the imposition of a fiscal balance to the government.

With both indicators becoming a central concern for the government, fiscal and monetary policies are constrained to i) correct tax distortions; ii) support the expansion of fundamental components of aggregate demand; iii) promote massive investments to meet economic and social needs; and iv) ensure a fair distribution of national income. With regard to the financialisation of monetary policy in particular, our research suggests that the central bank has more incentives to comply to market discipline, than to pursue a balance between inflation and unemployment that guarantees growth

and income distribution. Thus, while the share of institutional investors' (bondholders) financial wealth is likely to increase in the distribution of national income, the working families (taxpayers) are to move in the opposite direction.

Out of the series of structured interviews conducted with treasury and central bank public officials, mention was made to some discretionary choices involving the use of repo for monetary operations in Brazil. It raises the question of the limits of monetary dominance under a context of financialisation of monetary policy. Although accountability has become a central notion when discussing central bank independence, we are unaware of any consistent and formal contestation from the taxpayers against the extensive use of repos for monetary purposes. If we use Olson's logic to understand this inaction of the taxpayers, we would conclude that the task of supervising the Central Bank (accountability) has been assigned to the large and disorganised group of taxpayers, without significant efforts from the central bank to organise this group for a supervision *de facto*. Should we interpret this as pure negligence or clear expression of specific interests to do so?

Against this background, the challenge for Brazilian taxpayers is to organise themselves as a group, so to put in practice such 'accountability'. This brief group analysis, through the lenses of the financialisation of monetary policy, brings to light the central question of: *Quis custodiet ipsos custodes?* That can be literally translated from Latin as "Who shall guard the guards themselves"? Although the context in which Roman poet Juvenal has formulated this question differs from the one used here, it deals with a classical problem mentioned by Plato in the Republic about the ways of controlling the actions of persons in positions of power. Once applied to the political economy analysis of fiscal and monetary interactions, this question could easily be addressed to the tenants of monetary dominance as: "Who shall regulate the regulators themselves?"

6. Some methodological considerations

A research study can only be started in the presence of a question that dares to move scientific knowledge forward. As previously presented, our contribution seeks to understand the vested interests conferring legitimacy to the regime of monetary dominance. Specifically, we focus on the political reasons behind the monetary policy to dominate fiscal goals. Following the long-standing tradition of political economists, we analyse this issue motivated by the possibility to make a contribution to the practical and intellectual realms of knowledge. Regarding the former, this research study seeks to understand how monetary choices contribute to the fiscal fragility of the Brazilian economy. As for the latter, we join the recent efforts to develop a new analytical

framework for the study of financial motives within public institutions: the Financialisation of the State. Our hypothesis then derives from the observed changing in the nature of central banks, which we define as the ‘financialisation of monetary policy’.

However, without an adequate methodology these motivations are meaningless. The social science of political economy differs from natural sciences in terms of research methods and techniques. It means that the political economy analysis focus on immeasurable variables such as the human feelings, group motivation and networks of influence. It does not occur, therefore, in the same way as natural phenomena, where the quantitative prediction, description and understanding of an event has a greater marge to ensure the validity of a scientific advance. Consequently, efforts to quantify economic problems that are unquantifiable may result in concrete conclusions grounded on abstract beliefs, which can bias the results of quantitative research and, ultimately, create a poor comprehension of policy-solutions for real problems. None of this is to reject the importance of quantitative analysis in economics. Neither, to affirm that there is a dichotomy between quantitative *or* qualitative approaches. Ideally, the two should be combined when the nature of the study requires and allows so. Perroux (1969) argues that economic research can be roughly divided into two distinct categories: ‘mental and social changes’ and the growth of the ‘global real product’. While the realm of economic growth makes it possible to quantify and verify behaviours and trends with statistical samples, the field of knowledge (ideas) would be senseless if analysed quantitatively. Since the focus of our study is on ‘mental and social’ changes, we privileged the qualitative approach.

This statement explains, in part, our choice of the qualitative method. It stems from two other reasons: Firstly, because we discuss the relevance and influence of the theoretical idea of monetary dominance. We seek to understand the nature of the phenomenon studied and thus to produce a valuable knowledge that explains *why* and *how* this idea have been influencing monetary decisions in Brazil. The motivation for deepening our comprehension of contemporary changes in the nature of central bank derives from Latin poet Virgil’s “*Felix, qui potest rerum cognoscere causas*” (Fortunate is (s)he, who is able to know the causes of things). The introduction of the concept of ‘financialisation of monetary policy’ reflects much of our willingness to know the causes for these changes.

While discussing this idea, we do not quantify values to the action of interest groups, but basically proceed to a confrontation to the facts. This is because the data used to identify the influence of interest groups are non-metric. Our argument is the outcome of previous researches on the topic, interactions with other researchers, interviews with public officials and financial managers, and the participation in different conferences around this subject. Besides, the restricted access of

quantitative data underlies our choice for a qualitative approach. A formal request was addressed to the National Congress of Brazil²⁷ for having access to data concerning, cost, profit and identity of the central bank counterparts in the repo operations. Unfortunately, the demand was rejected by the central bank. A statement issued by the monetary authority explaining this denial, pointed this data as sensitive information that must be protected and, then, classified for the sake of the ‘national interest’.

As for the objectives, this research is categorised, under the terms of Khotari (2004) and Blaug (1992), as descriptive and explanatory. Descriptive, because it intends to describe the facts and phenomena that motivate the submission of fiscal objectives to monetary objectives. Thus, we proceeded to the documental analysis of speeches, books, articles and government reports, in addition to conducting interviews with private fund managers and public officials from the central bank and Treasury of Brazil. On the other hand, the research is explanatory because it is concerned with identifying the factors that determine or contribute to the institutionalisation of the practical aspects of monetary dominance. That is, this type of research suits the best our attempt to explain the reasons for fiscal and monetary interactions to be structured around a coordination scheme based on *vertical coordination* rather than *horizontal coordination*. According to Blaug (1992), explanatory research in economics may be the continuation of another descriptive one, since the identification of factors that determine a phenomenon requires that it is sufficiently described and detailed.

With regard to the research procedure, we opted for a bibliographic and documentary research. Although similar to bibliographic research, both have very different natures. While bibliographic research uses sources consisting of material already elaborated, basically consisting of books and scientific articles, documentary research is based on primary sources, that is, dispersed data have not yet been treated scientifically, thus, being a rich complement to bibliographic research. Hence, this research is documentary, for we used more diversified sources, without analytical treatment, such as statistical tables, newspapers, magazines, reports, official documents and information from financial institutions operating in the Brazilian financial market. On the other hand, the choice for a bibliographic research follows Shim (1989), who points out the benefits of this type of research to the investigation of the legitimacy of theoretical ideas. We drew upon theoretical the knowledge published on books, scientific articles and specific sites. With this structured review of the literature, we aimed at collecting and organising existing information on fiscal and monetary interactions to produce innovative knowledge on the limits of monetary dominance.

²⁷ Information request protocol number 2299/2017.

7. Outline of the thesis

This research criticises the theoretical framework of monetary dominance. We do not reject previous findings on the harmful effects of fiscal dominance over the price level. Instead, our critique is addressed to the transition from one regime of dominance (fiscal) to the other (monetary), and the vested interests operating behind this transition. We hypothesise that the central bank, much as the fiscal authority, are equally exposed to exogenous incentives for avoid behaving ‘impartially’. To this end, we introduced the concept of financialisation of monetary policy with the aim of providing a new theoretical framework for the analysis of interest groups on monetary decisions in Brazil. This argument is developed around three chapters.

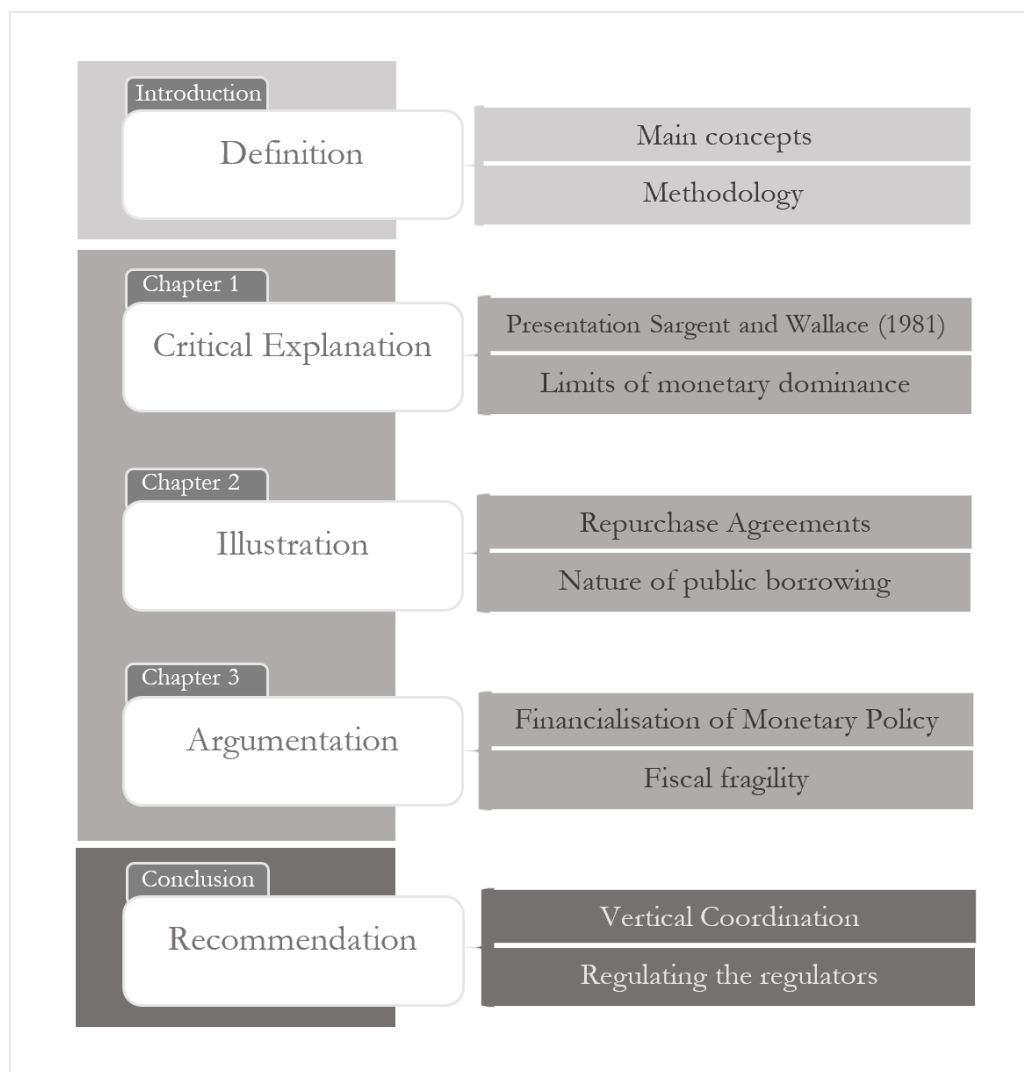
Chapter 1 focuses on the intellectual basis on which the regime of monetary dominance is grounded. We revisit the elegant mathematical solution presented by Sargent and Wallace (1981) in which they demonstrate the harmful effects of fiscal dominance (and implicitly pledge for the monetary dominance regime). Next, we show the areas where the influence of their idea were most noticeably, ranging from academia (with the fiscal theory of the price level) to the institutional arrangement for fiscal and monetary interactions (independence of the central bank). The discussion follows with an analysis of the political economy of monetary dominance. The objective is to show the power relations behind the demand and maintenance of the regime of monetary dominance. We then draw upon the logic of collective action proposed by Olson (1965) to explain the interest of ‘organised’ financial groups in this regime. More important than explaining the demand for this regime by these interest groups, we attempt to provide an explanation for the reasons for ‘unorganized’ groups (taxpayers) to not contest the legitimacy of the ideas vehiculated by the organised group of bondholders. Olson’s analytical framework, based on rational choices, provides only a partial answer to this question. This is why we turn to the theory of conventions developed by Orléan (1994). The conclusion is that the concept of monetary dominance is based on a convention to maximize welfare gains of interest groups influencing monetary decisions. The last section of this chapter deals with the inefficiencies of the monetary dominance regime. We highlight some of the monetary actions having a negative effect on the objectives of the fiscal authority. Altogether, these ideas form the basis of the theoretical framework presented in the following two chapters.

Chapter 2 deals with the use of repurchase agreements by the monetary authority in Brazil. The extensive use of repos in the country reveals some of the limits of the regime of monetary dominance. Among these limits, a loss of monetary policy effectiveness and the degradation of Brazil’s sovereign debt profile. The chapter begins with an analysis of the international context in

which the choice of accumulating reserves was made by the Brazilian government. The analysis follows with an explanation of the regulatory framework for the use of government securities for monetary purposes in the country. This explanation is accompanied by the following question: “Is the extensive use of repos inflationary?” We present a schema to explain how the extensive use of repos can influence the price level. To conclude the chapter, we propose a discussion on the nature of repo transactions and, thus, the nature of public indebtedness. We do not reject the importance for repos for the management of short-term liquidity. However, we assume that this instrument is not sheltered from possible conflict of interests. Our analysis reveals that, at the same time that the repo operations perform well the function of an instrument for liquidity control, they are also among the main sources of funding for banks in Brazil.

Chapter 3 consolidates the arguments presented in Chapter 1 and the facts observed in Chapter 2 concerning the extensive use of repos. We introduce the concept of ‘financialisation of monetary policy’ to explore recent changes in the nature of central banking activity. This change towards financialisation, we argue, derives from the action of interest groups influencing monetary decisions. We develop our argument through a historical analysis of the use of repos for monetary purposes in Brazil. Drawing on some elements of path dependence theory, we explain that the financialisation of monetary is structured around both, a convention around the idea of inflation targeting and the theoretical framework of monetary dominance. This concept provides a new look into the opportunity cost of the monetary dominance regime. We show that the cost of repos (and other interest-rate indexed sovereign bonds) is an ‘absent’ expense in the discussions about the Brazilian fiscal balance. The fiscal cost borne by the government in these operations carried out by the monetary authority contrasts to the gains obtained by central bank counterparties in repo operations.

The **general conclusion** deals with the two interconnected questions: ‘Should dominance prevail over *horizontal* coordination?’ And ‘who shall regulate the regulator (central bank)?’ We suggest a reorganisation of the institutional arrangement between the fiscal and monetary authorities, in order to ensure a sustainable pursuit of the objective of price stability while maintaining the government’s fiscal balance. On the other hand, we provide two policy recommendations focused at mitigating the financialisation of monetary policy risk. Figure 1 provides a schematic representation of the structure of our research study.

Figure 1 | Schematic representation of political economy of fiscal and monetary interactions research

A Political Economy Critique of Monetary Dominance

Introduction

This chapter is the cornerstone of our research study. It begins with the presentation of the Fiscal Dominance hypothesis and continues with the description of an often-unobserved concept in modern economics: Monetary dominance. At first glance, a correlation between monetary dominance and Sargent and Wallace (1981) may seem not so evident. This is because the ‘unpleasant monetarist arithmetic’ is usually referred to for describing the economic situation of fiscal dominance. Indeed, the authors assertedly draw attention to this specific dysfunction in the relationship between the central bank and the government originated by fiscal mismanagement. More than a mere diagnostic, however, their contribution prescribes a dominant-central bank solution to cope with the deleterious effects of fiscal dominance. This implicit solution, as there is no mention of the term ‘monetary dominance’ itself in their seminal work, have inspired and framed a myriad of scholars to think of fiscal and monetary interactions in terms of dominance alone. But should the solution to one form of dominance (fiscal) be found at the opposite end, in another kind of dominance (monetary)? As we have mentioned in the main introduction, the fact that the phenomenon described by A is bad does not make the phenomenon described by B, as opposed to A, necessarily good. Apart from the fact that ‘bad’ and ‘good’ can be judgments of value, whose value depends on the judge and the context, the simple information that A is bad and B is the opposite of A’ is not enough to decide if B is good. A can be a drought, and B can be a flood - they are opposite, but none is necessarily good. Specifically, A can be Fiscal Dominance while B can be Monetary dominance.

The main purpose of this chapter thus is not to discuss the causes, but the solution presented by Sargent and Wallace (1981). We discuss some of the underlying reasons for vertical coordination to be privileged at the detriment of a solution based on horizontal coordination. Our understanding is that this question would be better treated by some of the theoretical elements found in the political economy literature, namely, interest groups and convention economics. They provide together a valuable explanation on the process of conferring legitimacy to an economical idea. The

remainder of this chapter is divided into four sections. Section one revisits the theoretical demonstration of fiscal dominance. Section two sheds light on the influence of Sargent and Wallace (1981) over the theoretical and practical aspects of economic policy. We focus on the Fiscal Theory of the Price Level to illustrate the former and the prospects of central bank independence and inflation targeting for picturing the latter. Section three presents a political economy analysis of fiscal and monetary interactions. We rely on Olson (1965) and Orléan (1994), to provide critical analysis of monetary dominance by investigating the way ideologies are formed and vehiculated by interest groups. Does the theory describe the reality, or does it create a reality to be described and legitimised by interest groups? Finally, section four discusses three negatives externalities produced by the regime of monetary dominance; 1) The undermining of the path of sovereign debt; 2) The creation of incentives to moral hazard behaviour in the interbank lending market; and 3) The financialisation of the State. We conclude that these externalities are regulatory ‘slacks’ from where interest groups can, relying on their bargain strength vis-à-vis the central bank, have the monetary policy ‘captured’. These externalities show the limits of the idea of dominance in economic policy, and calls for a broaden discussion about institutional arrangements based on the *horizontal* coordination of policies.

1.1. The theoretical foundations of monetary dominance

The idea of fiscal dominance was first presented by Sargent and Wallace (1981). The ‘unpleasant monetarist arithmetic’ of public debt monetisation has become the benchmark for fiscal behaviour. It consolidated an ancient monetarist claim on the role of fiscal policy: the accommodation of monetary choices. Otherwise stated, the ‘domination’ of fiscal policy by a ‘dominant’ central bank has become the most suitable solution for coping with price instability. This argument relies fundamentally on the replacement of one regime of dominance to another. Additionally, it brings implicit the logic of vertical coordination while neglecting the potential for the horizontal coordination of fiscal and monetary policies.

Before proceeding to the mathematical demonstration of fiscal dominance, it is worthwhile mentioning two important philosophical assumptions within Sargent and Wallace (1981). First, competition produces the best possible outcomes for the whole society, even if this means competition among public institutions. They brought the logic of the ‘winner takes it all’ to the realm of fiscal and monetary interactions – expressed by the right to choose the hierarchy of priority of macroeconomic objectives. This assumption is corroborated by the analogy of the ‘chicken

game²⁸ used by Sargent (1987) to explain the economic benefits of having a ‘leading’ (or dominant) central bank that precedes the government (follower) in the setting of policy priorities²⁹.

The second assumption derives from this logic of competition: the nature of fiscal and monetary interactions is conflictive, or even irreconcilable, with little room for any prospect of horizontal coordination. Hence, a central bank that stands firm in the pursuit of its objective is expected to drive the fiscal authority ‘off the road’. This logic underlies McCallum and Nelson’s (2006: p. 29) argument: ‘central banks can control inflation irrespective of fiscal policy and that detailed coordination between monetary and fiscal authorities is not needed for effective macroeconomic policy’. This argument echoes earlier calls by King (1995), Woodford (1996), McCallum (1999, 2003) about this incompatibility (and irreconcilability) of fiscal and monetary objectives. According to them, if the fiscal authority takes the first step in choosing a time path of primary deficits, the monetary authority would be constrained to accommodate the financing needs of the government, so to satisfy the intertemporal budget constraint. In a situation where sovereign bond issuance is insufficient to cover primary deficits, the monetary authority would, therefore, be *forced*³⁰ to pursue the ‘unpleasant arithmetic’ of government debt monetization. The most likely outcome for this situation is the emergence of a hidden tax of inflation, and the impossibility for the monetary authority to commit to price stability.

These two assumptions can be summarised in the following argument of Sargent and Wallace (1981: p.7): “Monetary and fiscal policies simply have to be coordinated. The question is, which authority moves first, the monetary authority or the fiscal authority?”. The situation described by the authors reflects a fiscal authority that has the leadership over central bank actions. Therefore, the monetary authority follows fiscal decisions by accommodating the financing needs of the government. In this scenario, they assume that government expenditures are carried out by short-sighted politicians whose behaviours ignores the current or future stances of monetary policy. It consequently makes impossible for the central bank to efficiently control the rate of the money supply as well as to engage in credible commitments on the expected rate of inflation. According to this view, the fiscal authority sets the path for present and future deficits and surpluses without coordinating with the monetary authority – making, therefore, an independent choice on the amount of revenue from the sale of bonds and seigniorage. The monetary authority, facing a

²⁸ In this game, two opponents place their cars on opposite sides of a straight road. They must start at the same time and the players have two options: to give up or not to give up. The one who gives up deviates from the path. The one who doesn’t give up, moves forward towards the other car. If the two opponents do not give up, they lose everything, including their lives. If only one gives up, the one who does not give up wins - while the other loses.

²⁹ ‘Monetary and fiscal policies simply have to be coordinated. The question is, which authority moves first, the monetary authority or the fiscal authority? In other words, who imposes discipline on whom?’ (Sargent and Wallace, 1981: p. 7)

³⁰ We use here the same word of Sargent and Wallace (1981: p.2) to describe the unpleasant monetarist arithmetic of debt monetisation.

restriction imposed by the demand for government bonds, tends to finance, via seigniorage, the complementary amount that satisfies the demand of the fiscal authority.

A wide understanding of the unpleasant arithmetic of debt monetisation proposed by Sargent and Wallace (1981) goes through an initial analysis of equilibrium in the money market. To do so, they presented a first equation of the supply of nominal money (real balances):

$$(1) \quad \frac{M_t}{P_t} = \phi(Y, r + \pi_t^e)$$

On the right-hand side, we have a supply function where M_t stands for nominal money, P_t is the price level. The left-hand side, express that the demand for real balances rises with the level of income, Y . Hence, if an economy doubles in size in terms of output, demand for real balances also is expected to grow twice as fast. Another important information found in this equation relates to the demand for real balances decreases when nominal interest rates $(r + \pi_t^e)$ rises. The reason is the nominal interest rates are the opportunity cost of holding money. When inflation is high, the value of money arises at the rate of the expected rate of inflation π_t^e . When the agents anticipate high levels of inflation, they tend to ‘flee’ cash and move into other securities, which consequently drive the demand for real balances down.

The second equation is the Government Intertemporal Budget Constraint:

$$(2) \quad \sum_{t=1}^{\infty} \left(\frac{1}{1+r} \right)^{t-1} (g_t - T_t) + (1+r)B_1 = \sum_{t=1}^{\infty} \left(\frac{1}{1+r} \right)^{t-1} \frac{M_t - M_{t-1}}{p_t}$$

Where r is the real interest, g_t is government expenditures (except for one thing, service of the government debt), T_t is the total amount of tax collections and B_1 the value of (indexed) debt at time one and $(1+r)$ is the gross payments government have to make. The whole left side is the present value of the deficit $\sum_{t=1}^{\infty} \left(\frac{1}{1+r} \right)^{t-1} (g_t - T_t)$ plus initial debt, that somehow the government has to cover. On the right is the present value of money creation. At the end of the last period money was M_{t-1} , but the government is going to print more money and spend it M_t . So, the whole equation shows government budget constraint taking into account the possibility of a government to print money. So, they use these two equations to make certain assumptions about interest rates, government expenditures and taxes to derive a theory that analyses price level $\frac{M_t}{P_t}$ and expected inflation π_t^e under various scenarios.

It is worthwhile noting the presence of three crucial assumptions for these results to hold: a) The real interest r is determined by the marginal productivity of capital, i.e. the real productivity of real investments; b) Environment is riskless and under perfect foresight; and c) The path of fiscal policy is given and does not depend upon monetary policy (assumes fiscal policy moves first and dominates monetary policy). Another key element in their analysis is the distinction between long run and short run. In the long run, they assume that for t greater or equal to 1, government expenditure is constant at some level ($g_t = g$), taxes are constant ($T_t = T$), the level of government debt is constant ($B_t = B$) and money is not constant, but the rate of growth of money is constant ($\frac{M_t}{M_{t-1}} = 1 + \mu$). Under these conditions, we have, therefore, two different government budget constraints. One that applies at $t = 0$ (short-run):

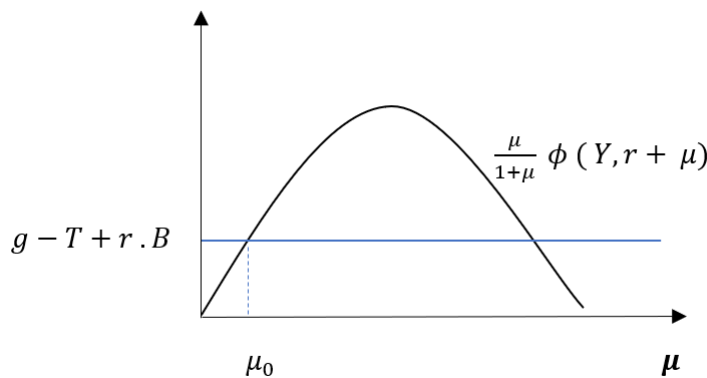
$$(3) \quad g_0 - T_0 + (1 + r)B_0 - B = \frac{M_0 - M_1}{p_0}$$

And another one that applies for all $t \geq 1$ (long-run):

$$(4) \quad g - T + r \cdot B = \frac{\mu}{1 + \mu} \phi(Y, r + \mu)$$

The left-hand side of this equation is gross-of-interest government deficit. It consists of the net-of-interest deficit or primary deficit ($g - T$) plus interest payments on the debt ($r \cdot B$). What this equation says is that gross-of-interest deficit has to equal the revenue that the government is raising from printing money (i.e. Seigniorage). Hence, the gross-of-interest deficit has to be covered, and it is covered by printing money as we depict in Figure 1.1 below:

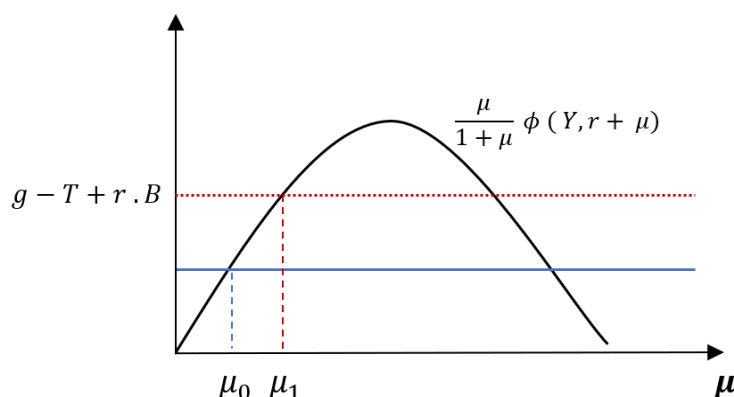
Figure 1.1 | Gross-of-interest government deficit



Source: Own elaboration, from Sargent and Wallace (1981)

The relationship between the growth of interest deficit and the rate of money creation can be expressed in terms of a Laffer curve³¹. When $\mu = 0$ government is not printing any money, and therefore not raising any revenues. When μ is very high (μ_1), that demand for money is going down, the government is not raising many revenues either. That is because an increase in money creation increased inflation tax $\left(\frac{\mu}{1+\mu}\right)$ but makes a base for inflation tax $\phi(Y, r + \mu)$ to fall as we can see in figure 1.2:

Figure 1.2 | The deleterious effects of Fiscal Dominance



Source: Own elaboration, from Sargent and Wallace (1981)

When the government affects the rate of inflation to increase, at first, the revenues from money creation increases before reaching a peak. Then they start going back to previous original levels. This curve shows the existence of two tax rates that raised the same revenues. However, one is a high tax low base, whereas the other is a lower tax rate higher base. Many taxes that are distorting have a feature that there are multiple rates that raise the same revenues. If we concentrate in the lower one, the classic theory of inflation says that an increase in g or a decrease in T or if the government has a large debt to rollover $r \cdot B$, higher growth of interest deficits is going to be financed by a higher μ . Hence, an exogenous increase of gross-of-interest deficit in the long-run implies a higher μ . Conversely, if the government wants to lower μ we can expect an effort to reduce either g or T , or default in its debt.

³¹ The Laffer curve is an economic representation that shows the relationship between a tax and the total revenue resulting therefrom. The Laffer curve assumes that when the tax rate is zero ($t=0\%$) the public revenue is zero, and when the tax rate is 100 ($t=100\%$), the public revenue is also zero (if taxes absorb all resources no income will be produced). Laffer, based on a mathematical foundation (Rolle's theorem), expresses that between those 2 points there will be an ascending section with low levels of taxes and another descending section with higher levels where there will be a maximum of collection, and both to the left and to the right of this maximum the collection will be lower than in the maximum. This maximum is very complicated to determine in reality, it depends on many factors and varies from one country to another. It is desirable to find it because it allows governments and institutions to know whether they should lower or raise a tax to achieve higher levels of tax collection, although it is not always easy to know at what point they are at certain times in order to calibrate a particular stance of fiscal policy.

The outreach of Sargent and Wallace's (1981) theory goes far beyond the elegant mathematical solution proposed to describe the inefficiencies of fiscal dominance. Their influence ranges from private to public choices, and have inspired a myriad of theoretical contributions. Although we acknowledge the contribution of different schools of economic thought to the study of fiscal and monetary interactions over time, we will be placing our emphasis on Sargent and Wallace's (1981) influence over the tenants of the Fiscal Theory of the Price Level. This theoretical influence and the practical aspects of monetary dominance are explored in the next section.

1.2. The theoretical and practical influence of monetary dominance

Scholars and policymakers may share a similar understanding of the global definition of the general welfare, but they assuredly differ on how fiscal and monetary policies can contribute to achieving it. The different economic theories, daily practices, vested interests and held beliefs are some of the factors shaping the general understanding of the role of these policies. This section explores these questions and formulates a critical explanation on some of the theoretical and practical elements of monetary dominance. As for the former, we provide a broad categorisation of the contributions on the topic before narrowing our focus on the Fiscal Theory of Price Level (FTPL). In so doing, we illustrate the influence of monetarist-inspired philosophies on the realm of fiscal and monetary interactions. Regarding the practical aspects of monetary dominance, we draw a line that connects the 'diagnostic' and the 'treatment' for price instability, i.e., from fiscal dominance to central bank independence.

The main purpose of this section is, therefore, to advance the argument that the often-unobserved idea of monetary dominance has been shaping economic policies in a smooth and very influential manner – from scientific knowledge production to the policy choice for central bank independence and inflation targeting mandates³².

1.2.1. *Theoretical: The Fiscal Theory of the Price Level*

Sargent and Wallace's (1981) seminal contribution have remarkably influenced the development of a vast array of literature on fiscal and monetary interactions. Besides the quantitative analysis carried out to define the scope of fiscal dominance, we acknowledge some of the qualitative aspects of the relationship between the government and the central bank. We suggest a categorisation of these

³² At this stage it is important to clarify the difference between price stability and inflation targeting mandates. As Svensson (1999: p. 278) argues: "A frequent result, emerging as the conventional wisdom, is that the choice between price-level targeting and inflation targeting involves a trade-off between low-frequency price-level variability on one hand and high-frequency inflation and output variability on the other. Thus, the advantage of price-level targeting is reduced long-term variability of the price level. This should benefit long-term nominal contracts and intertemporal decisions, but at the cost of increased short-term variability of inflation and output".

contributions into **three different branches**, according to their attachment to the two philosophical assumptions present in the unpleasant monetarist arithmetic.

The **first branch** is shaped by the assumption of ‘fiscal and monetary competition’. Contributions in this branch integrate the notion of competition among policies and, hence, the implicit message that the central bank and the government are engaged in a fierce competition for the ‘first move’. Although more importance is given to fiscal choices, the discussion is not centred on the shift from vertical to horizontal coordination. Instead, the emphasis here is placed on the ways and means for fiscal policy to better accommodate central bank decisions. (Togo, 2007; Benigno and Woodford, 2003; Schmitt-Grohé and Uribe, 2004; Woodford, 1995; Sala, 2003; Loyo, 1999; Christiano and Fitzgerald, 2000; Giavazzi and Pagano, 1990; Sims 1994; Auernheimer and Contreras, 1990; Cochrane, 1998; Leeper, 1991).

The **second branch** stands for the works on ‘the conflictive nature of fiscal and monetary interactions’. A common feature within this set of contributions is the assumption of a myopic fiscal authority that chooses a course of policy regardless of the monetary goals. In this branch, we found an underlying appeal to the irreconcilability of objectives. It primarily stems from the asymmetric perception of the behaviour of fiscal and monetary authorities. While the former is constantly expected to behave irrationally, the latter assumes an impartial and rational posture in committing to price stability (Alesina and Tabellini, 1987; Lucas and Stokey, 1983; Calvo and Guidotti, 1992; Debelle and Fischer, 1994; Chari and Kehoe, 1991; Beetsma and Jensen, 2005; Buti et al., 2002; Benhabib et al., 2001; Favero and Monacelli, 2003; Dixit and Lambertine, 2001, Correia et al., 2008; Stokey, 1983; Canzoneri et al., 2001; Nordhaus, 1994; McCallum and Nelson, 2005; Favero, 2002; Bergin, 2000).

Finally, the **third branch** is structured around the contributions of Brazilian scholars, working specifically on the fiscal and monetary interactions in the country. Since we are conducting a research study on the case of Brazil, we decided to organise their contributions in a third branch so to help further researchers working on the topic. Their contributions follow the same criteria for defining the first branch (Tanner and Ramos, 2003; Fialho and Portugal, 2005; Aguiar, 2007; Maka, 2013 and Ferreira, 2015); and the second one (Ázara, 2006; Marques Junior, 2009; Ornellas and Portugal, 2011). Table 1.1 below summarises this categorisation into three different branches:

Table 1.1 | Overview of the influent contributions on fiscal and monetary interactions

1. Fiscal and monetary competition	2. Conflictive nature of fiscal and monetary interactions	3. Brazilian Scholars
Auernheimer and Contreras (1990)	Alesina and Tabellini (1987)	Fiscal and monetary competition
Benigno and Woodford (2003)	Beetsma and Jensen (2005)	Aguar (2007)
Christiano and Fitzgerald (2000)	Benhabib et al. (2001)	Ferreira (2015)
Cochrane (1998)	Bergin (2000)	Fialho and Portugal (2005)
Giavazzi and Pagano (1990)	Buti et al. (2002)	Maka (2013)
Leeper (1991)	Calvo and Guidotti (1992)	Tanner and Ramos (2003)
Loyo (1999)	Canzoneri et al. (2001)	Conflictive nature of fiscal and monetary interactions
Sala (2003)	Chari and Kehoe (1991)	Azara (2006)
Schmitt-Grohe and Uribe (2004)	Correia et al. (2008)	Marques Junior (2009)
Sims (1994)	Debelle and Fischer (1994)	Ornellas (2011)
Togo (2007)	Dixit and Lambertine (2001)	
Woodford (1995)	Favero (2002)	
	Favero and Monacelli (2003)	
	Lucas and Stokey (1983)	
	McCallum and Nelson (2005)	
	Nordhaus (1994)	
	Stokey (1983)	

Source: Own elaboration.

Note: Only the most influential contribution of each author was taken into account. We observed no changes across time in the attachment to one or another of the Sargent and Wallace's (1981) philosophical assumptions. For instance, we saw no change from Cochrane (1998) and Cochrane (2018).

This categorisation, although far from exhaustive and being mutually exclusive, provides an overview of the influence of the philosophical assumptions of Sargent and Wallace (1981). Two conclusions can be made out of this categorisation. First, we observe that the most influential contributions on fiscal and monetary interactions have integrated either the notion of 'competition' or 'irreconcilability'. It reflects the little progress made in discussing this topic outside the realm of domination. Second, the majority of the contributions under the branch 'fiscal and monetary competition' are from scholars of the Fiscal Theory of the Price Level (FTPL).

The FTPL was developed in the 1990s and early 2000s by a number of prominent economists, among them Leeper (1991), Sims (1994, 1999a), Woodford (1994, 1995, 1996, 1998a, b, c, 1999, 2001) and Cochrane (1998, 2001, 2005, 2018). It was further discussed and developed by many others, including Cushing (1999), Loyo (1999), Kocherlakota and Phelan (1999), Christiano and Fitzgerald (2000) and Schmitt-Grohe and Uribe (2000). Extensions to open-economy settings include Sims (1999b, 2001), Bergin (2000), Dupor (2000) and Daniel (2001). The main critics have been Buiter (2002), McCallum (1999, 2001, 2003a) and Buiter and Sibert (2018).

The key force of the FTPL is that a government is fundamentally different from households. Households need to satisfy their budget constraint for all prices, regardless of whether or not those prices are in equilibrium and reflect all available information. A government, in contrast, does not. Woodford (1995) argues that the government can follow non-Ricardian fiscal policies³³ under which the intertemporal budget constraint is satisfied for some, but not all, price levels. Hence, fiscal policy can affect inflation rates if and only if a given government follow non-Ricardian policies. The tenants of the FTPL consider price stability as the result of an efficient mix of monetary and fiscal instruments, and not through monetary dominance alone. Hence, special attention is given to the instruments at the disposal of the government to be deployed in conjunction with monetary policy, such as taxes or debt policy, to curb inflation. The core message of this theory is that price level determination is essentially a fiscal, rather than a monetary phenomenon. At first glance, this argument may seem in clear contrast to the monetarist claims embedded in Sargent and Wallace (1981).

Scholars from the FTPL defend the idea that the commitment of monetary authority alone to price stability could be insufficient to ensure low and stable inflation. It follows from this reasoning that fiscal policy can affect the price level even when the central bank follows an independent monetary policy – establishing a nominal interest rate rule that is independent of fiscal policy. The authors also affirm that fiscal policy can impact prices even in the hypothetical situation of a non-monetary economy, where Seigniorage revenues are a choice out of the reach of short-sighted politicians. Therefore, even countries with independent central banks that react aggressively to inflation and are not under the unlikely situation of fiscal dominance may be susceptible to price instability (Woodford, 2001). In the same vein, Canzoneri et al. (2010) explain that monetary policy alone does not provide a nominal anchor for future expectations. Instead, price stability should be understood as the result of an optimal combination of monetary and fiscal goals. They suggest two possible effects in prices for the different possibilities of fiscal and monetary interactions: ‘Stable’ or ‘explosive’ (or ‘implosive’). The best outcome comes when good coordination of monetary and fiscal is achieved, in which price level and sovereign debt are not constantly exposed to episodes of macroeconomic instability over time.

A distinguishing feature between the ‘quantity’ and ‘fiscal’ theories comes from the divergence about the type of government liability that most affects price level determination. While money supply is of primary importance for the quantity theory, the fiscal theory focuses on the correlation between supplied government bonds and the rise of inflationary pressures to explain price

instability. Thus, for the FTPL, there are different mechanisms that can ensure, *ex-ante*, that the government's budget constraint (in current value) is respected. In other words, the intertemporal constraint of the government is not conceived, always and for all nominal income and interest rate levels, as an accounting identity but as a condition of equilibrium – as we will further discuss.

Sims (2010) draws attention to the fact that the fiscal authority can significantly impact the overall price level, even in the absence of a fiscally dominant regime (i.e., under the regime of monetary dominance). The author highlights the existence of other ways for the government to pay-off old debts, other than raising taxes or increasing money supply via debt monetisation. For instance, new debt can be issued and rolled over into new debt. According to him, this possibility arises from the fact that the monetary authority can keep a fixed rate of money supply (i.e. government's non-interest liability), while the interest-bearing liabilities are just increasing exponentially because of rollover operations carried by the fiscal authority. In this case, the new borrowing would have to cover both previous principal borrowing and interest requirements.

In the absence of fiscal effort to reduce sovereign debt, this debt will tend to grow at an exponential rate, which would further lead inflationary pressures to rise and, in the worst scenario, to a sovereign debt default. This statement challenges the long-standing monetarist view on price level determination, to which there is no need for the monetary authority to be backed-up by fiscal policy at any circumstance (Friedman, 1981)³⁴, price stability can be achieved by the central bank alone even if the government continues to run large deficits (Meltzer, 1977), and 'central banks can control inflation irrespective of fiscal policy and that detailed coordination between monetary and fiscal authorities is not needed for effective macroeconomic policy' (McCallum and Nelson, 2006: p. 29).

Leeper (1991), to whom the logic of the game of chicken logic has exerted great influence, suggests a categorisation of fiscal and monetary policies into 'active' and 'passive'. The main purpose of this categorisation is to clarify different states of equilibrium for both policies³⁵. Monetary policy is said to be active when the central bank is the 'first mover', i.e., fiscal goals (e.g. low unemployment rates or lower debt costs) are subordinated to monetary goals. Conversely, monetary policy is passive when the central bank functions as a 'stabiliser of last resort' for the path of sovereign debt, accommodating the fiscal and private decisions. Hence, in the case, monetary policy is active and

³⁴ Milton Friedman quoted in McCallum and Nelson (2006).

³⁵ Some additional assumptions used by the author are: i) economy with exogenous government output and expenditure; ii) logarithmic utility function and additively separable in consumption and real incomes; and iii) absence of shocks in the behavioral functions of households.

fiscal policy passive interest rates are raised more than ‘one-for-one’³⁶ in response to inflation, and the fiscal authority adjusts the tax rate to ensure fiscal solvency and government expenditures for the different paths of the real interest rate. Leeper (1991) names this situation **regime M**: the fiscal authority satisfies the inter-temporal government budget constraint by choosing the primary surpluses that stabilize the public debt for a given price level, and the monetary authority successfully commits to inflation targeting by responding aggressively to inflation. It should be noted that the regime M is analogous to Sargent and Wallace’s (1981) monetary dominance regime.

The occurrence of fiscal shocks under the regime M is studied by Davig and Leeper (2011). The most likely behaviour of the government after a shock is to proceed to deficit financing via the issuance of new nominal public bonds, thereby increasing the level of the real debt held by the market at current prices level. However, this increase in real debt would not follow Modigliani and Brumberg’s (1954) life-cycle hypothesis of consumption, in which rises in asset prices are followed by an increase in the value of the financial wealth of bondholders – as lifetime resources of consumers would increase, consumption is expected to rise and so as the price level. The reason is that the wealth effect would be entirely offset by the anticipation of future tax increases or spending cuts in order to stabilize real debt and satisfy the intertemporal budget constraint faced by the government.

In the case of a monetary shock under the regime M, in which the monetary authority reacts strongly to changes in inflation, the central bank is expected to tighten monetary policy by conducting sales of nominal securities in open market operations, increasing though nominal interest rates. Leeper and Leith (2016) show that the inflationary effects of the monetary shock would be offset by this increase in the nominal interest rate, and the real public debt would increase due to the sale of securities in open market operations. However, as the agents expect the fiscal authority to adjust their future surpluses to stabilize the debt, the wealth effect would not be observed in the case of a monetary shock. Christiano and Fitzgerald (2000) explain that in regime M, the Ricardian Equivalence gives unrestricted liberty for the monetary authority to pursue the objective of price stability without fiscal shocks and debt sustainability becoming a major concern. This is because the fiscal commitment to primary surpluses functions as ‘hedge’ to support the pursuit of monetary goals.

³⁶ A totally exogenous primary surplus rule is an example of active fiscal policy. In the context of this work, reacting aggressively to inflation means that the monetary authority raises (reduces) the real ex-ante interest rate whenever the inflation rate is above (below) the target. This means that in a situation where the monetary policy instrument is the nominal interest rate, the monetary authority must raise (reduce) it in magnitude higher than the increase (decrease) in inflation. In other words, the elasticity of the nominal interest rate in relation to inflation is greater than 1. When the reaction function of monetary policy presents this property, it is said to follow the ‘Taylor rule’ (Taylor, 1995).

Fiscal and monetary interactions follow a **regime F** when the fiscal authority is active, and the monetary authority is passive. In this case, the fiscal authority engages in irresponsibly bond issuance to finance an arbitrary path of expenditure and taxes, while the monetary authority raises the interest rate less than one-for-one in response to inflation. Consequently, this ‘artificial’ fiscal surpluses would affect the price level considerably. Since the monetary authority would be given the function of ‘debt stabiliser of last resort’, agents anticipate a weak reaction to curb inflation from the central bank. Concerns about the central bank’s commitment to inflation targeting would rise and, consequently, the credibility problem of monetary policy highlighted by Kydland and Prescott (1977) and Barro and Gordon (1983). At this point, fiscal and monetary policies could be inefficient in stabilising the path of sovereign debt and the price level, respectively. Hence, it would increase the probability of setting the interest rate at an artificial level for adjusting the money supply to the restrictions imposed by the fiscal policy and the expectations of private agents.

Fiscal shocks under the regime F present different outcomes of those observed on the regime M. In this scenario, while the fiscal authority pays little attention to the intertemporal budget constraint, the central bank accommodates this looseness of fiscal policy via Seigniorage revenues to cover the deficit and the growth of public indebtedness. Short-sighted politicians are therefore to blame for price instability and the inefficiency of monetary policy in curbing inflation. This is because tax increases or expenditure cuts are too unpopular to be taken into account for stabilising the path of sovereign debt. As a consequence, politicians have more incentives to engage in a sort of domestic ‘beggar thy neighbour’ behaviour in which short-term problems are transferred to the future administrations. So, they raise political pressure for new bond issuances to meet the financing needs of the government.

However, this growth of public liabilities held by the market generates money illusion³⁷ – the mistaken perception of an increase in real wealth. This change in the perceived wealth potentially increases private spending, which consequently fosters demand for goods and services in the short-term. It will drive prices up to a new level of equilibrium in which the government’s intertemporal equilibrium budget condition is momentarily satisfied, and the present and future equilibrium in the goods market is restored. Nonetheless, this unstable equilibrium is reached at the expenses of a decreased real value of government liabilities (including the monetary base), i.e., reducing the real value of the assets held by the agents via surprise inflation.

³⁷ The term money illusion is commonly attributed to Fischer (1928), while its popularization is attributed to Keynes (1936). It usually refers to the tendency of economic agents (in particular households) to think about the value of money in nominal terms and not in real terms. In other words, economic agents may misunderstand the face (or nominal) value of money with its purchasing power (its real value) considering the price levels (including wages) recorded at a given moment in the past. The extreme expression of this illusion leads governments to inflation or hyperinflation through the abuse of debt monetisation.

We can now consider a monetary shock that increases inflation in the F regime. The monetary authority conducts open market operations expecting to raise the nominal interest rate slightly by proceeding to the selling of nominal securities. These operations may be, for instance, repurchase agreements for monetary purposes. On the one hand, this increase in the nominal interest rate dissipates the inflationary effects of the monetary shock. On the other, it generates an increase in the real debt due to the sale of bonds. Because the agents expect the fiscal authority not to adjust their surpluses to stabilize the debt (regime F), the monetary illusion could mislead their choices regarding future consumption and investments. This behaviour would drive the price level to a new equilibrium in which real debt stabilizes and offsets the initial wealth effect. In Leeper's (1991) terms, the regime F is characterized by the absence of Ricardian Equivalence, and the monetary authority is unable to control inflation.

In this case, a restrictive monetary policy would be insufficient to curb inflation. This is because increases in the interest rate would have the opposite effect: to lead the price level to increase and inflation to perpetuate over time. In general, the regime F is similar to the regime of fiscal dominance in terms of results (although the integration of Ricardian Equivalence to the analysis leaves little room for surprise inflation due to the real value of bonds). The relationship between active and passive policies is summarized as follows:

Figure 1.3 | Leeper's diagram for active and passive policies

		FISCAL POLICY	
		Passive	Active
		Respect to budget constraint	Ignores budget constraint
MONETARY POLICY	Active	Regime M: Price Stability, Fiscal sustainability, Anchored Expectations (Ricardian Regime)	Explosive Regime, without cooperation: Unpleasant Monetarist Arithmetic or Debt default
	Passive	Passive Regime, without cooperation: Indetermination of price level	Regime F: Debt monetization, high inflation, financial repression.

Source: Own elaboration, from Leeper (1991).

Globally, the FTPL provides a less common explanation for the episode of high and rampant inflation that affected Brazil in the 1980s. Loyo (1999) suggests an explanation rooted in Leeper's (1991) framework of analysis. By raising interest rates, the central bank has sought to curb high inflation. However, since the bondholders expected that the increase in interest charges would not

lead to fiscal consolidation (in other words, that the budgetary authority would not passively move towards stabilising real public debt), their consumption and investment choices were distorted by monetary illusion – which contributed to perpetuating an inflationary circle. In this episode, a more restrictive monetary policy would, therefore, have led to an increase in nominal debt and a surge in inflation. The FTPL then places emphasis not solely on the fiscal origins of hyperinflation – unlike the conventional view – but also the monetary contribution to price instability. In the first situation, inflation results from the monetary financing of budget deficits; while in the second, it derives from the fiscal impact of restrictive monetary policy.

1.2.1.1 The Fiscal Theory of the Price Level: Rupture or continuity to the monetarist doctrine?

Academic discussions on this subject are far from being conclusive. Indeed, there is no easy answer to this question. These two doctrines are framed by different theoretical frameworks, in particular with regard to the conduct of fiscal policy. The monetarist view, to which the arguments of Sargent and Wallace (1981) are part of, assumes that the intertemporal control of fiscal policy is the anchor for monetary policy and the centrepiece of a credible commitment to fighting inflation. Fiscal policy in general, or public debt management in specific, play only a supportive role to monetary choices. Monetary policy alone can assure price stability in the long run. In practice, this means that monetary policy is subject to a Taylor rule under which a central bank must raise (lower) the nominal interest rate ‘one-for-one’ in response to increasing (decreasing) inflation for stabilising the overall price level. As long as the central bank follows a Taylor rule, changes in the real interest rate are expected to be followed by variations on the real value of sovereign debt. Consequently, sovereign debt sustainability imperatively goes through monetary dominance. A dominant central bank becomes a *sine qua non* condition for *forcing* the government to accommodate monetary choices and to generate primary surpluses via structural adjustments.

Scholars of the FTPL also share these conclusions. The idea of a dominant central bank is consistent with Leeper’s (1991) Regime M, and globally reflects the understanding of scholars within this doctrine about the role of fiscal policy. This role is none but accommodative of monetary choices, hardly differing from the monetarist claims for monetary dominance. Here, instead of restoring the distributive role of fiscal policy while ensuring fiscal sustainability, the logic of ‘fiscal backing’ guides the intellectual efforts to improve the credibility of inflation targeting and the stability of independent central banks (Leeper and Leith, 2015; Davig, Leeper, and Walker, 2010, 2011). Both doctrines are mainly concerned about the best usage of fiscal instruments for

anchoring inflation expectations; Instead of fostering innovative solutions on how monetary instruments could better anchor fiscal expectations³⁸.

In this perspective, the optimal fiscal policy is the one that reassures the confidence of bondholders while paying secondary attention to the expectations of the taxpayers. It does not mean that the government should define the stance of fiscal policy based on non-discretionary choices or independently from the central bank – by no means. Our argument brings to the forefront the different ways taken by both doctrines to reach the same goal: responding to the demands of the bondholders in priority. Only then they would agree to reduce the risk premium, contributing to the financing of the balance of payments and the stability of the exchange rate. However, taxpayers may prefer the use of public investment as a key element in the structural reforms aimed at raising growth, instead of fundamentally asymmetric fiscal rules — weak on surpluses, strong on deficits. In both doctrines, the weight is placed on fiscal adjustments to reinforce central bank credibility, bondholder's confidence and the creditworthiness necessities for long-term growth and economic development. No significant effort is made to rethink monetary and fiscal instruments so to restore the distributive role of fiscal policy.

All of this suggests continuity rather than a rupture between the two doctrines. The monetarist idea of monetary dominance is embedded in the very essence of FTPL's 'active' and 'passive' policies. In the light of what has been presented, our understanding is that the proponents of the FTPL also seek to reinforce the subordinated role of fiscal policy to monetary goals, instead of pledging for horizontal coordination in which fiscal policy would have an important role in supporting aggregate demand. What is at play is not the engagement of the FTPL in theoretical reflections about optimal ways for both fiscal and monetary policy to *horizontally* coordinate, but the best way for fiscal policy to serve monetary goals. This leads to a conclusion about the continuity, instead of a rupture, of the FTPL with the philosophical assumptions of Sargent and Wallace (1981) – to whom the regime of monetary dominance delivers the optimal solution for price stability.

At this point, the logical question would be to understand how monetary dominance operates in practical terms. As we argue in the next section, this dominance operates via inflation targeting as the single-mandate of an independent central bank. The question of independence joins the previously discussed concept of dominance, and raise concerns about the reasons for both to prevail at the detriment of horizontal coordination among public institutions.

³⁸ Here, fiscal expectations are understood in its broader sense. That is, the expectations of the bondholders and taxpayers are taken into account. The expectations of the latter about the moderate level of sovereign debt expenses as part of the total public budget matters for price and also social stability.

1.2.2. *Practical: central bank independence and the neglect of horizontal coordination of policies*

The policy implications of the argument of monetary dominance are many and varied. Among those of great practical importance, central bank independence stands out. Although credit is often given to Rogoff (1985) for adding analytical precision to this change in the nature of central banks, the idea of dominance in economic policy is to be acknowledged as the ‘ground’ on which the framework for independence was developed. His contribution points to the need of entrusting monetary policy to an independent institution who weights inflation deviations more heavily than in the social-welfare function, what he will name as the ‘conservative central banker’. In this sense, an independent central bank would be able to commit to low inflation without suffering government pressure to finance the government’s deficit. To put it differently, independence from the political cycle would give the monetary authority unrestricted possibilities for stabilizing price level and discipline over government spending.

But how can we explain the correlation between the notions of ‘independence’ and ‘dominance’ in economic policy? It turns out that a dominant, but the still dependent central bank (i.e. first-mover *vis-à-vis* the fiscal choices, but subject to fluctuations in the political cycle), could be insufficient to ensure price stability. This is explained by the fact that fiscal backing is a *sine qua non* condition for reaching price stability via inflation targeting. In other words, the credibility of monetary policy, mainstream economists would argue, hinges on the subordination of fiscal goals to monetary ones. And that, if necessary, measures of fiscal consolidation are to be deployed so to anchor investor’s expectations. On the other hand, it can motivate taxpayers to hold nationwide anti-austerity demonstrations, from the very first perception of welfare losses related to the nature of such measures. Therefore, the fiscal discipline imposed under these terms is likely to ignite a large series of riots, so to pressure the government to halt the measures of fiscal austerity. The often-neglected tolerance of taxpayers to welfare losses as well as their expectations are also to be taken into account in the prospects of expected future inflation. Which, in turn, brings to monetary authority a trade-off between investor’s and taxpayer’s expectations to be solved. This situation highlights an important way in which central bank independence from the political cycle stands as a genuinely different and attractive ideal. Independence should then be understood as an institutional framework designed to surpass the insufficiencies of the ‘simple’ monetary dominance. For investors should be reassured about monetary policy stance being set accordingly to their expectations, i.e., without any interference from other spheres of the government.

At this point, a clarification about the distinction between independence and autonomy should be made. According to Klomp and Hann (2010), a central bank is said to be independent (i.e. to have total independence) when the freedom to define its own monetary goals is not at stake, and operational independence to define the means by which such goals are to be achieved is out of political interference. On the other hand, an autonomous central bank (also known as ‘operational independence’) stands for the framework in which operational freedom is given to the monetary authority for deciding the ways to which the goals defined by the government are to be achieved. As is the case for the independent central bank, these decisions, once made, cannot be undone by the government. Finally, the situation of a dependent central bank arises when not even freedom is given to the monetary authority to the definition of its own goals, neither on how such goals are going to be achieved.

This clarification leads to another issue of equal importance regarding central bank independence: It should not be interpreted as a form of unaccountability towards the taxpayers. The central bank power to affect different economic, social and political aspects of society, must be subject to accountability by taxpayers and their elected representatives. According to Eijffinger and Hoeberichts (2002), no independent or quasi-independent status was accorded to a central bank by any single jurisdiction (or monetary union), without the establishment of a clear set of rules of accountability. There are several formal mechanisms by which central banks are held accountable for their activities: constant monitoring by the government or the legislature, regular publication of reports, or hearings in public institutions (parliament) when central bank decisions are considered inappropriate. At the same time, independence should not be misinterpreted as a condition that eliminates any possibility of dominance, in which both fiscal and monetary authority would have no major interference in one another’s actions. Conversely, if understood through the logic of the game of chicken, this situation could create even more incentives for the central bank to use its independence in a way as to dominate fiscal goals, in order to place monetary goals at the highest level at the hierarchy of macroeconomic objectives. If the logic of the chicken game is to be taken into account, so to explain Rogoff’s (1985) view of fiscal and monetary interactions, the expected outcome of this competition among policies would then be a ‘coordination’ scheme based on ‘independence leading to domination’.

Keynes (1936) stood in clear contrast to this statement. According to him, monetary policy is one among other instruments at the disposal of the government to stabilize the economy. For stabilizing, we understand the simultaneous equilibrium of full employment, fiscal balance, the balance of payments, as well as the control of inflationary pressures. Macroeconomic stability is the result of simultaneous actions by all government institutions through coordinated policies.

Thus, 'independence' and 'subordination' are concepts that do not fit into this purpose. On the one hand, the monetary authority cannot be independent of other institutions (or specifically from the fiscal authority); on the other, fiscal policy cannot be subordinated to other policies (monetary policy in particular). He rejected the characteristic polarization of academic debates about fiscal and monetary interactions, in which two extreme views are predominant: one that advocates an active monetary policy (i.e., passive fiscal policy) as protection against fiscal mismanagement, and the other that advocates the use of passive monetary policy (active fiscal policy) to give unconstrained support to aggregate demand.

The proposition made by Keynes (1936) relies on the proper coordination of fiscal and monetary authorities to anchor private the expectation of the economic agents³⁹. So, they will be able to make allocative decisions that best correspond to their interests, mitigating risk and uncertainty. Thus, public policies, especially fiscal and monetary, must be defined on the principles of common and compatible objectives. It will prevent inconsistent signals being sent to the private sector - which would make of it a cause for uncertainty and interest rates to increase. This approach thus defends a certain degree of discretion to cope with random shocks to which an economy may be exposed. Contrary to the mainstream approach, he did not see the economy as a system characterized by the existence of a single and stable equilibrium. Thus, active policies are not intrinsically contradictory with the choices of private agents, but rather these policies are part of the context in which these choices are made. In other words, monetary and fiscal policies must operate within the limits of each instrument's stance, and the preservation of the rules of operation of the economy as a whole.

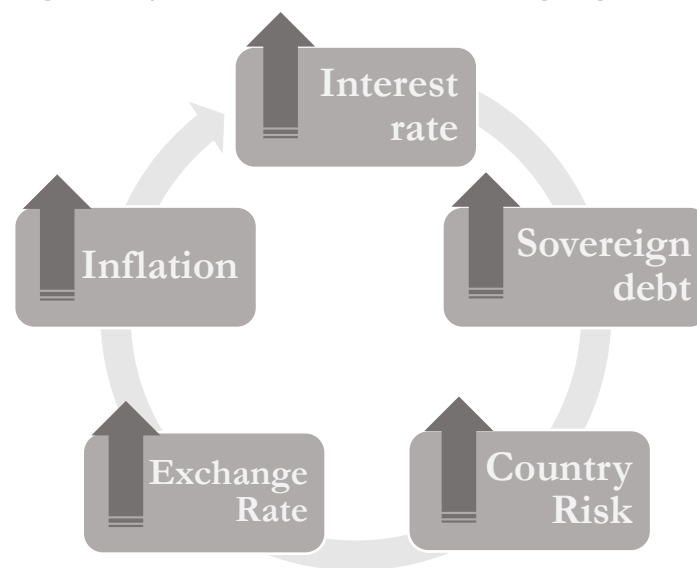
The advent of the monetarist ideas in the 1970s provided theoretical support to central bank independence based on the neutrality of money. From this perspective, the central bank should cease to use monetary policy to affect real variables, based on the premise that this would generate distortions in fiscal and monetary interactions and would undermine the expectations of the agents. The structure proposed by Keynes (1936), who admitted the possibility of a monetary policy affecting output and inflation, was reduced to the commitment to price stability under a regime of monetary dominance. Across time, however, the limits of the practical aspects of this regime became more evident, especially in countries with a high degree of exposure to exogenous shocks – such as the emerging economies.

For this group of countries, in particular, the horizontal coordination of policies seems even more necessary due to their higher exposure to exogenous shocks. The dominance of monetary goals

³⁹ The comprehensive nature of this approach is made explicit in volumes 25-27 of the *Keynes Collected Writings* (1980), where fiscal, monetary, commodity price control, foreign trade, exchange and industrial policies are proposed for the post-war period.

over the fiscal ones manifested in the adoption of inflation targeting by an independent central bank is prone to deepen the fiscal fragility of the government in times of economic distress. Some of the authors discussing the narrow focus on inflation targeting in emerging economies are Balbino et al. (2011), Arestis et al. (2009), Gonçalves and Salles (2008). In Brazil, specifically, Favero and Giavazzi (2004) show that the narrow focus on inflation targeting was counterproductive during the 2002 Lula da Silva presidential campaign. It contributed to the vicious cycle propagated in the Brazilian economy by the fear of public debt unsustainability, culminating in a significant rise to the country risk⁴⁰ and inflation expectations. It finds a ground explanation in Blanchard's (2004) analysis of fiscal dominance and inflation targeting in Brazil. The increase in interest rates aimed at keeping inflation in line with the target leads to an increase in public debt service and, consequently, to higher expectations of sovereign default. The higher the default risk, the more contorted the pattern of capital flow must become after this happens. This leads to a depreciation of the real exchange rate - impacting the trade balance - and, therefore, to new inflationary pressures to rise. Figure 1.4 below summarises this vicious circle:

Figure 1.4 | The vicious circle of inflation targeting in Brazil



Source: Own elaboration based on Blanchard (2004).

Blanchard (2004), although emphasising the *original sin* problem⁴¹, sheds light on the general question of public debt indexation – either to a foreign currency or domestic indices. The Brazilian economy has some specificities regarding debt indexation that raises concerns about the pertinence

⁴⁰ On 20 Mars 2002, Brazil's EMBI (JPMorgan Emerging Market Bond Index) amounted 698 points and the targeted rate was defined by the Brazilian Monetary Policy Council (COPOM) at 18.5 p.p. On 23 October 2002 the former had skyrocketed to 1.883 points while the latter was raised to 21 p.p.

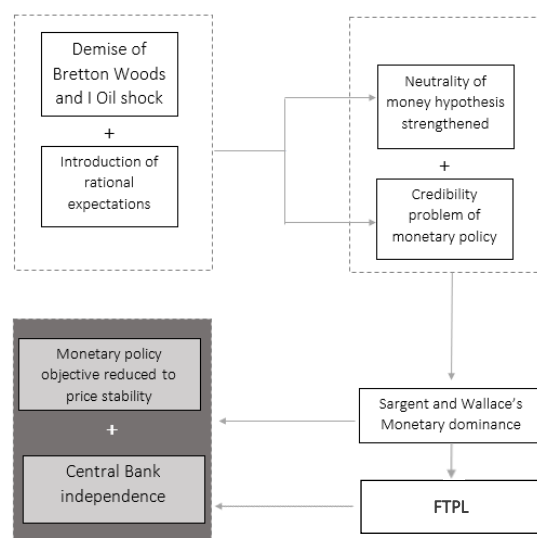
⁴¹ Original sin refers to the inability of emerging and developing economies to issue external debt in their own currency, or long-term domestic debt with fixed rates (Eichengreen, Hausmann and Panizza, 2005).

of inflation targeting. A large share of the country's sovereign debt is indexed to the interest rate. Besides, the monetary instrument for liquidity management itself – the repurchase agreements – is also indexed to the main central bank rate. In the light of what was said above, this indexation constitutes a major drawback of inflation targeting in Brazil. This question is well explored in Chapter 3.

To summarize, this section discussed the practical influence of Sargent and Wallace's (1981) fiscal dominance. This influence takes the form of the practical aspects of monetary dominance: Central bank independence and the inflation targeting regime. This regime, inspired by the monetarist ideas of the 1970s, assumes that any inflation derives from variations in the money supply. Consequently, inflationary pressures are to be primarily curbed by the rise in interest rates. However, the impacts of inflation targeting on public investment and the fiscal balance of the government seems not a primary concern for the proponents of monetary dominance. Rochon and Rossi (2006: p. 626) have important insights on this issue:

Higher interest rates may reduce inflation, but through a collapse of the real economy. In fact, increases in the rates of interest will redistribute income toward rentiers and away from households, and lead to a collapse of effective demand. Hence, by collapsing aggregate demand and increasing unemployment, central banks may succeed in decreasing prices, but at a great cost to the whole economy.

The specificities of the Brazilian economy illustrate some of the limits of this regime. The little emphasis placed on the vicious circle of inflation targeting, grounded on the high level of debt indexation, shows that there has been little progress in academic discussions outside of the realm of vertical coordination. This stems from the fact that scholars have been neglecting i) that monetary policy choices entail important fiscal and social costs; and ii) that the regime of monetary dominance alone does not solve the problem of non-impartiality in public decisions (e.g. interest rate choices or the targeted inflation). By raising real interest rates, there is a transfer of revenue from taxpayers to the creditors of public debt (bondholders). The context of its appearance (presented in the general introduction), and its theoretical and practical influence can be observed in figure 1.5 below:

Figure 1.5 | The emergence and influence of ‘monetary dominance’

Source: Own elaboration.

Overall, this second section presented some of the practical and theoretical influences of the idea of fiscal and monetary dominance over government choices. The discussion of these two realms in which Sargent and Wallace's (1981) theory exerted important influence was not carried out without a specific purpose. It had the purpose to set the foundations of the next section's political economy of monetary dominance.

1.3. The political economy analysis of monetary dominance

The literature on fiscal and monetary interactions has been centred on the idea of dominance. Both fiscal (diagnosis) and monetary (treatment) dominance have eclipsed the prospects of horizontal coordination. This section addresses a critique to this polarisation. It should be clear that none of this is to deny that massive fiscal dislocations may generate price instability; Neither to pledge in favour of fiscal dominance. It does represent a major threat to price stability. The critique presented along the lines of this section deals with the economic forces driving forward the regime of monetary dominance. We go beyond the dichotomy of dominated (fiscal authority) versus dominant (central bank), and investigate the existence of vested interests conferring legitimacy to monetary dominance. This legitimacy, we argue, precedes the quest of policy favours by financial interest groups (bondholders) operating alongside the central bank.

To support our argument, we borrow from different doctrines of economic thought some of the constitutive elements of policy choices, interest groups and coordination of expectations. We have no intention to join the debates of quantity-theory, cost-push, transmission mechanism or demand-

pull, that justify the regime of monetary dominance as the best solution to cope with inflation. We assume that inflation is composed of some elements of monetary expansion, group struggle, endogenous and exogenous shocks, cost-push and demand-pull. In other words, we see the choice of a regime of monetary dominance to be an issue of political economy. As argued by Berthaud and Kébabdjian (2006), the political economy framework provides analytical tools for understanding power and wealth interactions within the State at the moment of policy choices – an issue often neglected in the quantitative models pointing to the optimality of the regime of monetary dominance. Mukand and Rodrik (2018: p.1) corroborate this view by stating that “by focusing on [vested] interests, political economists have shed light on policy and institutional change and the persistence of inefficient policies in a variety of contexts”. The key force of a political economy analysis of monetary dominance lies then on the possibility to identify a conflict of interest within monetary choices. And, therefore, to deepen current understanding about the role of interest groups in promoting monetary dominance to the detriment of horizontal coordination.

For the sake of our argument, we bring together some elements of the logic of collective action present in Mancur Olson’s seminal contribution, as well as the notion of convention economics proposed by French economist André Orléan. Once combined, both theories illuminate some of the limits of the regime of monetary dominance. Hence, this section aims at re-orienting the general thinking on fiscal and monetary interactions towards the horizontal coordination of policies.

1.3.1. Interest groups and the economic forces pledging for the regime of monetary dominance

Fiscal dominance is a concern of primary importance to price stability. However, this does not take us far without some further analysis of the forces pledging for monetary dominance. Our understanding of ‘forces’ is similar to Besley’s (2007), that is, as the action of interest groups in the use of their power to move forward a given research agenda, as well as to exert influence over the policymaking process. The literature on the political economy of policy choices assumes public decisions to be a function of size and organisation of interest groups. A leading figure in this literature, Rodrik (2018, 1996) demonstrates that the power and influence of interest groups are proportional to the political and economic costs of membership: For collective action to take place, these costs should be lower than the potential benefits obtained from policy favours. This notion stands out when evaluating a group’s bargain strength to exert influence over policy choices. Besides, we can better understand the dynamics of private gains incurring in public losses. This view also grounds several models of competition among interest groups for political favours, such

as Alesina *et al.* (2001), Becker (1983 e 1985), Mitchell and Munger (1991), Persson and Tabellini (2000).

Grossman and Saurugger (2012) and Meynaud (1957) identify six distinguishing features within the *modus operandi* of interest groups seeking for policy favours: i) the concealment of public problems through closed connections within the media and the high instances of government; ii) the presentation of solutions to socio-economic issues in the name of ‘general interest’, but veritably aimed at protecting their vested interests; iii) active participation in the formulation of public policy alongside the bureaucrats; iv) the strong participation on the decision-making process, pressuring the government – indirectly or directly – through the threat of resource unavailability; v) important influence on the implementation of public policies, influencing local leaders; and iv) shaping the general perception about the benefits of the policy during the evaluation process. The authors also highlight that the operation of interest groups varies according to their bargain strength. It can occur through pressures to grant subsidies to a specific industry, the enforcement of monopolistic productive activities, the concession of licenses, decisions about interest and inflation rates level and other actions that may generate exclusive benefits to these groups.

Becker (1985) points out some of the inefficiencies generated by the operation of interest groups alongside public institutions. The societies where the representation of interests are predominantly unbalanced show a proneness to poor resource allocation, increase in inflationary pressures, income concentration and high unemployment. As for the unbalance of interests, we can think of bondholders influencing policy choices in a way that maximises their welfare while reducing those of the taxpayers significantly. The unbalance in interest representation derive, therefore, from the lack of institutional mechanisms giving the latter the capacity to organise their interests against the intended measures of the formers. The policy favours granted to financial interest groups, and the inaction of the taxpayers impose important social costs for the whole society to weigh.

Krugman *et al.* (2015) explain this inaction by a sort of ‘perception effect’. Policies that impose large losses on the whole, but small losses for any individual, may not face major resistance. We can suppose a country that applies a quota for the import of a good. And that this restriction follows the request of an interest group to benefit from a competitive advantage. This quota will impose an additional expense of \$10 for each taxpayer per year. In total, this would amount to a global cost to society of \$1 billion a year. Thus, from an individual point of view, there would not be enough incentives to pressure the government to withhold the quota, while collectively, there would be. The literature acknowledges these group dynamics in terms of a collective action problem.

This literature is championed by Olson (1965). His fundamental contribution to the debate was to suggest that “Unless there is coercion or some other special device to make individuals act in their common interest, rational, self-interested individuals will not act to achieve their common or group interest” (Olson 1965: p. 2). His main argument is that individuals will not offer any contribution unless they have selectively received a stimulus (material) that is directed only for members of the group. If the group defends a collective cause (i.e. a public good), some individuals will face incentives to benefit from it without making any effort (*free riders*). Since public interest groups do not offer material incentives to attract all the members, their mobilization becomes less likely to happen. The organizational dilemmas highlighted by Olson are particularly relevant to non-organised groups (here, the taxpayers). They are concerned about the well-being of the community, but they have no easy way of identifying all their potential members, as they are normally geographically dispersed throughout the country. For instance, a taxpayers’ opposition to fiscal austerity policies, targeting social spending so to comply to monetary objectives, would be very unlikely to take form - despite the large size of this group and the potential for change. However, when the size of the group is relatively small, the problem of collective action can be mitigated. This is because all members of the group have more significant and effective participation in the benefits to be received. In addition, those members who do not follow the group, the free riders, are easily identifiable and thus excluded.

In this sense, Olson identifies three different types of groups according to their size and capacity to afford the economic costs of collective action. First, the small (or oligopolistic-sized) groups can be divided into privileged and intermediate groups. The distinctive feature of *privileged groups* is the presence of at least one member within the group who would be willing to bear the costs of obtaining the collective good alone (even if the other members choose not to pay the costs). In this case, collective benefits are obtained regardless of the organization and agreement among the members of the group. On the other hand, members of *intermediate groups* have not sufficient incentives to support alone the costs for obtaining the good. In this case, effective coordination and organization are *sine qua non* conditions for obtaining the benefit collectively. However, the small size of this group makes it easier for the members i) to reach a consensus on the individual costs of the collective action; and ii) to exert each other’s supervision for mitigating the risk of free rider behaviour. Thus, when the organisation costs are lower than the advantages that can be obtained through collective action, members of the intermediate group are likely to coordinate for obtaining what they agreed to pursuit.

Finally, there are *latent groups* (of large dimensions). The members of this group have little incentives to engage in collective action because there is a difficulty in identifying free rider members. Even

if the identification of free riders were possible (or, at least, less costly), the members would not have incentives to act. This is because, due to the large size of the group, any deviant behaviour would not generate significant effects on the other members of the group. With regard to these groups, there is a low probability of a successful collective action. And this is explained by three different factors: First, the larger the group, the smaller and less suitable the reward for those who actively participate in attaining the goal. Second, the larger the group, the smaller the share of gain for each member (individuals make a calculation to know whether the gains of free riding would outweigh the gains from active participation). Third, the larger the group, the higher the organizational costs. There is a combination of a reduced individual share of benefits and high costs to be borne, which would make it very unlikely for large groups to organize with a view to obtaining collective benefits.

Taking into account that monetary policy decisions generate favourable and unfavourable outcomes for all sectors of the economy, and following Olson's (1965) framework, we can deduce that bondholders and taxpayers have incentives to organize themselves as a group in order to pressure the central bank so as to benefit the most from monetary decisions. However, the interest group with more chance to succeed is the one that is better organised. This organizational ability, in turn, closely relates to the group size. Thus, the small group of investors are in a better position to influence monetary decisions in their favour. This is because this group has oligopolistic dimensions which, depending on the case, can be constituted as privileged groups (where the advantage derived from a given monetary decision may be so significant that a single agent perceives it as advantageous, independent of the group's action, to make efforts to achieve the intended objective); or as intermediary groups (where, although the benefit seems not so strong as to convince one or some of the group members to undertake an individual step in the pursuit of the benefit, there are incentives for the group members to organize and coordinate themselves to obtain the collective benefit). Thus, there is a high probability for the group of investors to organise themselves with a view to defending their interests before the central bank, making the necessary efforts to obtain the monetary decision that maximises their benefits the most.

On the other hand, the large group of taxpayers would have insufficient incentives to organise around a specific goal and carry out a collective action vis-à-vis the monetary authority aiming at the maximisation of their benefits; Nor an effective collective action to oppose the possible private benefits generated by the central bank. There is, therefore, an 'interest imbalance' vis-à-vis the central bank (with considerable advantages in favour of the bondholders' group), which is likely to compromise the impartiality of the monetary authority.

The problem of collective action, therefore, provides a valuable explanation about the inaction of taxpayers in the situations where policy choices may disadvantage them. The potential losses imposed on this group are higher than their ability to engage in collective action⁴². Thus, the action of financial groups over monetary choices can lead to collective losses. Recent findings on trade policy corroborate our argument. According to Krugman *et al.* (2015), these policies have become a kind of auction. Interest groups ‘buy’ policies by offering conditioned contributions to the policy to be followed by the government. Even if policymakers have general welfare as a primary concern, they will face incentives to exchange losses in the general welfare of taxpayers for additional resources to finance their election campaigns. As a result, well-organised groups (i.e. those who have been able to overcome the problem of collective action) will have more influence on policy. In the same vein, Nader and Nader (2018) explain the influence of interest groups over monetary choices by the logic of collective action. Monetary policy decisions, especially those related to interest rates, involve conflicts of interest among the various economic sectors in a similar manner of Frieden’s (2014) analysis of the political forces operating underneath exchange rate decisions. This is because, while low interest rates benefit the productive sectors, higher interest rates are beneficial to bondholders - especially if the liabilities in question are indexed to the interest rate. In other words, monetary policy decisions are not impartial. Not only because such decisions can affect real variables, but because they generate ‘winners and losers’ (Modenesi and Modenesi, 2012).

The central political economy question is then to know what forces lie behind a price stability mandate within the context of some government welfare function in which objectives are traded-off against one another. Despite the abdication of other macroeconomic objectives to focus on price stability (involving the acceptance of lower economic activity and higher unemployment at least in the short-term), inflation has not been eradicated or even rolled back very far. The achievement is essentially concentrated to refraining inflationary spirals, often at a very high cost (as will be further discussed in chapter 2). The superiority of policy based on the monetarist approach is often demonstrated by the success of West Germany and the United States in combating inflation, which concentrates solely on their refusal of regulation of the economy by an institution other than an ‘impartial’ central bank.

⁴² This situation is also treated under the ‘Rent seeking’ problem. It is usually defined as the political activity of an individual or group that adopts scarce resources to pursue monopoly rights granted by the government, or is an activity that tries to appropriate the existing wealth instead of creating it. Major contributions are Tullock (1967), Krueger (1974), Posner (1975), Buchanan *et al.* (1980) and Tollison (1982). The basic preposition is that: a) the spending of resources to achieve a transfer of income is, in itself, a social cost; b) privilege resulting from the market or income represents a loss of well-being over consumers or taxpayers. The instruments and policy action of the government for which the income is created are bribes directed at the sale or granting of subsidies, privileged taxes, maintenance of tariff prices, import quota establishments, granting of licenses, payments of high wages or additional payments (advantages over wages). Further details on this topic can be seen in the review by Mitchell & Munger (1991).

Hirsch and Goldthorpe (1978) highlight this issue, arguing that this choice results from a conflict between domestic interests concerned to limit the scope for state action in the economic sphere. They argue that this is the case for banks and other financial institutions having moneyed interests in an era where direct control of the democratic states has been lost to the mass electorate. For inflation presents an important problem of welfare and allocation. Sometimes it involves distributing the dividends of economic growth, but very commonly it serves as the mechanism for sharing out the social and economic costs of downturns and stagnation. Which consequently makes of inflation an important form of distributive conflict.

If we think of the situation of sovereign debt monetisation under the regime of fiscal dominance, we see little difference in the *nature* of its operation when compared to the monetisation of debt by private institutions under the regime of monetary dominance. The role of short-sighted politicians in the former was replaced by the bargaining strength of the financial institutions in the latter. For primary dealers⁴³ or other powerful financial institutions, dealing directly within the monetary authority through open market operations, are also able to exert pressure on the central bank to monetise the assets it controls – whether by means of control of interest rates on the part of banks or the monetisation of liquid assets through very short-term operations with the central bank, such as the repurchase agreements⁴⁴. For instance, the Brazilian experience on the extensive use of this monetary instrument for liquidity management suggests a change in the economic agent pressuring the central bank for asset monetization (from short-sighted politicians to financial institutions), while the practice remains essentially the same in both regimes of dominance. Neither the fiscal nor monetary regimes of dominance have solved the problem of inflationary pressures originated from the co-opted public institutions for debt monetisation. The difference stems from the subtle and sophisticated way in which the central bank is used to monetise debt under the regime of monetary dominance.

In a very early insight about this relationship between interest groups and the monetary authority, Gordon (1975) explicitly rejected the view that accelerations in money supply and prices are thrust upon society by the ‘capricious folly’ of governments alone. Rather, they should also be understood in terms of political pressures exerted by interest groups around monetary decisions. As the financial institutions cast critical eyes on any form of sovereign debt monetisation in all but its

⁴³ A primary dealer is a financial institution (primarily banks) that has been accredited to trade securities with a national government. Dealers participate actively in primary issuances of federal public securities and in its negotiation on the secondary market. For example, a primary dealer may underwrite new government debt and act as a market maker for the Brazilian central bank.

⁴⁴ A more detailed analysis on operations of rebound agreements and its use as a tool of monetary policy will be presented in Chapter 2.

original and also perverse form: the support provided by the central banks to banks themselves. In order to ensure perennial support from the central bank, financial interest groups will constantly be looking for new forms to limit the government's scope of action. Given that 'financial confidence will necessarily be affected by state actions that transgress the bounds considered safe by financial interests, a powerful indirect deterrent against such actions is constantly at play' (Hirsch, 1978: p 267). This argument is corroborated by Roubini and Setser (2004), to whom coercion and vested interests are in the same pathway. If these do not trust or approve the course of a given policy, then their dominance can only be secured through coercion, which is itself political and contradicts the idea of an impartial central bank. Datz (2008) highlights that this situation is a part of the complex mixture of antagonism and mutual support of the modern relationship between financial institutions and central bankers, with the government engaging as both a supplier and consumer of financial transactions not different of those observed by private institutions.

Large and powerful financial institutions provide at once a potential captive source of finance for the government, and a source of potential resistance to it. Governments that have antagonised their financial communities have almost without exception encountered a 'capital strike' to some degree. This situation is described by Hardie (2011) in terms of a distributional conflict between investors (bondholders) and taxpayers. According to him, the former's ability to trade risks increases their bargain power vis-à-vis the latter, and therefore the investor's capacity to 'reward or punish governments for policy decisions directly through the cost and availability of financing' (Hardie, 2011: 141). Remediation to this conflict comes in the form of credible commitments to avoid important fluctuations on the risk premium of sovereign bonds. This 'exorbitant capacity' to exert discipline over governments is commonly associated with efforts for fiscal consolidation. Once implemented, structural reforms and institutional changes reassure bondholders about the credibility of the monetary authority in pursuing inflation targeting.

In the same direction, Haeger (2016) provides a valuable account of the extent to which public debt ownership and the set of priorities established by the government are related. According to her, demands coming from the (very organised and influent) group of bondholders are in constant conflict with those of taxpayers (a disorganised and therefore less influent group). Consequently, if a government dares to deprive a share of the income of the most influential group, even in a very modest proportion, their immediate reaction would be to transferring parts of their assets out of the country, causing the national currency to depreciate (or devalue); And, therefore, the balance of payments to deteriorate and inflationary pressures to rise. A sudden stop in capital flows could occur and consequently an economic crisis – a situation that no government can and wants to

afford for long. This is more worrisome for the emerging economies due to the high dependence on foreign capital. As demonstrated by Calvo et al. (2006), massive and unexpected capital outflow is often followed by a rise in inflation expectations. Under these conditions, he argues, the expected rate of inflation would be totally outside the control of the monetary authority.

This conclusion is very similar to that highlighted by some tenants of the FTPL, in which the central bank would be unable to control the inflation rate without being well-coordinated with the fiscal authority. However, different from the FTPL (which is an extension of the monetarist ideas with regard to the need of disciplining the fiscal authority in order to optimise its subordination to the monetary authority), here we call attention to a new form of perverse interaction between the government and the central bank. The perverse interaction suggested here has not emerged under the regime of fiscal dominance but under the regime of monetary dominance proposed by Sargent and Wallace (1981). For the ‘supply of’ and the ‘demand for’ asset monetisation, by organised groups under the regime of monetary dominance, would have a similar effect to those observed in the unpleasant monetarist arithmetic. The pressure for monetisation, which imply raising the rate of money creation, may lead the monetary authority to accommodate these pressures and would, ultimately, *force* the taxpayers to afford these costs. Note that the use of the term ‘force’ here is not meaningless. In the unpleasant monetarist arithmetic, this term designates the forced monetary choices to accommodate the government decision to monetise debt via Seigniorage revenues. Under the regime of monetary dominance, the ones forced to assure the costs of policy favours are the fiscal authority and, hence, the taxpayers.

This subsection provided an explanation of the driving forces behind the regime of monetary dominance. We adapted Olson’s (1965) framework to the political economy analysis of fiscal and monetary interactions. In so doing, we shed light not merely on the determinants of the collective action of bondholders, but also on the reasons for the inaction of the large and non-organised groups of taxpayers. This unbalanced representation of interest vis-à-vis the central bank highlights a practical implication of monetary dominance, namely, the narrowing of the government’s policy space. The government is compelled to accept the demands from organised groups due to the absence of contestation by the non-organised group. However, this group dynamics offers just a partial answer about the ‘consensus’ around monetary dominance. The failure of Nobility in coordinating the expectations of the different groups within medieval society around a theoretical idea provided meaningful insights about the reasons for an economic regime to fall. The interest groups at the vanguard of the shift from medieval to modern society have not neglected that theoretical support precedes political legitimacy; Neither the financial interest groups nowadays. To explain the interconnectedness of the theoretical idea of monetary dominance and the operation

of financial interest groups, we borrow a framework that has long been neglected in the academic debate on fiscal and monetary interactions: convention economics.

1.3.2. *Convention economics and the theoretical legitimacy of monetary dominance*

This subsection focuses on the formulation and maintenance of a convention by interest groups. Early contributions to the study of convention date back to Locke's (1689) notion of the *tacit agreement* before it received systematic attention from economists. Hume (1740), Keynes (1936), and more recently, Orléan (1994) questioned the role of economic conventions in solving coordination problems. We extend this questioning to the analysis of vested interests behind the vertical coordination of fiscal and monetary policies. In so doing, we aim at elucidating how financial interest groups succeed in coordinating expectations through a specific convention: Monetary dominance.

The idea of convention stems from the problem of uncertainty and coordination. To cope with both problems and assure the stability of economic systems, governments rely on institutions. The institutions-as-rules approach proposed by North (1990) identifies formal and informal institutions as the 'rules of the game'. While constitutions, property rights and other laws enforced by the state, are formal institutions; The codes of conduct, sanctions, taboos, norms of behaviour, and conventions stand for informal institutions. Denzau and North (1994) affirm that the legitimacy and maintenance of institutions over time, either formal or informal, derives from the capacity of a leading group or authority to share its 'mental models' with other groups within society. Specifically, it stems from the capacity of well-coordinated groups to provide an interpretation of the economic environment to the unorganised groups and to share with them a mental model on how this environment should be structured.

Monetary dominance, in the light of convention economics, can be interpreted, therefore, as a shared mental model that serves to define a problem, describing the inefficiencies of the institutional arrangement for monetary and fiscal policies in such a way as to set a direction for a future transformation. In order to manage uncertainty, a convention on monetary dominance specifies positive and negative agendas. That is, a hierarchy of problems that must be faced (e.g. price instability and sovereign debt monetisation), solutions to these problems that are acceptable (e.g. inflation targeting and central bank independence) and those by no means acceptable (e.g. public deficits and fiscal dominance), organizations in charge (the central bank and the IMF), as well as rules and regulations (e.g. Basel Rules and Constitutional Amendments). There is, therefore, an order for transformation that is established. These rules are substantially strengthened if the

spread of this convention by the organised group relies on coherent historical rhetoric. It would come as a theory that explains how the present situation is related to past inefficiencies and, especially, the expected future if the suggested rules are strictly followed.

This set of rules and the positive and negative agendas corresponds to what Orléan (1994) defines convention economics. The convention shapes individual and collective expectations, and have an important role in influencing the behaviour of institutions by means of strategic thinking and policy choices. The author provides an explanation as follows: we have a convention if, given a population P , we observe a behaviour C based on the following characteristics: (i) C is shared by all members of P , (ii) each member of P believes that all others will follow C and (iii) such belief gives members of P sufficient reasons to adopt C . Therefore, a convention on monetary dominance, following this definition, deals with the structural transformations that must be introduced in the institutional arrangement between the fiscal and monetary authorities. It defines what is ‘wrong’ in the present as a consequence of past inefficiencies, what structures should be transformed to have a better situation in the future, as well as the positive agenda for change.

The enforceability of this convention is proportional to the size of P and the political and economic bargain strength of the financial interest groups (investors) G . These political and economic forces provide benefits to those who adhere the convention, and sanctions those rejecting to adhere. As a result, P contains not only ‘true believers’ on this convention ($P - G$) but ‘opportunists’ (G) also motivated by utilitarian purposes. The legitimacy and stability of the regime of monetary dominance depend though on i) the belief of $P - G$ in the cognitive content of this convention; and (ii) that the *perception* of these members about the benefits from this regime outweighs or, at least, equals their expectations.

The cognitive content of the convention on monetary dominance is composed of ‘codified’ and ‘tacit’ pieces of knowledge structured around axiomatic social and economic principles (e.g. everyone benefits from price stability). Therefore, together they form a ‘protective belt’ that makes this cognitive content operational in practical terms. Within codified knowledge, we can distinguish the socialisation of procedures and scientific knowledge. The former represents, for instance, myths and fables that are shared by members of population P . This knowledge, in addition of establishing and strengthening community ties, aims at reducing uncertainty by showing how, if everyone follows the convention, it would be possible to overcome bad situations (such as inflation or poverty) and move towards ‘good’ situations (such as growth, stability or general opulence). To put it differently, it refers to societal perceptions of how society ‘is’ and how it ‘should be’. These perceptions are shared by members of the population P and result from the personal experience

of each individual and are transmitted, within the same generation and across generations, through various cultural and educational mechanisms.

Through some of this knowledge (such as myths or fables), a ‘vision of future’ gains a teleological component. It provides a fertile ground for the financial interest groups to use a legitimate fear (e.g. hyperinflation), to shape the perceptions about the causes of this fear (e.g. fiscal mismanagement *alone*), proceed to the formulation of a convention that coordinates the expectations within different groups in society on how to overcome this fear (monetary dominance), and assure the stability of this convention through coercive power (e.g. the cost and availability of financing). Hence, the convention on monetary dominance ultimately becomes a means of identifying and solving economic problems. Although this convention is presented as a ‘national project’ in the name of the ‘general interest’, it actually reflects the preferences of the strongest economic and political power prevailing in the society.

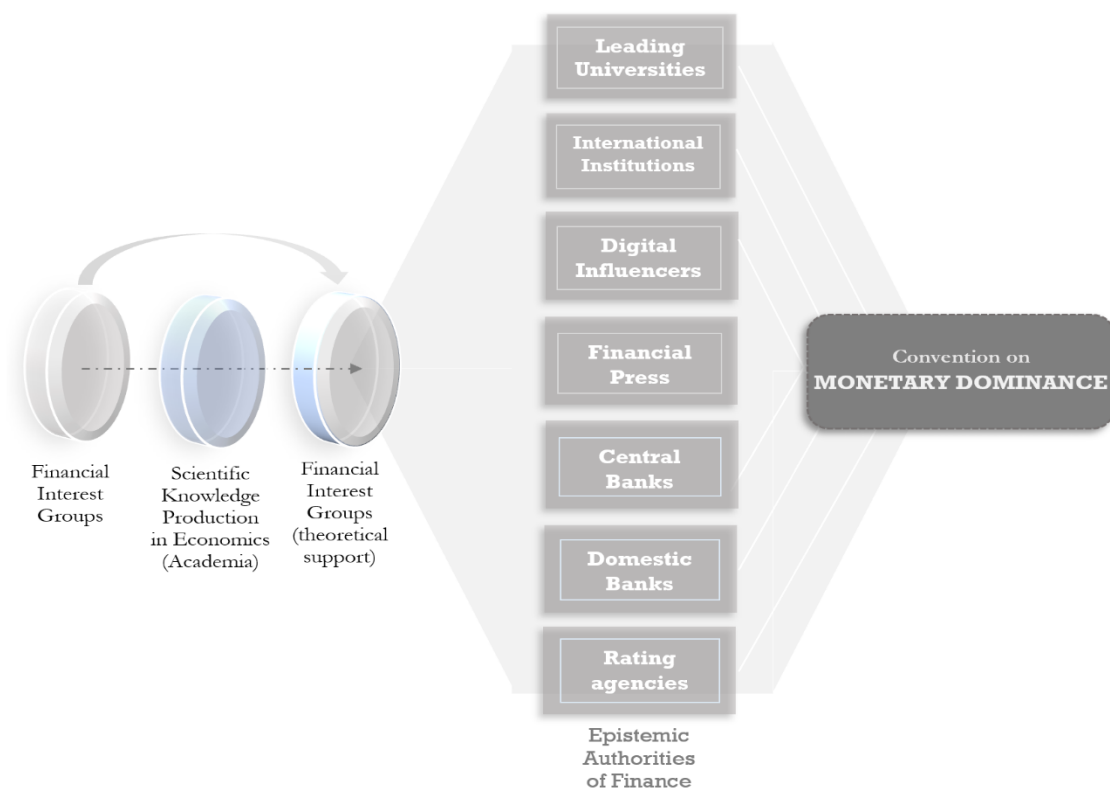
The second part of codified knowledge comes from science (in our case, specifically, from monetarist theory), which is the result of specialized knowledge developed, spread and perpetuated by economists associated to academic institutions of great reputation at the international level. In this regard, Haas’ (1992: p.3) definition of an epistemic community is relevant to explain the foundations for the legitimacy of the convention on monetary dominance. According to him, these communities are: “networks of professionals with recognized expertise and competence in a particular field who can provide relevant knowledge about public policy in the field in question”.

From the monetarist perspective, for instance, it is evident enough what, in general terms, a government must do in order to bring about greater price stability: that is, control the growth of money supply more tightly, so as to keep it in a closer relationship with the growth of output. If then, a government wishing to reduce inflation does not follow such a policy, its members (or those who advise them) are ‘bad’ economists behaving irrationally (or in an ‘inconsistent’ manner) for not taking the effective ‘scientifically accredited’ means of achieving its end. From this ‘scientific version’, usually expressed by contingent statements (e.g. assuming that economic agents have rational expectations or markets are efficient), more simplified and normative versions are elaborated and disseminated through other epistemic authorities, such as the leading universities in knowledge production in economics, international institutions (e.g. World Bank ‘good governance’ indicators, the BIS and the IMF), social media influencers in finance, the financial press (e.g. the

Wall Street Journal, the Financial Times or Brazilian Valor Econômico), and the three ‘big four’: the big four central banks⁴⁵; domestic big four banks⁴⁶; and the big four rating agencies⁴⁷.

We extend Vanel (2008) to define these institutions as ‘epistemic authorities of finance’. These institutions play a pivotal role in shaping preferences and coordinating the expectations of taxpayers, bureaucrats and policymakers around the vested interests of financial groups. This interaction between the financial interest groups and scientific knowledge production, and the diffusion of this knowledge via the epistemic authorities of finance to coordinate the expectations of the agents around the convention on monetary dominance is illustrated in Figure 1.6 below:

Figure 1.6 | The legitimization process of the convention on monetary dominance



Source: Own elaboration.

This close relationship between the financial groups and the production of scientific knowledge in economics does not mean that scholars lack integrity or are corrupt. We believe that most scholars in economics are honest, scientific and neutral individuals motivated by noble purposes, interested in contributing to solve the fundamental questions of the *Oikos nomos*. Our purpose is to shed light

⁴⁵ The Federal Reserve, The Bank of England, The Bank of Japan and the European Central Bank.

⁴⁶ This term is used to define the four largest banks that dominate the banking industry domestically. In Brazil, for instance: Itau Unibanco, Banco do Brasil, Caixa Econômica Federal and Bradesco; In the US: JP Morgan Chase, Citigroup, Bank of America and Wells Fargo.

⁴⁷ The Big Four is the term used to refer to the four largest professional services networks in the world, consisting of Ernst & Young, Price, Deloitte, and KPMG.

on the forces that we use to explain the convention on monetary dominance and that the very same forces can ‘capture’ research in economics (or academia in general). This is a concern also present in Zingales (2013). He acknowledges that, in principle, scientific knowledge in economics intends to serve the public interest. In practice, however, if theoretical knowledge producers (i.e. universities or think-tankers) are ‘captured’ by financial interests (via endowments, the prospect of careers outside of academia or access to industry-specific information), then academic research is greatly exposed to the risk – wittingly or unwittingly – of bias towards the objectives of the financial groups.

Consequently, academia may advance narrow financial interests instead of serving the public interest. It may compromise the general trust in scientific knowledge in economics for leading social changes and could undermine the prospects of knowledge-driven societies. This concern is also present in Keynes’ General Theory with regard to the close relationship of David Ricardo’s ideas to the interests of a specific group:

The completeness of the Ricardian victory is something of a curiosity and a mystery. It must have been due to a complex of suitabilities in the doctrine to the environment into which it was projected. That it reached conclusions quite different from what the ordinary uninstructed person would expect, added, I suppose, to its intellectual prestige. That its teaching, translated into practice, was austere and often unpalatable, lent it virtue. That it was adapted to carry a vast and consistent logical superstructure, gave it beauty. That it could explain much social injustice and apparent cruelty as an inevitable incident in the scheme of progress, and the attempt to change such things as likely on the whole to do more harm than good, commended it to authority. That it afforded a measure of justification to the free activities of the individual capitalist, attracted to it the support of the dominant social force behind authority (Keynes, 1936: p. 32-3).

To conclude, this section presented the determinants of the collective action and inaction of interest groups. The main intuition is that monetary choices can be influenced, and not all groups have equal opportunities to influence these decisions. The good degree of coordination of small interest groups, however, is not enough to influence decisions at the policy-making level, nor to coordinate the expectations of different groups within society.

This is precisely where the importance of our analysis of convention economics and the theoretical legitimacy of monetary dominance lies. Scientific knowledge in economics is crucial to confer legitimacy to vested financial interests for serving the ‘public interest’. It challenges the assumption of central bank impartiality while shedding light on the exposure of academic research to the risk of ‘capture’. As things stand, the most logical diagnosis here is that monetary dominance’s meaning is determined by the meaning of its promoters. Now that we provided a complementary explanation for the establishment of monetary dominance, we draw attention to some of the negative externalities produced within this regime.

1.4. Negative externalities of monetary dominance

There are different forms of perverse interaction in fiscal and monetary interactions. So far, most of the literature placed an important emphasis on the situation of fiscal dominance. As discussed in the previous section, the risk of a self-serving government forcing the monetary authority to monetize public debt became the main argument for the establishment of a regime of monetary dominance. The analysis of this regime, with knowledge of the collective action and convention economics, provided intuitive understanding about the negative externalities generated by a dominant central bank focusing on one primary macroeconomic objective.

We introduce some of these externalities in this closing section of chapter one. In the light of what has been argued so far, monetary and fiscal policies are equally exposed to the risk of external interference. While the externalities produced by a fiscally dominant regime are well-known, those produced by a monetary regime lacks further explanation. Hence, we shed light on some of the negative outcomes of a biased (i.e. partial) monetary policy. We can think of monetary partiality a *contrario sensu*. An impartial monetary policy is the one that, close coordinated with other public policies, neither independent nor subordinated, does not deviate from its main objectives of propelling the economy to a level closer to full employment while assuring price stability and a fair distribution of national income. It stems from these objectives a better capacity to avoid demand crisis macroeconomic instability and the ‘stabilization of the unstable’ financial sector (Minsky, 1986).

Moreover, the impartial monetary policy is the one that rejects universal and ahistorical solutions to cope with price instability. Instead, it is a policy that is adapted to the evolution of the economic structure and specificities of each country. Monetary choices do affect real variables and, therefore, generate short and long-run effects on the level of employment, as well as on the distribution of income and wealth. The narrow focus on inflation targeting, which may reflect the preferences of a specific group view rather than the general interest, have deviated academic research and the general perception from the limits of monetary dominance. Since inflation provides such an effective mean for a single centre of institutional power (i.e., the central bank) to concentrate resources and impose its dominance, inflation may also be resorted to by two centres of institutional power, neither strong enough to dominate the other outright and lacking sufficient common purpose for horizontal cooperation⁴⁸.

⁴⁸ Streeck and Schmitter (1985) acknowledges that reconciling conflicting objectives within the government is always and everywhere accompanied by a theoretical clash among rival schools of economic thought. This clash not merely covers differences on methods and prescriptions, but also on diagnosis and basic assumptions. If the social consequences of the adoption of a specific

Hirsch and Goldthorpe (1978) highlight this issue, arguing that there is one fundamental rationale behind the theoretical support for the primacy of inflation targeting in policymaking. It was to develop an institutional arrangement whereby responsibility for liquidity management would be removed from the reach of politicians and made an exclusively ‘technical’ question in the hands of ‘impartial’ central banks. That explains, to some extent, the political roots of the rigid separation between the fiscal and monetary authorities argued by Sargent and Wallace (1981). If we think that the two rival centres of power are the Fiscal and Monetary authorities, we can understand why monetary dominance had far-reaching implications for economic policy.

While excessive inflation certainly has negative effects on the economy as a whole, at least in relative terms, some groups benefit from inflation while losses are expected to come to the other (Streeck and Schmitter, 1985). Large and unexpected falls in inflation rate have a highly negative impact on banks’ balance sheets. If inflation falls to zero, the real value of financial contracts will increase, regardless of whether expectations have adjusted to reality or not. In countries with a long history of persistent high or hyperinflation, an inflation rate substantially below that anticipated by the agents is similar to the case of debt deflation demonstrated by Irving Fischer⁴⁹. Conversely, when inflation accelerates above expectations, the losers are the creditors and not the debtors. Since higher than expected inflation transfers wealth from creditors to debtors, should this situation become persistent creditors may increase their liquidity preference. Both situations encompass the trade-off faced by policymakers around the optimal level of inflation. Current understanding of this trade-off reflects a reaction against Keynesian over-optimism on the role of fiscal policy, which fostered the extreme formulation of a convention that subordinates macroeconomic goals to the primary objective of inflation targeting.

With this in mind, we identified three negative externalities of monetary dominance. These will be subject of further analysis in the next chapters while discussing the practical aspects of monetary dominance and the financialisation of monetary policy.

1) Monetary dominance potentially undermines the trajectory of public indebtedness.

Sovereign debt sustainability stems, *inter alia*, from the proper functioning of fiscal and monetary interactions. Variations in this institutional arrangement are not exempted from impacting the amount and profile of public debt. The narrow focus on price stability in isolation (i.e., by independent central banks) may deepen fiscal fragility in countries where

line of economic reasoning become more extreme, it might be expected for the opposing schools to substantially increase in rivalry. With regard to fiscal and monetary interactions, specifically, this struggle is summarised in one variable: Inflation.

⁴⁹ Fisher (1933) argues that a decrease in the general price level increases the real value of debts. An unexpected reduction in a high rate of inflation has the same effect. In this case, there is an increase in the real value of all financial contracts that stipulate the nominal interest rate based on a much higher expected rate of inflation.

an important share of public debt is indexed to a central bank interest rate. Any rises in interest rates also increase issuance and rollover costs of financing public deficit, to the prejudice of the fiscal balance. Consequently, it compresses the policy space of the government and transfers the weight of this re-balancing to the taxpayers via higher taxation, expensive credit costs and budgetary cuts on social spending.

The general intuition, therefore, is that under the regime of monetary dominance, a price shock is to be followed by a restrictive monetary policy. In so doing, however, public debt interest expenses are also to increase, requiring even deeper fiscal adjustments so to stabilise the debt to GDP ratio. As a consequence, it ultimately attenuates the original shock. Otherwise stated, inflation targeting alone may incur in higher short-term debt expenses and fiscal fragility to increase. Alleviation to these fiscal pressures comes in the form of policy measures to assure primary fiscal surpluses and/or new bond issuance. As for the former, the negative effects on income and output caused by the adverse shock are magnified; while the latter leads to the problem of the intergenerational burden of the debt. Overall, monetary dominance makes it difficult, if not impossible, for the government to carry on counter-cyclical fiscal measures.

- 2) Monetary dominance creates incentives for (double) moral hazard.** Solvent commercial banks, when facing a liquidity shock, can turn to the interbank market. This market, in which liquidity is reallocated among the commercial banks on a daily basis, provides insurance against idiosyncratic shocks. In the case of disturbances that affect all banks (not idiosyncratic), the mainstream theory states that the Central Bank ought to intervene, through open market operations (e.g. via repurchase agreements⁵⁰), providing liquidity to the system as a whole. This would maintain the money supply at an adequate level while abstaining from providing direct support to the banks in trouble. In theory, solvent but illiquid banks could turn to the interbank market, while the insolvent institutions would be unable to obtain liquidity and, therefore, could disappear. In practice, the Central Bank's role of lender of last resort means that commercial banks have incentives to take excessive risks, as they anticipate the possibility of financial rescue in adverse situations. That is, these interventions generate a moral hazard problem.

⁵⁰ The insights provided by Cúrdia and Woodford, (2010) and Gertler and Kiyotaki (2010) about the temporality of central bank liquidity provision, to be deployed in periods of financial stress, are of great practical importance for the analysis of the use of repurchase agreements for monetary purposes in Brazil (Chapter 2).

Moral hazard in the interbank market, under the regime of monetary dominance, we argue, refers to a sort of chain reaction: Commercial banks have incentives to engage in risky operations as they know their bargain strength vis-à-vis the central bank. It stems from their privileged position to demand the provision of additional liquidity, i.e., they are *too big to fail*. The monetary authority, in turn, relies on the government's power to collect taxes to either i) providing this extra liquidity for the commercial banks in times of financial distress; or ii) during expansion, to coordinate the expectations of bankers around the fact that the fiscal authority is under a regime of monetary dominance (i.e. *forced* to accommodate monetary choices). Therefore, in this case, specifically, we observe the incidence of a *double* moral hazard behaviour (commercial banks → central bank → government).

Goodhart (1995) acknowledges that the significant amounts involved in some banking crises revealed that, on many occasions, central banks have only been the technical agent in rescue operations, but with resources provided by the government; Ultimately, it is the fiscal authority that serves as the lender of last resort through its power to collect taxes. This government rescue has increased since the 1980s, given the increasing magnitude of the banking crises. His analysis of 104 cases of banks facing liquidity problems in 24 countries in the period 1970-1992 shows that, in most of the cases, the banks were not supported by the central bank alone, but with the help of other public institutions. This extensive study provides important evidence that the moral hazard created by a dominant central bank is ultimately supported by the government's power to impose taxes. Under the regime of monetary dominance, therefore, commercial banks are reassured that they can rely on this *hedge* provided by the taxpayers for engaging in risky operations.

- 3) Monetary dominance stimulates the financialisation of the State.** We can think of this in terms of Stigler's (1971) regulatory capture. With the central bank 'captured' by the bargaining strength of financial interest groups, there could be a bias in monetary choices. Hence, the stance of monetary policy would embed the financial logic instead of the principles of social justice. We term this change in the nature of central banking as the *financialisation of monetary policy*. In discussing this hypothesis, we also emphasise the interplay of political sociology, political sciences and political economy when analysing the fiscal effects of monetary dominance. The theory of financialisation provides a plausible explanation for exploring the adoption of financial logic in the conduct of monetary policy and sheds light on the *modus operandi* of this form of 'capture' of the central bank by financial interest groups.

Ianoni (2017) identifies, in Brazil, three institutions functioning as a hub between financial interests and the central bank: The Institutional Relations agencies at the Central Bank of Brazil and the National Treasury, and the Brazil Excellence in Securities Transactions agency (BEST Brazil). These institutions, he argues, allocate state political resources to financial groups through i) privileged access to information regarding the financial sector; and ii) the formation of expectations about the course of interest and inflation. His study suggests that close connections between financial interest groups and the high-level officials of these agencies facilitate the demand for policy favours, the consolidation of the convention of monetary dominance, and the lobbying for maintaining the ‘credibility’ of inflation targeting preserved despite the social demands for distributive policies (i.e., that fiscal policy accommodates *de facto* monetary objectives).

This close connection stands thus as one of the defining features of the financialisation of monetary policy. This is because these financial institutions have the power to bias their expectations about the future state of the economy, with the purpose of benefiting from the interest rate that would best maximize its returns. As a result, they are in a privileged position for making use of their bargain strength for pressuring the central bank to define an inflation target that corresponds, primarily, to their expectations. As stated by Oreiro and Passos (2015, p. 163): “[Large institutions] in the Brazilian financial system can influence the decision of the Central Bank regarding the setting of interest rates. If banks reach an agreement among themselves, they can ‘force’ an increase in interest rates by ‘reviewing’ their inflation expectations upwards”.

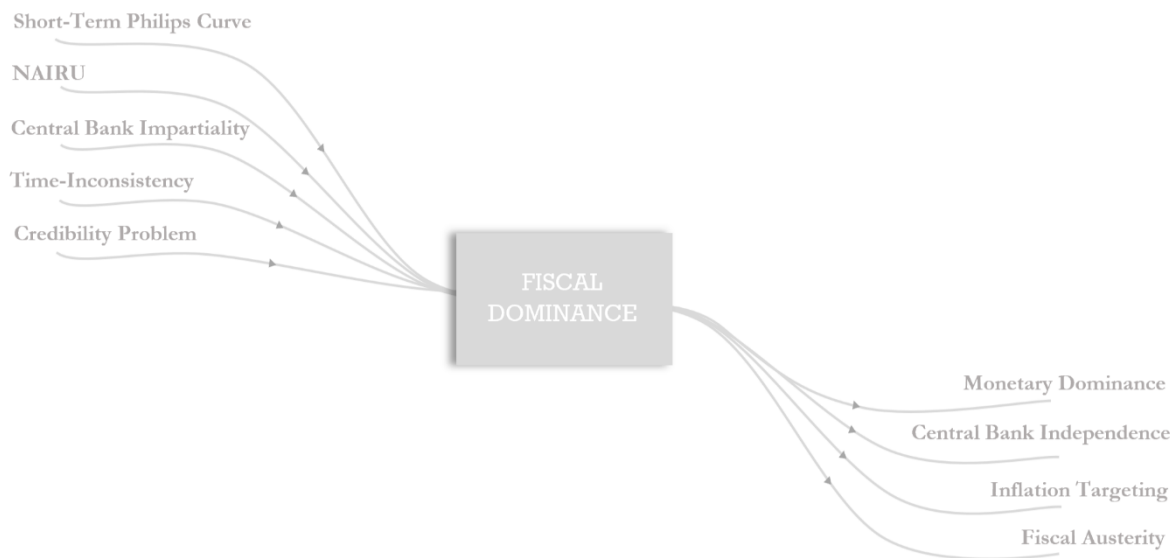
It is worth noting that these three externalities are not to be understood in isolation. Instead, they form, together, a regulatory slack, i.e., spaces where the central bank is more vulnerable to the action of financial interest groups. This is because the presence of this slacks may increase the incentives for the monetary authority to discretionarily choose the set of instruments for converging inflation to the target. As we argued in this chapter, price stability does depend on the optimal interaction between the central bank and the government. However, we questioned why monetary policy should dominate the fiscal policy to achieve it? In the next chapters, we show some of the practical aspects of monetary dominance before suggesting an alternative path that reconsiders both of them to improve the stability of each.

Conclusion

This chapter provided a critical explanation of Sargent and Wallace's (1981) theory of Fiscal Dominance. It was not our purpose here to discuss the empirical validity of their contribution, neither to refute their conclusion about the harmful effects of fiscal dominance over the general price level. Different from other scholars working on the topic, we focused on the power of the idea of fiscal dominance to shape theoretical and practical aspects of economic policy. This idea should be understood within the context of the historical discussion between Monetarists and Keynesians about the role of fiscal and monetary policies. Fiscal dominance, therefore, symbolises the triumph of the former over the latter in the 1970s. Different monetarist-inspired agendas of research on the role of monetary policy (the short-term Philips curve, Nairu, Central bank impartiality, Time-inconsistency, credibility problem, among others) have found in the idea of Fiscal dominance, the possibility for crossing the boundaries of academia and turn into policy recommendations of practical applicability. De Jong (2000: p. 84-5) provides a valuable account of this subtle influence of monetarism in economics:

What has happened to monetarism at the end of the 20th century? Monetarism achieved its moment of apogee with both intellectual and policy triumph in the late 1970s. [...] But today monetarism seems reduced from a broad current to a few eddies. What has happened to the ideas and the current of thought that developed out of the original insights of Irving Fisher and his peers? The short answer is that much of this current of thought is still there, but its insights pass under another name. The New Keynesian research program had much of their development inside the 20th century monetarist tradition, and all are associated with the name of Milton Friedman. [...] We recognise the power of monetary policy as a result of the lines of research that developed from Friedman and Schwartz (1963) and Friedman and Meiselman (1963). Thus a look back at the intellectual battle lines between "Keynesians" and "monetarists" in the 1960s cannot help but be followed by the recognition that perhaps New Keynesian economics is misnamed. We may not all be Keynesians now, but the influence of monetarism on how we all think about macroeconomics today has been deep, pervasive, and subtle. Why then do we today talk much more about the "New Keynesian" economists than about the "New Monetarist" economists? [...] Perhaps the extent to which they are simply part of the air that modern macroeconomists today believe is a good index of their intellectual hegemony.

All of this suggests that fiscal dominance was conceived to be more than a theoretical idea; it was destined to become the corollary of the monetarist counter-revolution by bringing an implicit and powerful message: monetary dominance. The idea of a dominant central bank since then, have not ceased to shape academic discussions about *vertical coordination* as a way for imposing fiscal discipline over the government. On the policy level, this idea has been the cornerstone of the prospects for central bank independence, inflation targeting mandates and the measures of fiscal austerity. Thus, any criticism addressed to these ideas should first take into consideration the intellectual framework that sustains it. The influence of this powerful idea is illustrated in Figure 1.7 below:

Figure 1.7 | The theoretical and practical influence of the idea of Fiscal Dominance

Source: Own elaboration

We have argued here that the process of legitimation of the idea of fiscal dominance cannot be dissociated from the creation of a convention on monetary dominance. And this convention would not have taken form, without the action of interest groups. By way of comparison, we can turn to J.R.R. Tolkien's magnum opus *The Lord of the Rings* to explain how monetary dominance, interest groups and the central bank are likely to interact. We could say that the central bank is the ring, the interest groups are Frodo (or Gollum), while the idea of monetary dominance would be Sauron – a spirit that needs a body to exercise ultimate power. Abstractions made on the benevolent or malevolent profile attributed to each of these fictional characters, the symbiotic relationship between the material and immaterial is a *sine qua non* condition for the exercise of power and domination.

Globally, this chapter was conceived to shed light on the insufficiencies of theoretical reflections bounded by the idea of dominance in general, and monetary dominance in specific. The critical explanation presented in this chapter constitutes the basis of the arguments presented in the next chapters. Without critical thinking on how and why the idea of monetary dominance has been smoothly gaining in prominence since the demise of the Keynesian consensus, broader comprehension of the practical aspects of monetary dominance (chapter 2) and the financialisation of monetary policy (chapter 3) would be compromised.

Repurchase Agreements: The Practical Aspect of Monetary Dominance in Brazil

Introduction

This chapter provides a framework for thinking about the practical aspects of monetary dominance using data from central bank open market operations in Brazil. We address the fundamental question of the conflict of interests in monetary choices and, specifically, in the use of repurchase agreements (repo) for the management of short-term liquidity. This monetary instrument is at the heart of the practical aspects of monetary dominance: Inflation targeting and central bank independence.

The core assumption of inflation targeting is that the primary objective of monetary policy is to maintain inflation at low and stable rates. Leiderman and Svensson (1995) believe that inflation targeting fulfils two macroeconomic functions: i) of a transparency mechanism for the conduct of monetary policy, helping to reduce uncertainties; and ii) it anchors the expectations of economic agents (mainly those operating in the financial market). Some theoretical assumptions stemming from the ‘new macroeconomic consensus’, however, must be observed for these two functions to be satisfied: the neutrality of money, rational expectations, continuous market equilibrium, flexible prices, labour supply determined by real wages and the natural rate of unemployment. Moreover, Batini et al. (2006) highlight two additional institutional conditions required for the adoption of inflation targeting: Central bank independence (the monetary authority must have full institutional autonomy in the choice of its instruments, as well as freedom from political pressures to avoid credibility concerns), and the absence of fiscal dominance (as large fiscal deficits undermines the efficiency of inflation targeting).

However, the mainstream theory that inflation targeting supports long-term growth fails to explain how to mitigate the important fiscal costs associated with it. With most of the attention currently devoted to fiscal mismanagement, the fiscal burden of inflation targeting has less of a chance of being discussed. In Brazil, for example, the epistemic authorities of finance play an important part in this bias. They greatly contribute to creating a general perception that the country’s fiscal

imbalance stems solely from the non-financial expenditures of the public sector. Nevertheless, in the light of what was demonstrated in the previous chapter, we challenge this diagnosis. We argue that the high costs of servicing the Brazilian federal debt have hampered the fiscal balance of the country, as well as the prospects for sustainable economic growth and development. Most importantly, a significant share of this debt stands for repos-related expenditures.

Hence, this chapter provides an illustration that complements the argument developed in chapter one. It was also conceived to contribute to a paradigm shift by seeing differently rather than seeing more. To do so, we analogically compare understandings within the Brazilian context of fiscal and monetary interactions – hoping that they help in this process of perspective change. Sayad (2005), for instance, provide a valuable insight that fulfils this purpose. He suggests a reversal of causality for a better comprehension of the fiscal costs of monetary dominance: “the official rhetoric holds that fiscal authority is to blame for pressuring the central bank. In fact, it is quite the opposite; it is the monetary policy that pressures the fiscal sector” (p. 126). In the same vein, Bresser-Pereira (2007) argues that the main cause of Brazilian fiscal imbalances lies in the primacy of monetary objectives, the discretionary choices of monetary instruments for targeting inflation and the volatility of the Brazilian Central Bank’s short-term interest rate. Overall, this assessment contradicts the view that the causes of fiscal fragility are to be found in the non-financial public sector alone. Magalhães and Costa (2018) go further and defend that the ‘fiscal mismanagement takes it all’ diagnosis disregards nominal interest service expenditures generated from the extensive use of repo operations – a factor that operates against the fiscal balance of Brazil.

Repurchase agreements, fittingly, are collateralized loans with an agreement to repurchase the underlying asset on a future date. Any asset (government or corporate bonds, securities, equity, mortgage loans) are eligible to be ‘repoed out’ upon agreement of both parties. The use of **repos for monetary purposes** – i.e., those carried out by the central bank, backed by public securities and remunerated by the overnight central bank interest rate – incurs in a fiscal burden to the government. This is because the use of repos *forces* the fiscal authority to accommodate the costs of inflation targeting. Perhaps, no other characteristic of fiscal and monetary interactions expresses the practical aspect of monetary dominance as clearly as the repurchase agreements. This issue is all the more important in Brazil, where the use of repos for monetary purposes has grown exponentially after the adoption of the ‘macroeconomic tripod’ (inflation targeting, fiscal surpluses and floating exchange rate). Specifically, in the years following the came into force of the 2000 fiscal responsibility law, and the subsequent interdiction of the central bank to issue its own debt securities in 2002, the use of repos soared from 3.2 per cent of GDP to 18.1 per cent of GDP in 2017.

Different authors have discussed the causes of excess liquidity and the most appropriate instrument for the fine-tuning of monetary policy (Darvas and Pichler, 2018; Mancini et al., 2016; Saxegaard, 2016); Very few, have addressed the conflict of interests involving the central bank use of repos to remove excess liquidity (Gabor, 2016; Gorton and Metrick, 2012); and none, to the best of our knowledge, has brought this issue to the forefront in Brazil. We fill this gap by reversing current analyses of repos for monetary purposes. Instead of discussing the theoretical motivations for central banks to use this instrument, we place our attention on the central bank counterparties in these operations. In so doing, we assume the use of repos for monetary purposes is not a purely technical issue, but a question of political economy. We explore the economic forces benefiting from the extensive use of this instrument, while not rejecting the importance of repos for short-term liquidity management. The concerns raised here does not relate to the instrument itself but from its *use* by those who seek to monetise excess reserves. This sort of monetisation, not different from the one observed under the regime of fiscal dominance, generates high fiscal costs. These, again, are also burdened by the taxpayers.

The remainder of this chapter is divided into four sections. In the **first section**, we offer a critical review of the existing literature on the economic functions of repurchase agreements. It recalls the *modus operandi* of this financial instrument, as well as the advantages and disadvantages of its use. In the **second section**, we analyse the use of repos for monetary purposes in Brazil. We shed light on some issues related to global liquidity before proceeding to a further analysis of the Brazilian legislation about fiscal and monetary interactions. Specifically, we contextualize our study and present the regulatory framework for the use of public securities by the central bank in the country. Section **three** presents some features of the repos for monetary purposes in Brazil and discusses the inflationary effects of its extensive for monetary purposes. Under the spectre of ‘fiscal dominance’, the fiscal authority is seen as the one that contributes the most to the increase of inflationary pressures. Under the regime of monetary dominance, would it not be the central bank itself that plays such a role, through its constant interventions for liquidity provision within the interbank lending market? Finally, **section four** explores the conflict of interests in the use of repos for monetary purposes, under the umbrella of a discussion about the nature of public borrowing in the regime of monetary dominance. We then conclude with some general thoughts about “the financialisation of monetary policy in Brazil” – a concept that is introduced and developed in Chapter 3.

2.1. Literature review on repurchase agreements

A worldwide exponential growth on the use of repurchase agreements (repo) for monetary has been observed in recent years. Even though estimations on the precise size and the motivations to participate in this market are far from being conclusive, the International Capital Market Association (ICMA) estimates a notional amount of 15 trillion euros in outstanding size and turnover about 3 trillion euros per day (ICMA, 2018). Estimations are often constrained by several offsetting impacts as well as to data limitations⁵¹.

Central banks use repos to the fine-tuning of monetary policy. It stands besides minimum reserve requirements and standing facilities as part of the monetary instruments for liquidity management. The role of repos for monetary purposes encompasses the contraction and expansion of commercial banks' holdings of central bank reserves, signal the monetary policy stance and steer short-term (overnight) interest rates. In periods of stress, the monetary authority enhances the use of repos to support financial stability in order to allow banks to monetise liquid assets. The flexibility and transparency offered by the repos make of this monetary instrument a key indicator of central bank commitment to inflation targeting (Mishkin, 2017). It improves the efficiency of short-term liquidity management which, consequently, implies a smooth convergence of interbank interest rates towards the interest rate targeted by the monetary authority. But while literature abounds in references to the benefits of repos, few articles exist in relation to the negative externalities of this financial instrument, with none pertaining exclusively to the driving forces affecting the use of repos for monetary purposes. To the best of our knowledge, such operations have not received so far, the well-deserved attention in the political economy literature, despite its crucial role, yet not always well understood, for the stability of the financial sector.

A good starting point comes from Fleming and Gabaude's (2003) explanation of repo market functioning. Repos are basically secured loans backed by a collateral asset. This contemporary practice of collateral lending is essentially the same observed throughout history. Von Glahn (2016) documents that traders in the 5th Century Ancient China were familiar to the use of different items as collateral for backing a loan. The use of repos in modern finance, though, provides insights about the unchanging nature of collateralised loans across time. The extensive use of repurchase agreements by private financial institutions and central banks to fund their daily operations have

⁵¹ One of the biggest challenges for researchers working on public debt is to obtain data. Information about the creditors of the Brazilian debt is made available by the treasury by large groups, but not by creditor institution. Information about the counterpart institutions engaged in repo operations with the central bank is also classified. The amount of the debt is known, but information on the participation of each creditor in repo operations with the central bank is not publicly available. According to the monetary authority, "The identity of the central bank of Brazil's counterparties and the other data of the Open Market Operations correspond to data covered by the confidentiality provided for in article 1, paragraph 1, item XII, and in article 2, first part, of Complementary Law no. 105, of January 10, 2001".

caught the attention of researchers interested in theorising the economic functions of this instrument.

Goodfriend (2012), for instance, states that repos provide a safeguard to the ‘promise of price stability’. Flandreau and Ugolini (2011) provide a historical account on the use of repos by the monetary authority. As they indicate, the use of this instrument by the Bank of England goes back to the 19th Century. In 1865 the Bank of England had two different ways to provided money to customers. The first one was named ‘discounts’ (corresponding to an outright purchase of acceptances), and the other one, called ‘advances’ (which would correspond to the use of repos as we know in modern times). As they highlight: ‘the Bank took in bills or bundles of bills (“parcels”), but the counterparty was understood to repurchase the security from the Bank at a given date. Advances were secured by the security given in repo.’ (*ibid*: p. 7). In the US, the use of repo as an instrument of monetary policy dates as far back as the 1910s. In 1918 the US Federal Reserve first introduced repos as a tool for liquidity control in the form of banknotes called bankers’ acceptances, and the transactions were known as resale agreements⁵² (Fed, 1918). Subsequently, repo was undertaken in Treasury securities.

The use of repo has spread all over the world, and its importance is undeniable for the conduct of monetary policy worldwide. According to the BIS (1999), the use of repos by the Bank of Canada started in 1953. The Bank of Japan began using this instrument in 1997, followed by the Swiss National Bank in 1998. Repos have been widely used among European central banks, and with the start of economic and monetary union in January 1999, the Euro system adopted repos as a key instrument. The use of repos by the Brazilian central bank started in 1976⁵³.

A repo, as the term is used in the financial markets, refers to a transaction in which two parties simultaneously agree on two operations: a sale of securities for cash followed by a forward repurchase on a prearranged date and price. By convention, whether the operation is called a repo or a reverse repo is determined by viewing the transaction from the dealer’s perspective. If the dealer is borrowing money from a customer and providing securities as collateral, the operation is called a *repo*. If the dealer is borrowing securities (which serve as collateral) and lending money, the operation is called a *reverse repo*. The logic of these operations can be illustrated using the Brazilian central bank as an example. When the monetary authority of Brazil is buying securities (most often

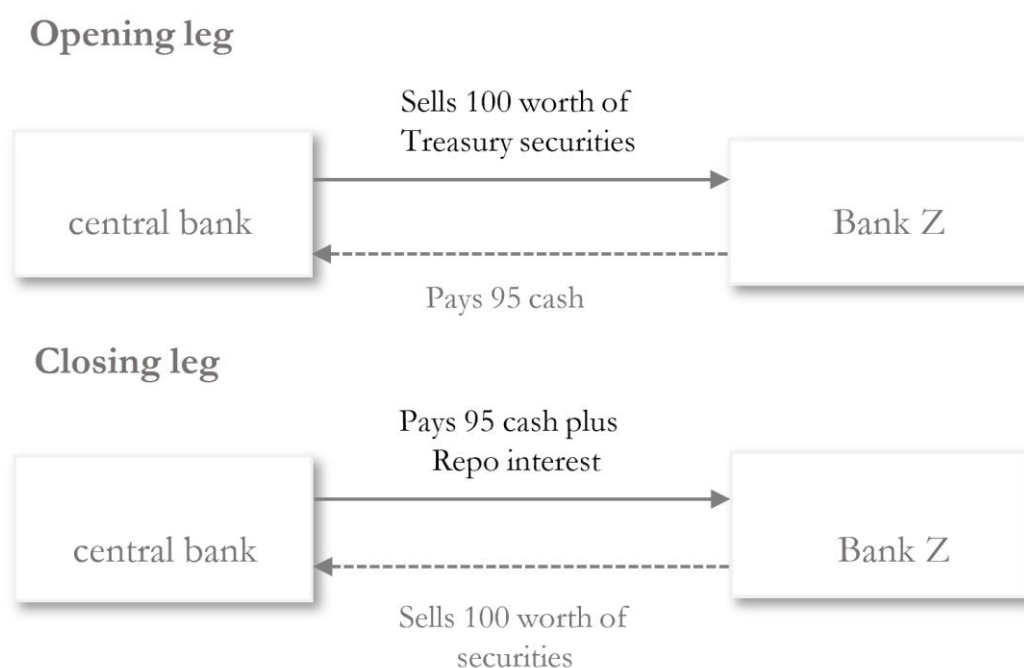
⁵² As stated at the Federal Reserve Bulletin of May 1st, 1918 : ‘During the past month the provision of the war finance corporation act, eliminating the stamp tax from notes secured by Government obligations, became effective, with the result that the practice of Federal Reserve Banks in entering into purchase and resale agreements intended to relieve borrowers of this tax whenever they presented short-term paper secured by Government obligations has been modified. Such paper will henceforward be classified as notes of member banks, secured by Government obligations’ (Fed, 1918 : 632).

⁵³ Brazilian central bank resolution n. 366/1976.

Treasury bonds) from primary dealers, with the commitment of future reselling, the central bank is said to be engaged in a *repo*. The use of repos increases, therefore, the liquidity of the banking system. Conversely, a central bank is said to be engaged in *reverse repo*, when seeing the very same from the buyer's side (i.e., the institution that buys the asset and makes a commitment to resell it at a future date).

The main purpose for central banks to engage in reverse repos is to withdrawal “excess” liquidity. If we think about the Brazilian central bank engaged in reverse repos, there would be selling of securities to primary dealers with the commitment to re-buy them in a future date. It is worth mentioning that the value of the future sale is increased by interest agreed by both parties, being higher than the initial value. For clarification, figure 2.1 depicts the logic of these operations:

Figure 2.1 | Settlement of the starting and closing legs of a repo operation



Source: Own elaboration

As we can see, a reverse repo is often initiated by the party who needs to borrow specific securities and is trying to find a counterparty that wants to improve the optimality of its portfolio. A repo is generally initiated by the party who wishes to borrow funds and is looking for a counterparty with excess cash to invest. Thus, for each repo operation, there is necessarily a reverse repo operation that follows. It is a matter of perspective. The security backed by the repo is the collateral of the transaction, and a real transfer of ownership accompanies the temporary transfer of securities. As

with most collateralisation practices, money lenders apply an over-collateralization called *haircuts*. Haircuts are meant to protect lenders of funds against possible fluctuations in the value of the securities provided as collateral.

Hence, in practice, the repo is an over-the-counter (OTC) contract in which it states:

- The securities used as collateral to back the transaction.
- The haircut (the difference between the market price of the asset held by the cash borrower (e.g., BRL 100) and the amount by which the cash lender is willing to refinance it in a repo operation (e.g., BRL 95). In this case, the haircut applied by the cash lender would be 5 per cent)
- The repo ‘nominal’ amount, which is necessarily lower than or equal to the market price of the securities lent.
- An opening leg, where the securities will be made available against payment of the nominal value.
- A closing leg, where the securities will be returned against payment of the nominal value and interest.
- The interest rate applied to the nominal value during the period.

Fabozzi and Mann (2005) highlight the main benefits of repo operations for cash borrowers (the buyer of securities). Repo is secure and, therefore, a reliable source of refinancing in times of stress. It is thus a tool for transforming bank maturities. This instrument makes it possible, for example, to finance a 30-year bond position with a daily rollover loan. The provision of collateral by the borrower, most often in the form of government negotiable securities with the ownership transfer to the lender during the transaction, gives to repo a status of ‘safe harbour’ for cash lenders (Duffie and Skeel, 2012). It thus limits the credit risk to that corresponding to the underlying assets, thus protecting the lender from the risk of the borrower’s bankruptcy. The ownership transfer during the transaction offers to cash borrowers (security buyers) the possibility to ‘repoing out’ the security and, therefore, the advantage of borrowing cash for specific purposes (such as regulatory, speculation or arbitrage) at very low risks. For, in the unlikely case of counterparty default, the borrower can resell the securities in the market.

Monet and Narajabad (2012) raise the question of preference for engaging in repurchasing agreements instead of the permanent purchasing of the securities. The reasons why a trader prefers to borrow using repo are many, but in general, the securities lent support a settlement obligation or a trading strategy to cover short or long positions. These motivations are further analysed in

Duffie, Gârleanu, and Pedersen (2005) and Vayanos and Weill (2008). Repo operations fulfil different important economic functions that go far beyond a mere form of a subsequent sale and repurchase. Duffie (1996) relates repos to lower frictional costs. According to him, assets differ in transaction costs, and those with low costs and high liquid are in high demand by short-sellers. For McAndrews (2006), the repos have the potential to overcome the financial frictions that would eventually occur by the central bank's provision of intraday liquidity. Tomura (2016) highlights the role of repos in mitigating bilateral bargaining in the bond market. Parlatore (2019) focuses on the use of repo by borrowers optimizing financing choices. She observes three main characteristics in the choice of borrowers to collateralize financial assets rather than proceeding to the definitive selling. When the return on their investment is not observable to the lenders, investment opportunities are persistent, and the asset is not perfectly liquid. Dang, Gorton and Holmstöm (2013) echoes earlier calls from DeMarzo and Duffie (1999) and Philippon and Skreta (2012) and emphasize the role of repos in reducing adverse selection between uninformed buyers and informed sellers.

The report prepared by a study group established by the Committee on the Global Financial System of the BIS (2017) concludes about the existence of five economic functions motivating the use of repurchase agreements.

First, repo/reverse repo transactions provide a low-risk option for cash investments. Such a statement provides a first explanation for the heavy reliance of money market funds and other institutional investors on repos. Given that reverse repos are a very flexible liquid investment that can be structured as one-day transactions (overnight repo) and easily rolled over, the low risk provided by reverse repos using high-quality collateral makes them particularly suited for this role.

Second, the transformation of collateral provides a means for market participants to obtain specific securities or cash for other transactions. By improving investors' ability to settle trades and meet margin requirements, repos support the smooth functioning of derivatives markets and contribute to financial system resilience.

Third, repo operations enhance cash market liquidity and efficiency. Dealers, Hedge Funds and other leveraged institutions use repos to exploit price mismatches of similar financial products on different markets. Such arbitrage makes repos of particular importance for Hedge funds and other leveraged institutions using this instrument to fund strategies designed to benefit from market dislocations and mispricing of risk, as well as other forms of speculation. In doing so, they contribute to more efficient capital allocation in primary markets and, therefore, to reduce market inefficiencies that would not exist if all markets were perfectly efficient. Repos are also essential for

dealers to support their market-making activities and fund trading inventories. For liquidity in secondary markets is enhanced by the fundamental intermediary role played by the market-makers in reducing short-term mismatches between the supply of and demand for securities. Consequently, the cost of issuance in primary markets is expected to be lower, given the reduced liquidity premia in the secondary markets.

Fourth, the use of repo contributes to risk hedging. Pension funds managers see on repo a primary instrument that facilitates the asset and liability management of their long-term investment strategies. Such investors can lend government bonds against cash and use the proceeds to reinvest in bonds of different duration.

Fifth, the use of repos enables the monetisation of liquid assets. In periods of market stress and great uncertainty, a well-functioning repo market is crucial to financial stability by offering a relatively resilient instrument to raising cash without forcing institutions to engage in fire sales, bank runs or contagion. In periods of financial stability, the use of repo to cover shortfalls in cash flows is a common practice among banks and other financial institutions. Hence, the flexibility of repo operations gives the banks the possibility to finance securities held on their balance sheets (for trading purposes or as market-making inventory) or financing repo loans to clients like hedge funds. Table 2.1 below summarises these five economic functions and the main users of repos:

Table 2.1 | Economic functions and users of repo

Economic functions of repo	Users of repo								
	Banks	Hedge Funds	Money Market Funds	Insurerers, Pension Funds	Long-only Asset managers	Corporates	Public agencies	Central Banks	CCPs
EF1. Low-risk option for cash investment	✱		✱	✱	✱	✱	✱	✱	✱
EF2. Transformation of collateral	✱	✱		✱				✱	
EF3. Supporting cash market efficiency and liquidity	✱	✱		✱				✱	
EF4. Facilitating hedging of risk	✱	✱		✱				✱	
EF5. Enabling monetisation of liquid assets	✱							✱	✱

Source: Repo market functioning, BIS (2017: p.7)

2.2. The use of Repurchase Agreements for monetary purposes in Brazil

Repos are a very precise instrument for liquidity management, avoiding that interest rates fall below the minimum level established by the central bank (symptomatic of liquidity surplus) or that money becomes too expensive, even compromising the cost of public debt. Repo operations, as a monetary policy instrument of the central bank of Brazil, increased exponentially over the period between 2006 and 2016 accounting from 3.2 to 18.1 per cent of GDP. This period comprises two critical moments for the conduct of fiscal and monetary policies in the country: The 2000s commodity boom and the 2014 political and economic crisis. While the booming phase observed at the beginning of the period was characterized by the strategy of accumulation of foreign exchange reserves, the adoption of fiscal austerity measures and growth of public indebtedness marked the crisis phase. Thus, the choice for this period stems from the inefficiencies observed in fiscal and monetary interactions during the period of expansion (growth) and contraction (recession) of Brazil's 2006-2016 economic cycle. These inefficiencies, we argue here, are related to distortions in the use of repos for monetary purposes. This distorted use of the main instrument for short-term liquidity management is not without consequences for the overall macroeconomic stability and the fiscal balance of the country.

2.2.1 International Context: Expansion of global liquidity

Our analysis of the Brazilian central bank use of repos begins with some considerations on the expansion of global liquidity that followed the 2000s commodities boom. During this period, central banks in some emerging economies engaged in massive balance sheet policies. At the core of these policies, the extensive use of government securities for monetary purposes increased the complexity of the central bank relationship with the government (Goodhart, 2017; Garcia-Cicco and Kawamura, 2014). According to Borio and Disyatat (2010), the shift from 'interest rate policies' to 'balance sheet policies'⁵⁴ (attenuated by the 2007 global financial crisis) has transformed the nature of central banking, in particular, and the fiscal and monetary interactions, in general. The distinguishing feature of the latter is the massive impact on asset prices – public and private.

The quantitative easing (QE) implemented by the Bank of Japan (BoJ), Bank of England (BoE), the U.S. Federal Reserve Bank (Fed) and the European central bank (ECB) have all consisted in programs of extensive purchases of government bonds or private equities with simultaneous

⁵⁴ The authors distinguish four broad categories of balance sheet policy: exchange rate policy; quasi-debt management policy; credit policy and bank reserves policy.

creation of bank reserves on their liabilities side. The strong engagement in actively credit policies to support the recovery of the economy has increased the volatility of the balance sheets of the central banks and its exposure to important financial losses. This is due to the higher share of liabilities subject to market accounting in the balance sheets of central banks, in comparison to the period before the adoption of unconventional measures.

Asset volatility was not a concern of primary importance for the balance sheets of a ‘classical’ central bank. Prior to the commodities boom and the financial crisis, the common understanding within the central banking community was that asset variations had no major relevance for the operation of central banks (Bibow, 2018). He defines a ‘classic’ central bank in terms of its functions of i) providing the means of payment (liabilities with no cost, which depreciates with inflation), ii) liquidity provision to banks at punitive (and therefore profitable) rates and iii) liquidity management (with low-risk securities, low market value fluctuation, and interest-bearing). After the crisis, the composition of the central bank portfolio shifted from large shares of government securities to increasing types of (more volatile) bonds and equities.

In contrast to the main reasons that prompted balance sheet policies in the advanced economies, the increasing size and composition of central banks’ balance sheets in emerging countries followed the strategy of massive accumulation of foreign currency reserves (Fatum and Yetman, 2018). The main concern for central bankers in emerging economies was to offset exchange risks and the exposure to volatility in commodities prices⁵⁵. Filardo and Yetman (2012) draw attention to the subversive implications of this expansion among emerging economies. These economies are prone to experience higher long-term inflationary pressures (in comparison to advanced economies) because of higher price distortions in equities and bonds that follow their unconventional measures. Their argument grounds fundamental differences in the balance sheet policies in advanced and emerging economies. In the latter, central banks have purchased domestic assets to ease monetary conditions. The increase in central bank assets has been accompanied – to some extent – by a proportional increase in central bank liabilities, mostly as bank reserves. On the other hand, the strategy of reserve accumulation adopted by central banks in emerging economies was implemented through the expansion of monetary liabilities (e.g., increasing bank reserves) and non-monetary liabilities (e.g. issuance of central bank securities or through repo operations).

⁵⁵ Canales-Kriljenko et. al. (2010) provide a description on the use of unconventional monetary policy instruments in Latin America. For example, while Colombia and Peru lowered reserve requirements in their banking systems, the central bank of Chile relaxed the collateral requirements for repurchase agreements (repo) transactions. Filardo and Yetman (2012) shows that the size of central bank balance sheets in emerging Asia has reached historically high levels. For the nine Asian emerging economies the combined size of the balance sheets increased from USD 1.1 trillion in 2001 to 6.4 trillion in 2011. Although China has greatly contributed to this expansion, the upward trajectory has been widespread across the region.

Stella (2009) shows the drastic change that the Fed's balance sheet went through in the short period comprised between 2006 (before the crisis) and 2008 (during the crisis). In 2006, 90 per cent of the Fed's liabilities were composed of currency in circulation. At the same time, 90 per cent of the Fed's assets consisted of US Treasury bonds (non-volatile assets). The role played by the Fed in financial intermediation was minimal, mainly influencing indirectly interbank market interest rates through its open market operations. Foreign currency assets, as Furfine (2002) highlights, were neither so significant compared to what has been observed in the post-crisis. In 2008 the situation was already very different. The Fed had a profile very similar to those of investment banks, with 26 per cent of its assets denominated in foreign currency (then subject to exchange rate volatility).

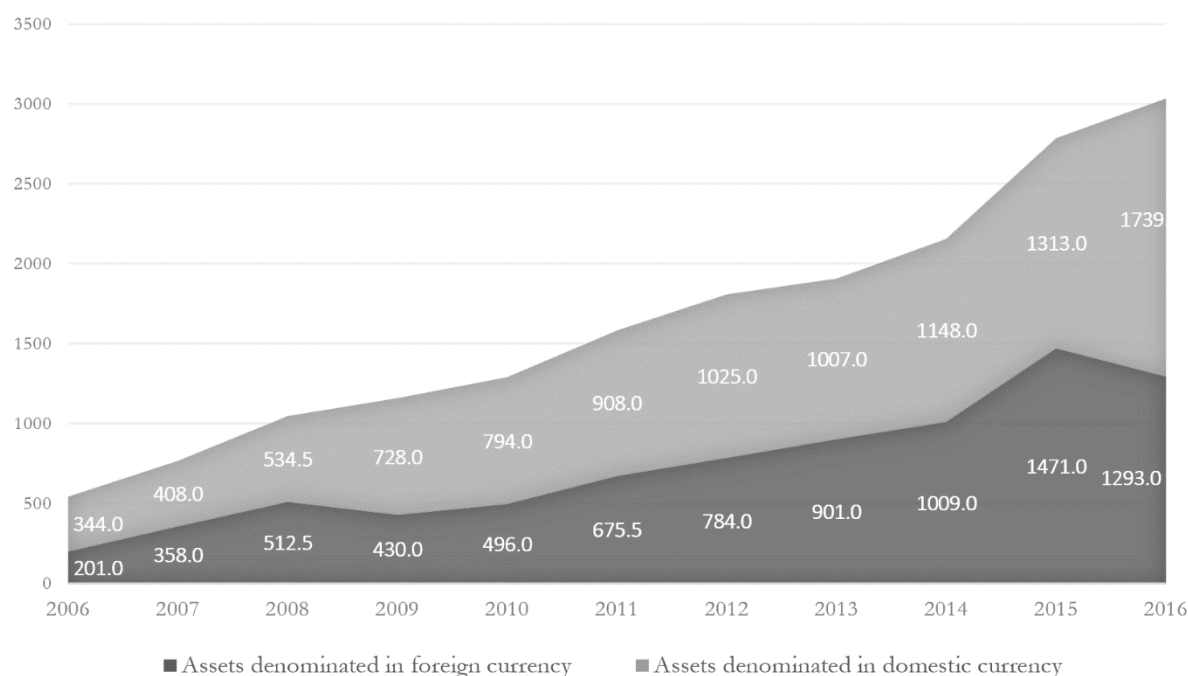
The share of government bonds in the Fed assets-side fell drastically from 90 per cent to 22 per cent and loans granted to companies, banks, and foreign governments fell sharply. The size of the Fed's balance sheet has expanded 156 per cent in two years, indicating an active stance in private assets purchases and liquidity provision. Ten years after the global financial crisis, the balance sheet of the Fed shows a very different aspect. Much of the lending to private companies have already been paid off, and there has been a substantial decrease in the amount of foreign currency assets. Although the value of assets and liabilities continued to grow, having doubled compared to 2008, there was a gradual process of reducing the influence of asset volatilities on the Fed's balance sheet.

The 2000s commodity boom, as previously mentioned, altered the size and composition of the balance sheets of central banks in emerging economies. Between 2004 (beginning of the commodities cycle) and 2014 (end of the cycle), there was a major increase in net foreign reserves in commodities-exporting economies. Of particular importance for this chapter, is to note the massive expansion of official foreign exchange reserves accumulated in Brazil. Figure 2.2 depicts this change in the structure of the balance sheet of the central bank of Brazil. In 2006 (two years after the beginning of the commodities cycle), the assets denominated in foreign currency amounted for 143 BRL Billion, whereas in 2016 (two years after the end of the cycle) these assets reached 446 BRL Billion.

During the same period, foreign assets held by the Brazilian central bank accounted for 33 per cent of the asset-side, while net foreign currency assets (assets net of liabilities) was equivalent to 14 per cent of the total balance sheet in 2006. In 2016, with foreign currency liabilities closer to zero, net foreign assets amounted to almost half of Brazilian central bank net assets (46 per cent). This increased share of foreign assets in the central bank balance sheet raises concerns about the high exposure to exchange fluctuations. In the period comprised between 2006 and 2016, we observe that the monetary authority of Brazil expanded its balance sheet in 699 per cent. Different from

the strategy adopted by the Fed, the balance sheet of the central bank remained highly exposed to asset volatility in the ten years that followed the crisis.

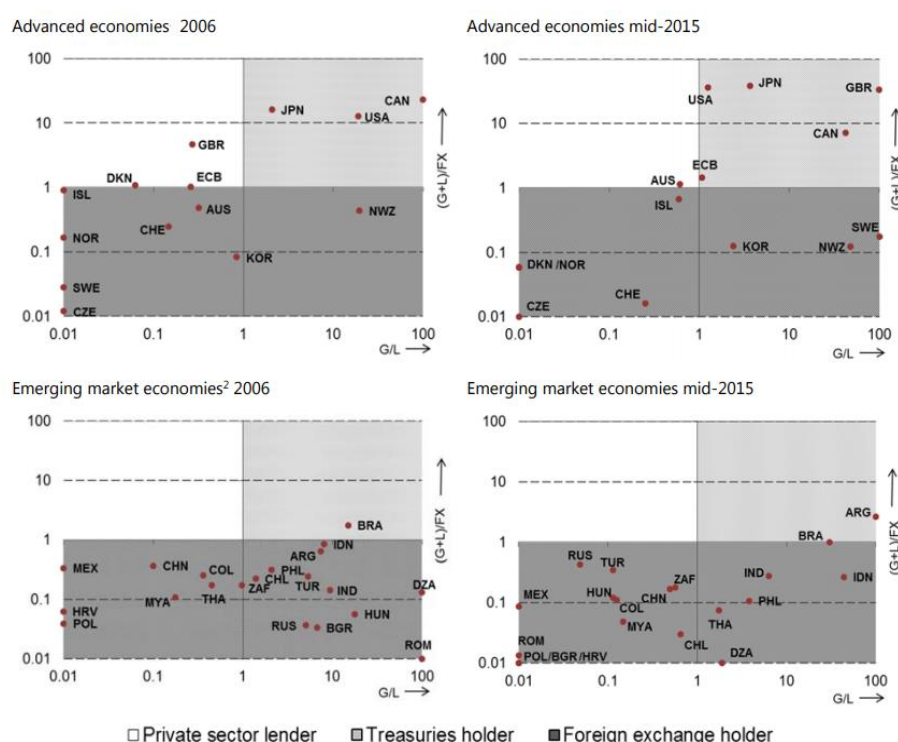
Figure 2.2 | Balance sheet of the central bank of Brazil (asset-side in BRL Billion)



Source: Own elaboration, data from the Central Bank of Brazil (2018)

The QE adopted by the Fed, the BoJ and the ECB was intended to prevent deflation. For deflation could generate self-fulfilling prophecies and, in so doing, it could lead to a deterioration in the financial situation of private and institutional borrowers. The ‘Brazilian QE’, we argue here, further increased public and private indebtedness, sponsored by the substantial expansion of the consolidated public sector (National Treasury and the central bank of Brazil).

Otherwise stated, the QE implemented by the central banks in advanced economies was imperfectly adapted to the Brazilian reality. This argument is consistent with the results presented by Pattipeilohy (2016) in a study carried out by the BIS to analyse the evolution of the balance sheets of several central banks. The author concludes that during the period comprised between 2006 and 2015, the Brazilian central bank’s balance sheet is much more similar to those of the central banks in advanced economies, with a clear contrast with central banks of other similar commodity-dependent Emerging Economies (Figure 2.3).

Figure 2.3 | Composition of central bank assets in advanced and emerging economies (2006 and 2015)

Note: Logarithmic scales. Horizontal axis refers to ratio domestic public sector debt to domestic private sector debt. Vertical axis refers to ratio domestic debt to foreign exchange reserves. Values smaller than 0.01 and larger than 100 have been set at 0.01 and 100 respectively.

¹ AUS = Australia; CAN = Canada; CHE = Switzerland; CZE = Czech Republic; DNK = Denmark; ECB = euro area; GBR = United Kingdom; ISL = Iceland; JPN = Japan; KOR = Korea; NOR = Norway; NZW = New Zealand; SWE = Sweden; USA = United States. ² ARG = Argentina; BGR = Bulgaria; BRA = Brazil; CHL = Chile; CHN = China; COL = Colombia; DZA = Algeria; HRV = Croatia; HUN = Hungary; IDN = Indonesia; IND = India; MEX = Mexico; MYS = Malaysia; PHL = Philippines; POL = Poland; ROM = Romania; RUS = Russia; THA = Thailand; TUR = Turkey; ZAF = South Africa.

Source: BIS Working Papers N. 559 (2016: p.19)

Hence, the Quantitative Easing implemented in Brazil can be separated into three different phases:

- **Phase 1:** Expansion of the Brazilian central bank's balance sheet from 2004 to 2012. During this period, the use of repo operations skyrocketed to sterilise the effect of foreign exchange intervention on the money supply.
- **Phase 2:** With the slowdown of the commodities boom in 2012, the strategy of foreign exchange reserves accumulation adopted by the Brazilian government also slowed. State-owned companies and public banks had to assume the role of promoting leverage, which culminated in the domestic Brazilian credit crisis of 2015.
- **Phase 3:** The Brazilian central bank engages in the purchase of public debt securities to prevent further contraction in domestic credit.

For the purposes of this study, we focus on phases 1 and 3, which has direct implications for the extensive use of repo operations for the conduct of the monetary policy. Grey and Pongsaparn (2015) consider the relationship between open market instruments and the balance sheet structure of central banks - including foreign exchange reserves - in emerging economies. The central banks

within these countries have historically operated with an excess of reserves. Their respective balance sheets were mostly composed of foreign exchange reserves, loans to the government and, in some cases, oriented to solely perform the role of lender of last resort to fragile banks, either by political determination or by lack of choice.

In so doing, the central bank in many of these countries generated liquidity surplus in the interbank lending market that exceeded the daily demand of these banks. This surplus can depress short-term interest rates without central bank sterilisation and, therefore, create incongruencies between the market interest rates and the monetary policy goal. The authors highlight that one of these incongruencies stems from misalignments between the strategy of accumulating international reserves and the central bank instrument to dry liquidity excess. Out of the different instruments out at the disposal of the monetary authority, we focus on the use of repurchase agreements.

2.2.2 On the legislation about fiscal and monetary interactions in Brazil

There were four major movements in the Brazilian legislation with respect to the relationship between the fiscal and monetary authorities. First, in 1987, the Article 8 of Decree-Law 2.376 stated that “the results obtained by the central bank of Brazil [...] will be transferred to the National Treasury, after offsetting any losses from previous years”. The law at the time instituted a mechanism for transferring central bank positive results to the fiscal authority. In the case the central bank showed negative results, these were to be offset by future central bank results, i.e., there were no transfer mechanisms from the fiscal authority to the central bank in the case of negative results.

The second movement followed the Provisional Measure 1.789, of 1998. According to this measure, any negative central bank result was to be covered by the fiscal authority. It shifted the burden of financing central bank operations to the fiscal authority and established the mechanism of ‘symmetric covering’ (deficits were to be covered by surplus, no matter the institution). Article 3 of this provisional measure gives a better understanding of this point:

The result calculated in the annual balance sheet of the central bank of Brazil after computing any constitution or reversal of reserves will be considered:

I. if positive, obligation of the central bank of Brazil towards the Federal Government, and shall be subject to payment until the tenth business day after the approval of the balance sheet by the National Monetary Council.

II. If negative, an obligation of the Federal Government vis-à-vis the central bank of Brazil, and shall be subject to payment up to the tenth business day of the fiscal year after the approval of the balance sheet by the National Monetary Council.

Besides, paragraph 1 of the same article establishes that the positive results of the central bank would, after the transfer, be used to repay the public debt of the fiscal authority, with priority given to that held by the central bank.

The third movement came with the publication of the Fiscal Responsibility Law - Complementary Law 101 of 2000, which was edited under articles 163 to 169 of the 1988 Constitution of the Republic. It is noteworthy that this law was the first supplementary law issued after Law 4.595/1964, which dealt with the issue of 'relations between the fiscal and monetary authorities' (it should be noted that the two movements previously mentioned were regulated by decree-law and provisional measure, respectively). Article 1, paragraph 2, of the referred complementary law, encompasses the relationship between the central bank and the national treasury. It regulates the system for determining the results of the central bank and the national treasury, their transfer and coverage, and consequently, the use of government bonds for the conduct of monetary policy. Article 7 of the aforementioned supplementary law brought new conditions for fiscal and monetary interactions:

Art. 7 - The positive result of the central bank of Brazil, calculated after the constitution of reserves, constitutes revenue for the National Treasury, and shall be transferred by the tenth business day after the approval of the mid-year balance sheets.

§ 1 - The negative result shall constitute an obligation of the Treasury to the central bank of Brazil and shall be recorded in specific budget allocation.

Thus, article 7 of the Fiscal Responsibility Law guarantees that the positive result of the Brazilian monetary authority constitutes revenue for the fiscal authority and will be used exclusively for the payment of the federal public securities debt and that the debt existing with the central bank should be amortized, as a priority. It established a clear rule for the treatment of both the positive and negative results of the central bank, aiming at assuring the stability of its balance sheet. This system for calculating and transferring the central bank's results remained unchanged until 2008 when the Provisional Measure 11.803 of 2008 was enacted. At the origin of this change is the policy of accumulation of foreign exchange reserves initiated in 2001 by the monetary authority, as stated by the explanatory memorandum 435 of 2008:

When acquiring foreign currency, the central bank of Brazil needs to sell securities in its portfolio in order to sterilize the increased liquidity resulting from interventions in the exchange market [...] with the accumulation of reserves, a structural imbalance occurs in the accounts of the monetary authority, whose liabilities basically consist of obligations in national currency with residents in the country.

Due to this change in the nature of the central bank, with the substantial increase in its balance sheet, the explanatory memorandum proposed, then, the adoption:

[...] a mechanism to reduce the volatility of the result of the central bank of Brazil, through the transfer, to the Federal Government, of the financial result of operations carried out by the central bank of Brazil, since January 2, 2008, with exchange reserves and, in the domestic market, with exchange derivatives.

This mechanism came to be known as ‘exchange equalization’, and was thus institutionalised by the Provisional Measure 435, of 2008, which was later converted into Ordinary Law 11.803, of 2008. The government rightly identified and anticipated the structural change in the central bank’s balance sheet, and the risks involving massive losses, following the strategy of accumulation of international reserves. The change made by the new legislation, however, has brought a peculiarity to the fiscal and monetary interactions in Brazil. The Law 11.803/2008 split the central bank’s results into two parts. One side, called ‘exchange equalization’, became regulated by this law. And the other, related to the other balance sheet accounts, remained under the regulation of the Provisional Measure 2.179-36/2001.

That is, after the exchange equalization, only the transactions that are not related to exchange variation are included in the calculation of the central bank’s result. The enactment of this law ended up promoting some distortions in the systematic transfer of results from the national treasury to the central bank. First, the Law 11.803/2008 introduced the possibility for the national treasury to use the resources received from the central bank not only to proceed to the amortisation of the debt but also to pay the interest on this debt. By replacing the expression ‘should be amortised’ with ‘should be paid’, the national treasury’s room for manoeuvre was increased to use resources from the central bank to underwrite its primary and financial expenses, weakening the budget constraint of the government and stimulating the expansion of public expenditures.

Another significant change in the relationship between the central bank and the national treasury included in Law 11.803/2008 stems from the possibility that payments from the national treasury to the central bank, in the event of a negative result (both of exchange equalization and other accounts), may be made through the issuance of government securities and not in cash. It created a situation in which the positive results (of exchange equalization and other accounts) can be transferred from the central bank to the national treasury in cash, and the negative results cause a flow of securities from the national treasury to the central bank. Given the volatility of negative and positive results in the long run, the trend is a large flow of money to the national treasury and a large flow of public securities to the central bank. Considering that a significant part of the transferred result comes from non-realized gains and losses (resulting from the valuation and devaluation of reserves); and given that the Treasury can use this money to make expenses outside the relationship with the central bank (for example, by amortising the debt and paying interest to

the market), the possibility of indirect financing from the central bank to the national treasury arises.

However, the most significant change brought about by Law 11.803/08 refers to a new type of placement of treasury bills in the central bank's portfolio. In order to ensure that the securities portfolio has an adequate dimension for the execution of the monetary policy, the fiscal authority must issue securities to the monetary authority, uncompensated (i.e., *pro bono*), whenever the central bank portfolio reaches a value below BRL 20 billion. In other words, the national treasury is *forced* to capitalise the central bank. In practical terms, as argued in chapter 1, it represents the institutionalisation of the theoretical idea of monetary dominance. According to the explanatory memorandum that accompanied the submission of this law proposal to the National Congress, the rationale behind this submission of the government to the accommodation of monetary goals stems from the necessity to hedge the strategy of international reserves accumulation. The central bank's need to purchase international reserves raises the collateral need of sterilised intervention. Hence, the monetary authority needs to hold a larger portfolio of public securities: The higher the purchasing of foreign assets, the higher the need for sterilisation and the need for securities to back these operations.

2.2.3 Repurchase Agreements as a monetary tool in Brazil

Controversy surrounds the use of repos for monetary purposes in Brazil. The outstanding amounts, costs, and conditioning factors of this instrument for the fine-tuning of monetary policy raise concerns about the fiscal effects of central bank choices. In the light of what has been argued so far, these choices are grounded on the theoretical framework of monetary dominance. Among its two practical aspects – central bank independence and inflation targeting – this section focus on on the latter.

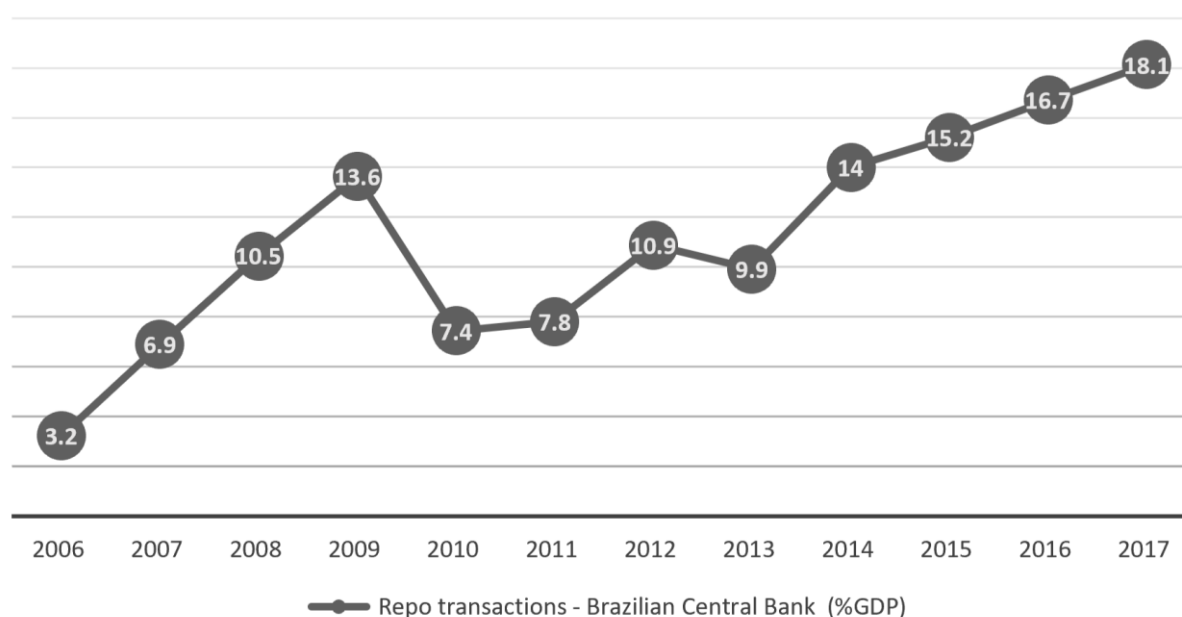
On June 1, 1999, Brazil formally adopted inflation targeting, under the premise that the government had to coordinate market expectations and control inflation in a context of floating exchange rates (Barbosa-Filho, 2006). To meet this target, the Brazilian central bank, not different from other main central banks, make use of repos or reverse repos for the management of short-term liquidity. In theory, the use of this instrument in Brazil has been following international practices and standards. In practice, however, the *sui generis* extensive use of reverse repos in the country has caught the attention of different scholars.

Mendes (2016) and Fraga (2016) see a correlation between the amount of foreign reserves accumulated following the 2000 commodities boom, and the outstanding amount and costs of repo

operations carried out by the Brazilian central bank. Paim (2016) has a different perspective on the exponential growth of repurchase agreements in the country. While not rejecting the part of international reserves, he associates this growth with the changes in the legal framework of fiscal and monetary interactions. The 2000 fiscal responsibility law and the subsequent interdiction of central bank bond issuance in 2002 have prompted the use of repos for two reasons.

First, the monetary authority legally relies on the government's power of taxing, to be supplied with public securities whenever it deems necessary for preserving the commitment to inflation targeting. Second, with the monopoly of issuance given to the government, the monetary authority found on the repos, if not a perfect substitute, a closer instrument that could fulfil a similar function as the central bank bonds. Figure 2.4 depicts the evolution of repos for monetary purposes following the changes in the legal framework of fiscal and monetary interactions in Brazil. In the years following these institutional changes, we observed that the use of repos soared from 3.2 per cent of GDP in 2006 to 18.1 per cent of GDP in 2017.

Figure 2.4 | Repo operations for monetary purposes in Brazil (2006-2017, per cent GDP)



Source: Own elaboration, data from the Central Bank of Brazil (2018); **Note:** Our study ranges covers the period 2006-2016. However, we decided to include the year 2017 for providing a more accurate notion of the outstanding amount in 2016 (due to accounting procedures, some of the repo operations in this year may be accounted in 2017).

A study carried out by Pellegrini (2017) on the composition of the balance sheet of fourteen central banks in emerging economies, with an amount of international reserves equal to or greater than 15 per cent of GDP, suggests that Brazil stands alone in the extensive use of repo operations. Based on the portfolio of rights with the central government (claims on central government) held by these

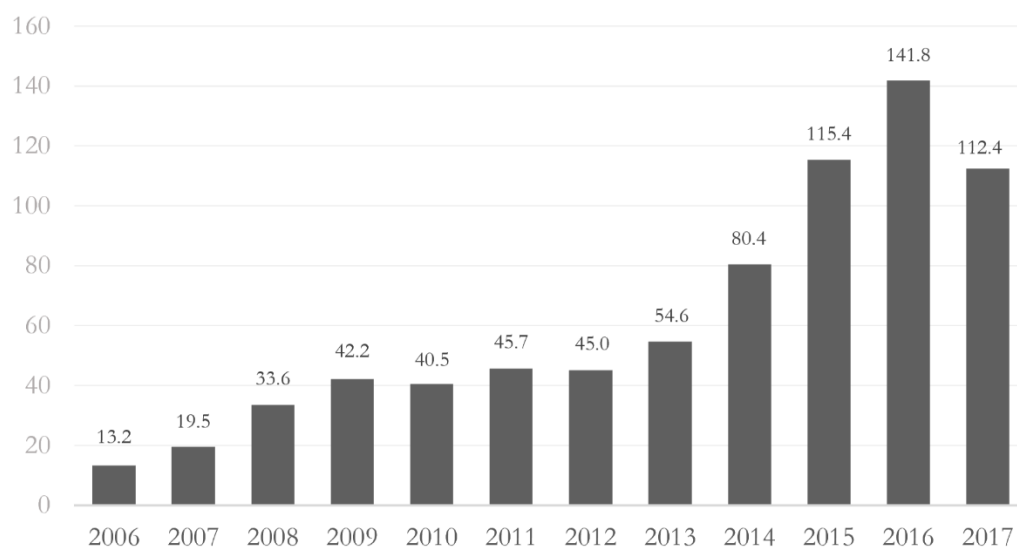
central banks, he shows that the gap between Brazil and the other users of repos is striking. The Brazilian portfolio corresponded to more than 24 per cent of GDP at the end of 2016. The second place among the other thirteen countries was occupied by the Philippines, with only 3 per cent.

The costs of these operations are another important issue. The monetary authority releases monthly data on the size and maturity of repo operations. Both the volume and balance of government securities used for backing the repo operations are available in the central bank database. The amount paid to *each* counterparty, unfortunately, not. As we previously mentioned, technically, reverse repos are used for liquidity management, i.e., for the withdrawal of excess liquidity with a commitment to repurchase the government securities in a future date. However, the buyers of securities (central bank counterparts⁵⁶) expect compensation for the opportunity cost of providing liquidity to the central bank during the length of the repo transaction. These operations are remunerated, on average, by the Selic-rate (main central bank rate).

Consequently, there is a new injection of liquidity in the economy - now coming from the central bank interventions (differently from the excess liquidity coming from the strategy of foreign exchange reserves accumulation). Bresser-Pereira (2019) see a 'vicious circle of excess liquidity' in the Brazilian economy. In this vicious circle, the central bank uses very short-term repo operations to drain excess liquidity in order to make it consistent with the targeted rate. At the end of the repo operation, the central bank pays the interest due to the banks and, in so doing, it contributes to the increase in the money supply. Since repo operations are remunerated by the interest rate (Selic), this situation is all the more worrisome in Brazil where the average interest rate in the period was 13.86 per cent. This vicious circle of compounded interests contributed to the exponential growth of repos that reached a peak of 141.8 BRL billion in 2016⁵⁷ as we can see in figure 2.5 below:

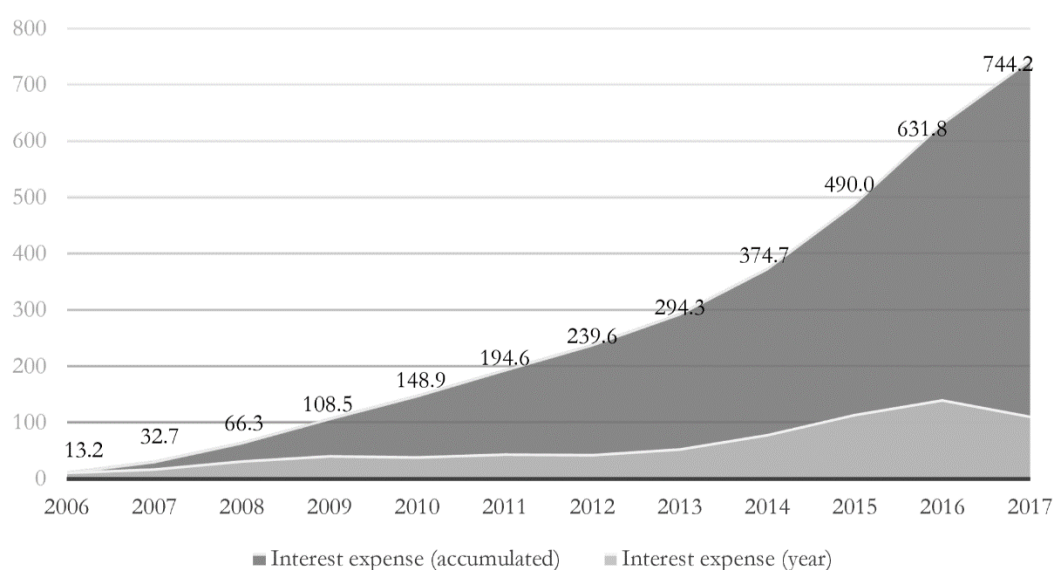
⁵⁶ Article 6 of Resolution 3.339 of the central bank, which regulates repo operations, provides that: In repo operations, at least one of the contracting parties must be a multiple bank, commercial bank, investment bank, development bank, credit, financing and investment company, securities brokerage company, securities dealer company or Caixa Econômica Federal, qualified to carry out such operations.

⁵⁷ As we previously noted, the amount corresponding to the year 2017 are just notional and mentioned to give a whole picture of repos in 2016 (some of the repos may figure in 2017 accounting).

Figure 2.5 | Interest expenses related to repo operations in Brazil (2006-2017, yearly, BRL Billion)

Source: Own elaboration, data from the Central Bank of Brazil (2018)

The accumulated values of interest expenses highlight the high costs of these operations for the Brazilian government. Between 2006 and 2016, the accumulated amount of repurchase agreements carried out by the monetary authority amounted BRL 632 billion (figure 2.6). For comparison purposes, in the same period, accumulated investment expenses amounted to BRL 968 billion (IBGE data, 2018). The opportunity cost of liquidity management is extremely high for a country that lacks basic investment in infrastructure, and 15.2 million live below the extreme poverty line.

Figure 2.6 | Interest expenses related to repo operations in Brazil (2006-2017, accumulated, BRL Billion)

Source: Own elaboration, data from the Central Bank of Brazil (2018)

Besides the outstanding amounts and cost of repurchase agreements, it is important mentioning some of the conditioning factors explaining the use of repos to be so high in Brazil. Considering that repo operations are carried out with the use of public securities as collateral, the efficient use of this tool (reverse repos) is closely related to the institutional arrangement established between the monetary and fiscal authorities. A very common concern about fiscal and monetary interactions is the implications of expansionist policies carried out by the fiscal authority. Tenants of the fiscal dominance theory in Brazil understand that the high volume of repo operations is symptomatic of dominated central bank forced to drying up excess liquidity produced by the national treasury (Lara Resende, 2016; Fraga, 2016).

Bacha (2016) attributes the increase in repo operations to the financing of treasury operations, especially in the domestic federal debt. The reasons for raising concerns then are twofold: the increase in the perception of sovereign risks and surplus liquidity. In the first case, the author states that the Central Bank is more exposed to fiscal dominance because government fiscal imbalances, arising from the use of the repo operations, are likely to constrain central bank choices. Therefore, this mechanism reduces the effectiveness of the monetary policy, given the successive increases in the basic interest rate.

In order to understand the distortions in the use of repo in Brazil, it is essential to understand how the central bank and treasury operations affect the monetary base. Table 2.2 describes the main operations carried out by the fiscal and monetary authorities and their respective impacts on the liquidity level of.

Table 2.2 | Monetary impacts of central bank and treasury operations

Treasury operations		Central bank operations	
Main Operations	Overall liquidity impact	Main Operations	Overall liquidity impact
Operations with public securities		Foreign exchange reserves	
Bond issuance	Contractionary	Acquisition	Expansionary
Bond redemption	Expansionary	Selling	Contractionary
Government Primary Result		Compulsory deposits	
Primary revenues	Contractionary	Redução na Aliquota	Expansionary
Primary expenses	Expansionary	Aumento da Aliquota	Contractionary
Receiving Debt renegotiation with subnational entities	Contractionary	Swaps	
Other National Treasury financial revenues	Contractionary	Gains	Contractionary
Other National Treasury financial expenses	Expansionary	Losses	Expansionary
		Interest payment on Repos	Expansionary
		Other Central bank financial revenues	Contractionary
		Other Central bank financial expenses	Expansionary

Source: Own elaboration, data from central Bank of Brazil (2018) and national treasury (2018).

Concerning the actions of the National Treasury, during the period 2006-2016, while on the one hand, the policy of liquid redemptions and Treasury investments were expansionist, on the other hand, the primary surplus and the payments of renegotiated debts by subnational entities had a contractionary effect, offsetting to a large extent the initial expansion. As opposed to treasury operations, central bank operations were substantially expansionary over the period under review. While the expansionary and contractionary operations of the fiscal authority (to a certain extent) were well balanced, the main expansionary operations of the central bank did not show the same profile. Significant contractionary measures did not counterbalance factors such as the purchase of international reserves, the payment of interest on the stock of repurchase agreements and losses on foreign exchange swaps.

Pellegrini (2017) mentions that the sterilization carried out by the monetary authority is a by-product of the liquidity preference of Brazilian economic agents - often explained by the recent past of hyperinflation and high uncertainty. This dynamic would be responsible for the increase in the net debt of the Brazilian public sector. The authors argue that the central bank carries repo operations to window-dress the Brazilian very short-term profile. The transfer of public securities to the central bank's balance sheet by the treasury, to execute monetary policy, would correspond to a strategy of the fiscal authority to roll over the internal debt indirectly, through securities for which there would be no favourable terms for placing on the market.

2.3. Does the extensive use of repos raise inflationary pressures?

Following the adoption of inflation targeting, the study of the main transmission mechanism of monetary policy, the interest rate, increased in importance. Therefore, a better understanding of repurchases agreements, the main monetary instrument for liquidity management, provides further comprehension of inflation targeting. The main central banks, guided by mainstream theory, narrow their focus on the management of aggregate demand for the fine-tuning of inflation targeting; Neglecting, therefore microeconomic (or supply-side) and political factors that determine inflation. The guidelines of monetary operations in the bank of England corroborate this influence:

Monetary policy works largely via its influence on aggregate demand in the economy. It has little direct effect on the trend path of supply capacity. Rather, in the long run, monetary policy determines the nominal or money values of goods and services – that is, the general price level. An equivalent way of making the same point is to say that in the long run, monetary policy in essence determines the value of money—movements in the general price level indicate how much the purchasing power of money has changed over time. Inflation, in this sense, is a monetary phenomenon (Bank of England, 1999: p. 162).

In the same vein, this influence is also present in the statement of the central bank of Brazil on the role of monetary policy:

Over the past few years, a consensus has emerged among economists and central banks that the main objective of monetary policy should be to achieve and maintain price stability[...] it is worth noting that monetary policy produces real effects only in the short to medium term, i.e. in the long run money is neutral. The only effect, in the long run, is on the price level of the economy (Inflation Report, v. 1, June 1999: 89).

The emphasis placed on the neutrality of money hypothesis, however, neglects the influence of additional elements in the process of price formation - which can lead to a misleading perception of the drivers of inflation. The conventional description of this process fails to address the crucial role played by microeconomic factors (e.g., rules of price-making or market structure) and political factors (e.g., conflicts of interest, group action or conventions) - in determining the general price level. This biased perception creates a situation where the response to a monetary stimulus to influence price dynamics may assume a different path from the one anticipated by the central bank.

The theory of price formation in oligopolies suggests that sectors with a high concentration of market power tend to be more inflationary for at least two reasons: i) they have greater bargaining power with the public power to define the price that suits their interests best. With regard to the oligopolistic structure of the banking sector (as in Brazil), there is a greater risk of influence on monetary decisions⁵⁸; and (ii) the oligopoly may be relatively immune to the contractionary effects of monetary policy, as they do not necessarily compete via prices. Thus, the link between microeconomics and monetary macroeconomics would also be established by this channel: the degree of concentration of the banking sector. In this respect, oligopoly price formation theories, in their most varied aspects and approaches, have much to contribute. However, this question goes beyond the objective of this thesis.

Our political economy approach, in addition to the five monetary policy transmission channels contemplated by conventional theory (Mishkin, 1995; 1996), suggests the inclusion of additional channels, which take into account i) conflict inflation and ii) the use of financial-indexed instruments (such as the repos) as an alternative framework. At the heart of our approach lies the 'double character' of repurchase agreements. The use of repos for monetary purposes generates an anomalous relationship between the central bank and the commercial banks. At the same time that repos are the core instrument of inflation targeting, central bank counterparties see in this instrument a safe source of profit. The indexation of this financial instrument to the interest rate provides attractive compensation and high liquidity.

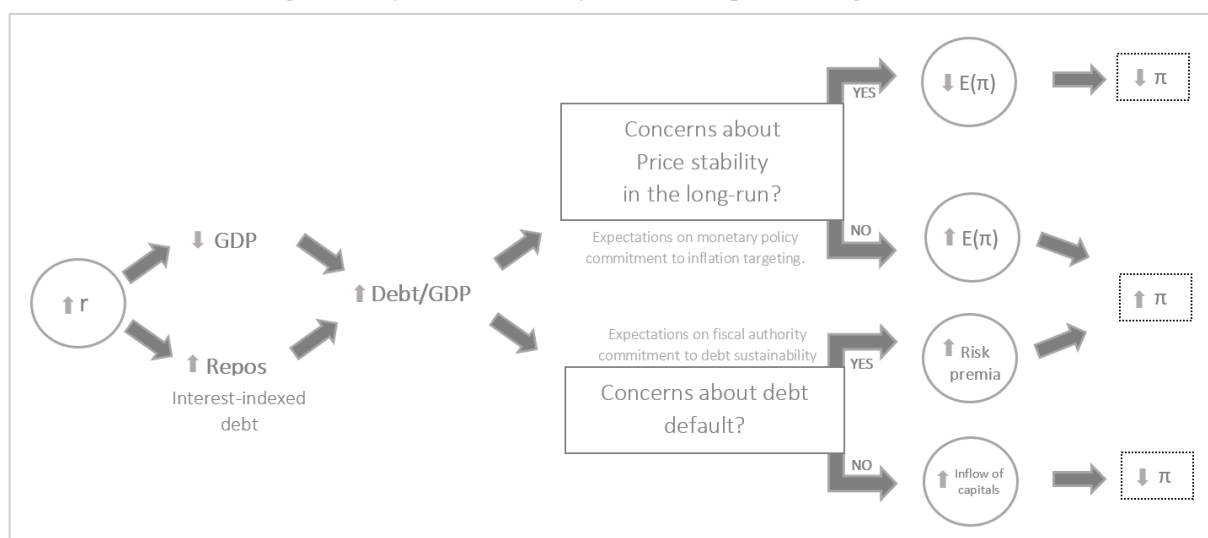
In parallel to this conflict of interest, there emerges an obscure channel between the interbank lending and public debt markets. For, in addition to remunerating the monetary policy instrument

⁵⁸ This theme will be addressed in Chapter 3, when we introduce de the financialisation of monetary policy.

for liquidity control, the Selic rate also benchmarks the government bonds (traded on the primary and secondary public debt markets). Hence, a potential miscoordination arises between the Brazilian central bank, which uses the Selic rate to control inflation, and the government that depend on the Selic rate to finance public expenses. Barbosa (2006) noted that this channel generates a contagion effect between public debt and monetary policy. For, a risk premium must be added to the basic interest rate: ‘As a by-product of the close interrelationship between public securities used in repos and bank reserves, the basic interest rate [Selic] incorporates a risk premium’ (p. 236).

With a high interest rate and the existence of securities and repos (very short-term investments) remunerated by this rate daily, it becomes almost impossible for the government to lengthen the profile of the public debt. As a consequence, a short-term debt profile does not encourage investors to buy long-term securities. This is all the more worrisome in the case of restrictive monetary policy, as a higher interest rate would increase the fiscal pressures on the government and, consequently, the risks of sovereign default. Therefore, the solution to this situation lies in the government’s decrease in the use of repos. Figure 2.7 provides a schematic overview of the influence of repos over inflation and fiscal and monetary interactions.

Figure 2.7 | The inflationary circuit of repurchase agreements



Source: Own elaboration.

If we consider a restrictive, independent and narrow-focused monetary policy, responding to an economic shock, we can expect greater remuneration to the central bank counterparts on repos combined with a fall in the productive activity. The immediate fiscal impacts of this policy are twofold: A contraction of the tax base and an increase in the risk premia. The increase in the debt to GDP ratio raises concerns about the credibility of the monetary authority in controlling future

inflation. If the agents hold confidence in central bank commitment to inflation targeting, inflation expectations will decrease ($\downarrow\pi$), and the restrictive monetary policy would have the expected effect of lowering inflation ($\downarrow\pi$). On the other hand, if there is no confidence in the control of future inflation, inflation expectations will rise ($\uparrow\pi$). The restrictive monetary policy will then have the effect of raising the inflation rate ($\uparrow\pi$).

From the perspective of the fiscal authority, the growth of the debt to GDP ratio raises concerns among the bondholders about sovereign debt sustainability. If they perceive an increase in the probability of default, the immediate impact will be on the risk premia (\uparrow risk premia). Which, consequently, would lead to the inflation rate to increase ($\uparrow\pi$). However, even though debt to GDP follows an uprising trend, but investors believe that it follows a sustainable path, then there will be the continuity of capital inflows into the country (\uparrow inflow of capitals). And, hence, the restrictive monetary policy will be effective, with a fall in the inflation rate ($\downarrow\pi$). It is noteworthy that, from both perspectives, the expectations channel of monetary transmission plays a crucial role, corroborating our argument presented in chapter one about the reasons for coordinating the expectations via the convention on monetary dominance.

This coordination is key for shaping the general perception away from the conflicts of interest around the use of repos for monetary purpose, and some of the monetary policy inefficiencies. Nakano's (2005) insights on the different sources of conflict of interest around monetary choices provide a framework for thinking of the opportunity costs of repos to commercial banks. This conflict of interest in the use of repos can also give rise to a perverse channel of monetary policy transmission due to the imperfections of the credit channel. An increase in the interest rate would generate an increase in financial income from the central bank's counterparts in repo operations. Hence, the effectiveness of monetary policy would be limited because, since banks are the main counterparts of the central bank in repos operations, their assets and revenues would also increase once the Selic rises. With more resources available, they could expand their loans – which would raise the inflationary pressures. But only until a certain critical interest rate level - from which the risk of default would increase, due to moral hazard and adverse selection.

Thus, the extensive use of repos in the conduct of monetary policy raises concerns about distortions in fiscal and monetary interactions in Brazil; With subsequent inefficiencies in both policies. The 'double character' of this financial instrument shows some of the limits of the practical aspects of monetary dominance. The independent and narrow-focused pursuit of inflation targeting may be motivated by the vested interests operating alongside the central bank. This

challenges the view of inflation as a purely monetary disease and brings to the forefront the necessity of reorienting monetary theory towards an approach that integrates conflict inflation. While challenging the core foundations of inflation targeting, we are confronting the conventional assumption of ‘fiscal mismanagement takes it all’ to the vested interests of the financial interest groups under monetary dominance. In the light of what has been argued so far, the central bank remains a pivotal institution for asset monetisation. The main shift, however, has been occurring on the nature of this monetisation.

2.4. Issues on the nature of public borrowing

The common explanation found in the literature for the use of repos for monetary purposes associates this tool to the need for draining excess liquidity. Indeed, repo operations are very efficient for this purpose (Mishkin, 2017). However, little is mentioned about the possible distortions on the use of this key instrument. In general, research on the use of repos for the conduct of monetary policy enlists the beneficial effects of this instrument for the pursuit of the objectives of the central bank. However, the benefits for the central bank counterparties are little explored. Dealers (the counterparty in reverse repo operations) have a dual motivation to engage in repo operations with the central bank. Firstly, they are interested in the attractive remuneration for this transaction with minimal risk (in addition to the safety provided by the central bank, dealers receive public securities as collateral). Then, depending on the type and duration of the operation, central bank reverse repos allows commercial banks to finance themselves, or invest their temporary cash surpluses, in the interbank lending market while minimising credit risk. The provision of collateral by the borrowing counterparty (Central bank), most often, in the form of government securities, whose ownership is transferred to the lender during the term of the transaction, provides very high security and thereby limits credit risk to the recipient of the underlying assets.

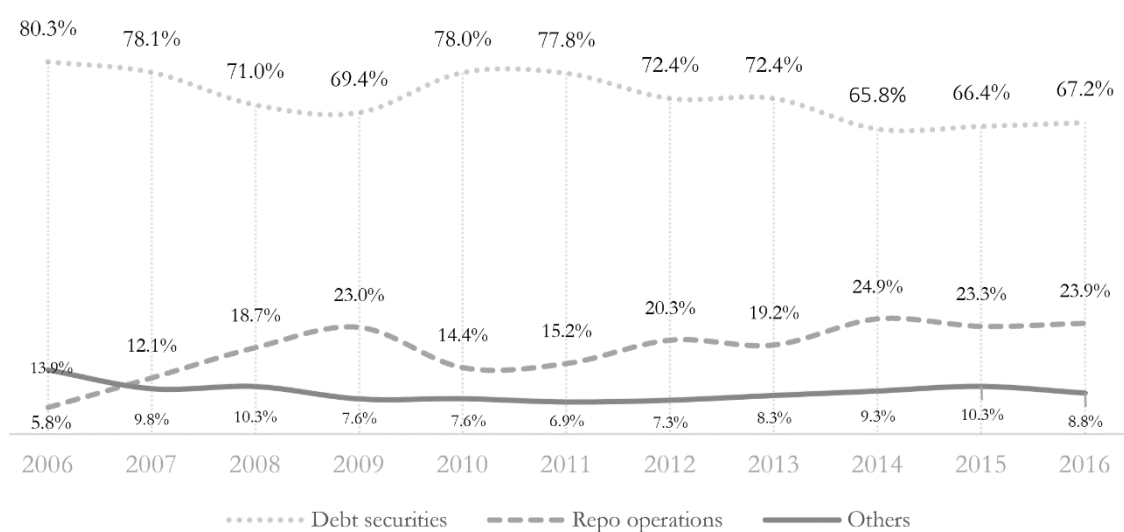
This situation raises concerns about the nature of public indebtedness; Or, according to Fatas et al. (2018), the ‘good and bad’ motives to borrow. Among the main reasons for a country to overborrow, they highlighted the political budget cycles and rent-seeking, intergenerational transfers, strategic manipulation and common pool problems. These elements are of special interest for understanding the extensive use of repos for monetary purposes in Brazil. We suggest that the distortion in the use of repos for monetary purposes present some of the characteristics of a bad motive to borrow. Different from productive debt, the extensive use of repos for monetary purposes present some characteristics of deadweight debt. Because it transfers the burden of remunerating central bank counterparties in repo operations to the taxpayers. This concentration

of private benefices at the expenses of collective losses represents, therefore, inefficient use of the national savings. Its inefficiency stems from the creation of incentives by the central banks for the continuity of the ‘vicious circle of repos’. Fatas et al. (2018: p. 21) highlight: ‘When policy actions benefit a certain group [...], the relatively small group of people who benefit from the policy will have strong incentives to lobby in favour of the policy’.

The incentives to lobby for a policy creates a ranking of preferences with macroeconomic objectives. And the ranking of preferences in policymaking invariably involves trade-offs. Increases in spending in one area are likely to entail equal and opposite budget cuts in other areas. Adolph *et al.* (2018) show that the resource allocation by governments is related to areas dear to their constituents, with targeted cuts related to less important areas to the party’s agenda and electoral prospects. A similar conclusion was previously reached by Besley (2007). He draws attention to the fact that policymakers may lack enough incentives to act in the interest of disorganized groups such as those of taxpayers. Even in fulfilling its apparent virtuous functions, government choices can be subject to the influence of organized groups around different levels of public administration. Dixit and Grossman (1997) theorise the organized interests lobbying the government for subsidies or special favours as a principal-agent problem. They find that organized interests around public decision-makers are most likely to capture political leadership and are those in charge of policy choices-leading, which requires disciplining disorganized groups for the peaceful acceptance of their decision-making.

We suggest then that the distortion in the use of repos for monetary purposes presents some characteristics of a bad motive to borrow. To support our argument, we highlight three particular features of the Brazilian public indebtedness. **First**, the increasing share of repo operations as a total of the gross debt composition in Brazil. As we depict in Figure 2.8, during the period 2006-2016, the share of repos in the national debt rose from 5.8% to 23.9%. This shift to a short-term and interest-linked the debt profile should be understood, as we previously mentioned, as an increase in the fiscal cost borne by the government, at the detriment of the wealth maximisation of the central bank counterparties in these operations

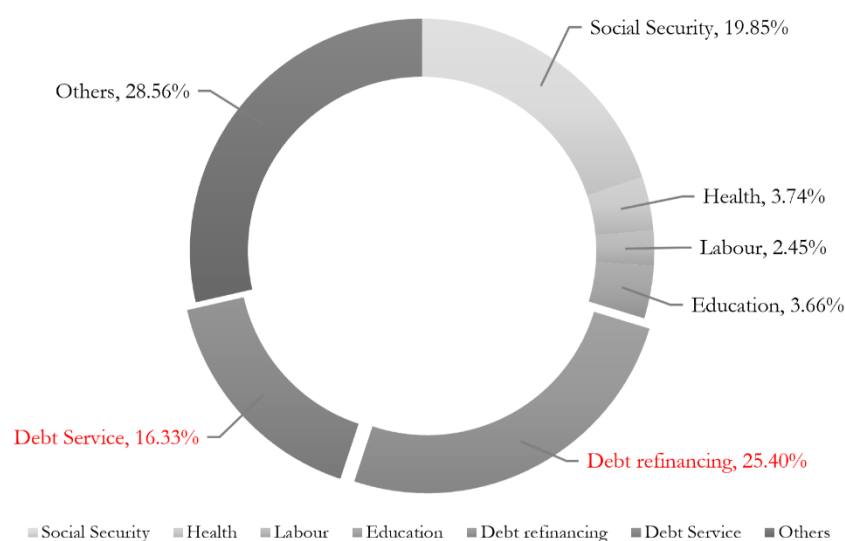
Figure 2.8 | Gross debt composition, Brazil 2006-2016



Source: Central Bank of Brazil (2018) and national treasury (2018) databases.

Second, the large share of the public budget consecrated to debt-related expenses has been compressing other public expenditures. The high costs of interest service constrain the public policies of the government. Since it requires the maintenance of high primary surpluses over time. This is reflected in the elaboration of the federal budget, which is based on an *a priori* restriction: to establish a primary surplus compatible with the sustainable trajectory of the public debt indicators that have been elected by the financial institutions. Figure 2.9 depicts the important part of interest payments in the Brazilian budget. From the total 2016 public budget, 16.3 per cent amounted for interest payments and 25 per cent for debt refinancing. Together, expenditures with sovereign debt amounted more than 41 per cent of the federal public budget. While spending on education, labour and health, combined, did not account for 10 per cent of public spending.

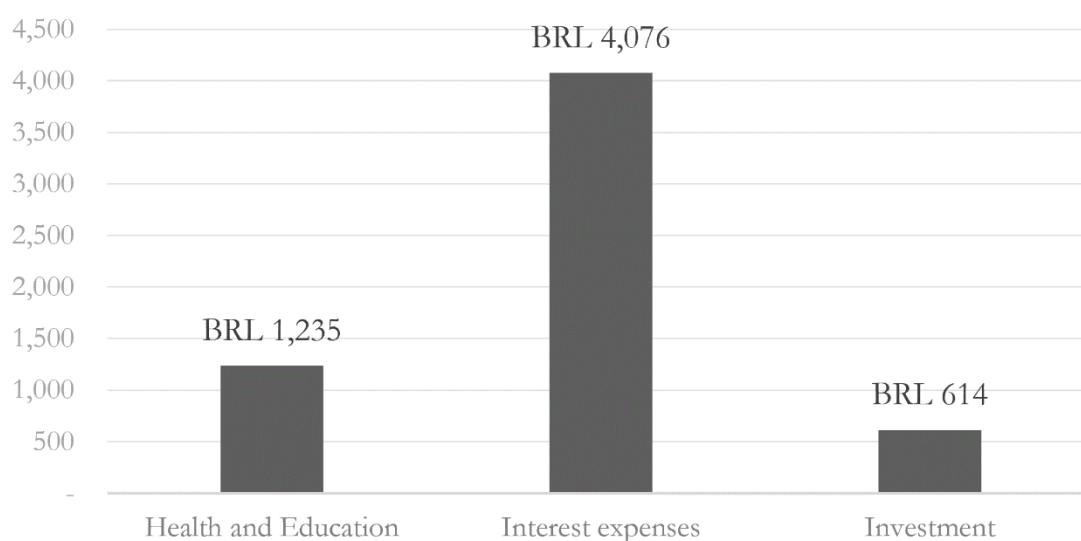
Figure 2.9 | Main public expenses, Brazil 2016 (BRL Billion)



Source: Own elaboration, data from the Ministry of Economy of Brazil (2017)

Almeida (2015) shows that interest-related expenses compress other primary expenditures. Specifically, he argues that this compression can be evaluated by comparing the total accumulated spending on interest service with other primary expenditures of the central government. Between 1998 and 2014, the accumulated interest service on the public debt amounted to BRL 4.076 trillion. In the same period, government's social spending on health and education, excluding transfers, totalled BRL 1.235 trillion, and public investment in infrastructure amounted to BRL 614.2 billion, as we can see in figure 2.10 below:

Figure 2.10 | Government spending on health, education, and interest payments (1998-2004, BRL Billion)



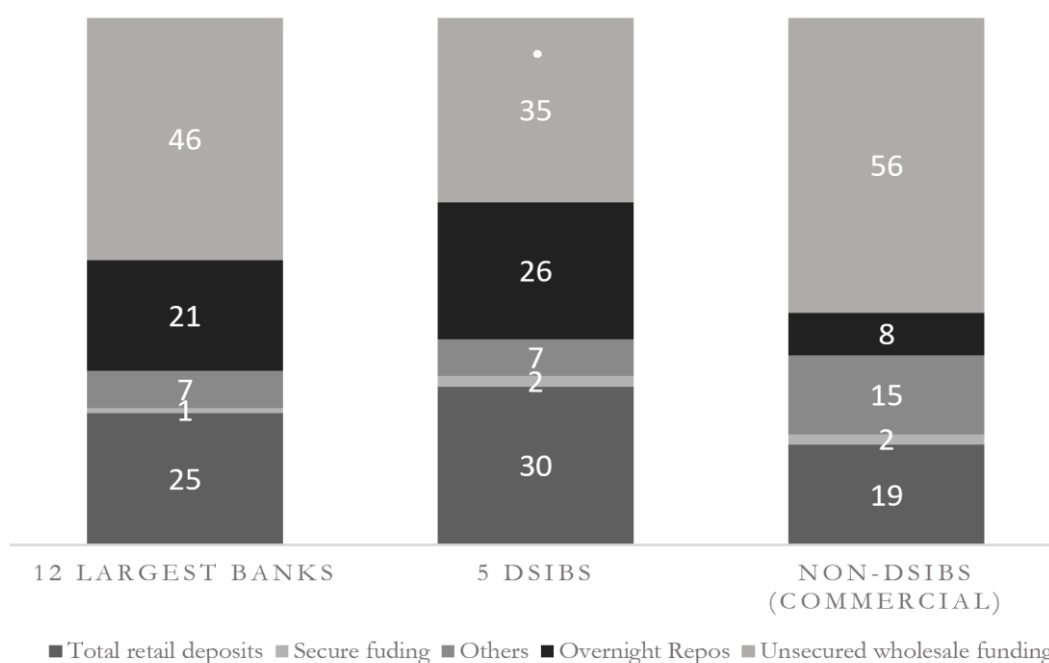
Source: Adapted from Almeida (2015)

Third, the central bank's repo operations have been one of the main sources of financing for the banking sector. Without denying the importance of repos for short-term liquidity management, it should be noted that repos are a debt contract like any other, i.e., that on the one side we have the financing needs of the government and, on the other, the necessity of the large financial institutions to lend money. Particularly in Brazil, the central bank's repo operations have been one of the main sources of financing for the banking sector. The use of repo transactions has been allowing commercial banks to finance their operations, or invest their cash surpluses on the interbank market while mitigating credit risk. The provision of collateral by the borrowing counterpart, most often, occurs in the form of government securities whose ownership is effectively transferred to the lender during the term of the transaction. It provides very high security and thus mitigates credit risk corresponding to the underlying assets.

The repo market is hence a hybrid organisation of banking and financial activities in the refinancing market. The bank refinancing market is closely linked to two banking privileges: refinancing with

central banks and protection in the event of bankruptcy. These ‘privileges’ are then integrated into the calculations of risk premia. As we can see in Figure 2.11, more than 20 per cent of wholesale funding for the 12 largest commercial banks came from short-term overnight repo funding secured by government securities in 2018. According to the IMF (2018), more than 20 per cent of wholesale funding for the 12 largest commercial banks comes from short-term overnight repo funding secured by government securities. It is worthwhile noting that banks act as intermediaries to channel liquidity between investment funds and the Brazilian central bank by entering the repos of government bonds with the former and the reserve repos with the latter, as the central bank sterilises Brazil’s structural liquidity surplus (around 25 per cent of GDP) via repos.

Figure 2.11 | Funding structure of Brazil’s banking sector



Source: Own elaboration, data from IMF technical note on stress testing and systemic risk analysis (2018: P.46)

It is worthwhile mentioning that Brazil has one of the highest banking concentration rates in the world. Moreover, data from the central bank (2018), the five largest Brazilian banks account for 82 per cent of the country’s entire financial market. The ratio is much higher than the 54.6 per cent recorded in 2006 and also exceeds the global average. Data on banking concentration in the world show that the Netherlands alone surpasses Brazil, with a concentration rate of 89 per cent. The other nations, on the other hand, have varied indexes, which normally range from 30 per cent to 70 per cent. The United States, for example, has 43 per cent and China 37 per cent.

Against this background, two questions come to the fore: First, why doesn't the central bank sell the securities permanently in its portfolio for liquidity management (instead of using these assets as collateral in repo operations)? The oligopolistic structure of the banking sector in Brazil provides an important lead. In the light of Olson (1965), this concentration of large buyers in small and organised interest groups suggests that these financial institutions face different incentives to coordinate around the refusal to buy these securities permanently (i.e. without an agreement to repo it out). Hence, the hold of bank reserves (instead of lending it to finance the productive sector) drives the Central Bank to intervene via reverse repos, generating high and safe profits for these institutions. All of this at the expense of an increase in the General Government Gross Debt and the taxpayer – who is taxed to the full limit. Secondly, why do these financial institutions behave in such a manner, 'refusing' and keeping resources in bank reserves?

We suggest that asymmetric information in the interbank lending market may be at the origin of this 'capture' by the financial institutions. The constant central bank interventions in this market to monetise excess reserves creates incentives for these institutions to engage in moral hazard behaviour. The reason is that this surplus liquidity could bring interest rates down and inflationary pressures to rise. Paradoxically, this behaviour stems from the central bank need to ensure the credibility of its commitment to meeting inflation targeting – a situation similar to Minsk's (1982) paradox of credibility. From this paradox, we can deduce the high opportunity cost of these operations: This excess of reserves, instead of financing the productive sector, turn out to be monetised by the central bank.

Conclusion

This chapter has sought to provide a political economy critique of the practical aspects of monetary dominance. It challenged the conventional idea that the narrow focus on inflation targeting provides the best outcome in terms of sustainable growth and economic development. We suggested that the adoption of one-size-fits-all theoretical solutions for coping with price instability may generate unexpected macroeconomic externalities in the absence of broadening consideration of a country's specificities. The case of Brazil illustrates well the limits of inflation targeting. We brought to surface the Brazilian context where the main instrument for managing short-term liquidity, repurchase agreements, also represents an important source of funding for the major banks in the country. This conflict of interest has long been neglected in fiscal and monetary literature. Our analysis, then, was structured to reorient the general perception about the determinants of fiscal imbalance in the country, towards a better comprehension of the fiscal costs of monetary instruments.

This paradigm shift is essential for comprehending the expansive dynamics of the national public debt, and the fiscal fragility of the Brazilian economy. It prompts critical thinking about the determinants of deficit spending, that goes beyond the non-financial expenditures of the public sector. We understand that, in general, reliable diagnosis of fiscal imbalance stems from different reasons, i.e., it is more complex than the merely ‘fiscal mismanagement takes it all’ diagnosis. The use of the fiscal dominance argument to justify the measures of fiscal consolidation is not only incomplete but biased and impaired. This is all the more important in Brazil, where the primary surpluses observed between 2006 and 2013 (before the dawn of the 2014 political crisis) contrasted to persistent deficits. A broad understanding of the causes of the country’s fiscal fragility is therefore necessary. This is the reason we have brought to the surface this reflection about the choice of monetary instruments, the fiscal cost of these instruments and the interests of financial interest groups.

The use of repos for monetary purposes in Brazil cannot be separated from the idea of fiscal dominance. Specifically, we have shown that the legal framework that regulates fiscal and monetary interactions in the country embeds the theoretical notion of fiscal accommodation of monetary choices. The 2000 Law of Fiscal Responsibility consolidated the legal and constitutional compliance to the monetarist principles advocated by Sargent and Wallace (1981). The incorporation of this law into the Brazilian Constitution (Complementary Law n. 101), and the creation of other legal mechanisms of monetary-dominance inspiration, support this consolidation in two different manners. First, by prohibiting the central bank from issuing its debt securities. From the moment this law came into force, debt issuing costs and its burden were transferred to the fiscal authority alone. Second, by making it mandatory for the fiscal authority to provide public securities for monetary purposes whenever the central bank deems it necessary – all for the sake of the credibility of inflation targeting vis-à-vis the bondholders. It should be noted that ‘credibility’, under these terms, is reassured by law enforcement. What the law of fiscal responsibility fundamentally states is that the central bank portfolio should be provided with enough public securities to serve as collateral when borrowing money from banks (under the guise of reverse repos for removing liquidity excess).

These operations, as they constitute a central bank ‘loan’ to the market, imply interest payments. In turn, the amount of these interests depends on i) the Selic rate, which is the central bank interest rate that remunerates repo operations; and ii) the outstanding amount of these operations - resulting from past flows and the interest paid on these transactions (compound interests). This paradox then arises as follows: The central bank pays interest to the ‘market’, increasing the monetary base (by issuing money and generating an increase in bank reserves). To reduce the

monetary base, the central bank conducts more repo operations, increasing the outstanding amounts of these operations (on account of interest payments) thereby returning the monetary base to a level consistent with the desired (targeted) inflation. However, the higher the outstanding amount of repo operations and the higher the interest rate, the higher the ‘interest expenses’ on the public budget, and the higher the fiscal impacts of conducting new repo operations to dry excess liquidity. The main intuition underlying this ‘vicious circle of repo’ is that the narrow the focus on inflation targeting, the higher the fiscal costs borne by the taxpayers.

All of this suggests that monetary dominance in general and inflation targeting in Brazil in particular needs further reconsideration. The key factor that explains the use of the repos is the interest rate pursued by the monetary authority stemming from the central bank’s choice to *primarily* target inflation. It is worth noting that i) Inflation targeting embeds the idea of demand-pull inflation; and, hence, ii) to maintain liquidity at the desired level, a constant cycle of rolling-over and issuance of the repo for monetary purposes seems necessary. In other words, the cost of repo operations increases over time, reflecting the growing interest payments on these operations. Hence, the payment of new interest by the Central Bank injects new liquidity into the economy, and this will be drained through the issuance of new repo operations. Thus, under what seemed to be an ideally theoretical solution to cope with price instability, inflation targeting, in practice, has been generating fiscal pressures in Brazil – with the outstanding amount of repo operations reaching a substantial level over the last few years.

Bearing these aspects in mind, the general objective of this chapter was to show that i) the theoretical benefits and the practical aspects of inflation targeting are mismatched. The fiscal efforts required to achieve this goal ultimately compromise the general welfare, as the financial and social costs of monetary dominance are transferred to the government and the taxpayers; and ii) financial interests and monetary choices also contribute to fiscal imbalances in Brazil. Our analysis on the central bank use of repos bound these three aspects together. We suggested that this important monetary instrument for liquidity management (and, therefore, a significant share of the Brazilian public debt) is exposed to a ‘capture’ by financial interests – a situation that we term here as the ‘financialisation of monetary policy’. The following chapter addresses this issue while exploring new avenues of thinking about how fiscal and monetary policies could better interact.

The financialisation of monetary policy in Brazil

Introduction

The financialisation of monetary policy encompasses the recent changes in the nature of central banking. This chapter, the theoretical corollary of the ideas presented along the lines of this thesis, explores these changes. It complements the previous arguments about these changes in the nature of central bank associated with the widespread support of the convention on monetary dominance. The formal lines of this convention were drawn recently, following modern developments in economic thought. It was not until the monetarist counter-revolution that the restriction of credit to governments and central bank independence⁵⁹ to target inflation came to prominence. The different crises, both of recession and unemployment, and fiscal deficits and inflation have prompted a theoretical rethinking about fiscal and monetary goals and the purpose of use of monetary instruments.

The thesis of central bank independence gained momentum in the 1980s and 1990s (Rogoff, 1985; Fischer, 1995; Alesina and Summers, 2001). Its core argument stemmed from the necessity to restrain any political pressure that could divert the central bank to operate as the ‘guardian’ of the purchasing power of money. Within the context of our research, it means that monetary dominance has become the main prescription for fiscal dominance. In practical terms, the exponential increase of financial innovations (e.g. repos), the relative increase of private credit (which have driven the growth of world economy since then) and the deregulation of financial markets are to be also taken into account while analysing the claims for central bank independence.

For some scholars, policymakers and central bankers, this thesis seems to be above criticism – neither questionable nor debatable. At the origin of this narrow focus, there is a held belief that the neoliberal positions of Hayek, the monetarist doctrine and their followers linked to rational expectations theory were the only authentic or true belief. However, the independence argument, although well established, does not constitute unanimity. This is because it involves theoretical

⁵⁹ The literature on central bank independence broadly states that there are four types of independence: Institutional, Goal, Operational and Financial. They are not mutually exclusive and offer a complementary explanation for the institution of monetary dominance. When referring to central bank independence in this introduction, we mean the independent pursuit of the goal of inflation targeting.

approaches ranging from the invisible hand of market forces and the neutrality of money to the vertical coordination between monetary and fiscal policies. Some of these assumptions, as we have been arguing, are dubious and not scientifically proven. Or, in the words of Lang and Setterfield (2002), we are confronted with the problem of ‘faith-based macroeconomics’.

As a result, the implications of central bank independence over fiscal and monetary interactions seem to have been insufficiently explored. This may explain two flaws in most of the mainstream literature on this topic. First, it deals almost exclusively with monetary choices, and therefore rarely with its horizontal coordination with fiscal policy. Studies on the fiscal costs of an independent monetary policy are scarce. Second, it assumes prices and wages to be perfectly flexible and that the major fiscal imbalances stem from the government’s preference for a higher level of activity than that resulting spontaneously from the behaviour of private agents. Without further critical analysis, therefore, the mere compliance to the vertical coordination of monetary and fiscal policies may lead to a perpetual condition of fiscal fragility and public deficits associated to the financial expenditures of the public sector – the cost of which borne by the fiscal authority and the taxpayers.

Howells (2009) draws attention to four misconceptions and contradictions associated with the independence of the Central Bank. According to him, i) it is not clear from what and to whom the central bank should be independent; ii) there is uncertainty about the mechanisms by which independence could foster general welfare; iii) the externalities produced by the independent pursuit of monetary goals (inflation targeting) over other macroeconomic objectives are poorly understood; and iv) empirical evidence supporting independence is weak. Considering the controversies surrounding these issues, the prospects of central bank independence, in particular, and of monetary dominance, in general, must be understood with great caution. Two open questions are indicative of this need for caution: Are the pressures for asset monetisation avoided or exacerbated with central bank independence? Is the independent pursuit of inflation targeting the only way to ensure macroeconomic stability?

The purpose of this chapter is to explore these questions. To do so, we rely on the theoretical framework and empirical findings from financialisation theory. This theory championed by Epstein (2005) provides the essential guidelines for understanding the role of financial motives and actors behind these recent changes in the nature of the central bank. Out of the different branches of the study of financialisation, we extend Karwowski and Centurion-Vicencio’s (2018) analysis of public policies and introduce the concept of financialisation of monetary policy. In putting forward this concept, we suggest a way of thinking about the limits of monetary dominance from the historical perspective of the use of repurchase agreements in Brazil. We complement the conclusions of

chapter two with an analysis of the implementation of the automatic clearing mechanism (*zeragem automatica*), repo's forerunner, in 1979. Our analysis suggests that the choice for implementing this mechanism, the context of high inflation in the country, and the interest of financial groups at the time in preserving the real value of their net wealth, are to be understood together. This *critical juncture* moment grounded a series of central bank choices that gradually transformed the nature of monetary policy – from an instrument aimed at primarily promoting growth and distribution, into a liquidity provider of last resort. It locked-in subsequent central bank choices into *path-dependent* interventions in the interbank lending market, with consequences over i) the creation of incentives for moral hazard behaviour among participants in this market; and ii) the fiscal fragility of the Brazilian economy.

Drawing upon the historical evolution of repos, we bring new data that demonstrates the externalities produced by the financialisation of monetary policy over sovereign debt management in Brazil and the overall fiscal position of the country. These negative externalities show that the question of central bank independence cannot be restricted to a strictly formal issue (existence or not of legislation that guarantees its independence). Conversely, it ought to consider the strategic importance of central bank instruments for the financial interest groups, and its perennial connections with other formal and informal institutions. Our contribution to a paradigm shift comes from our new framework of analysis. It proposes a three-dimensional analysis of monetary policy theory: Its intellectual foundation, the identification of critical juncture moments and the existence of self-reinforcing mechanisms (e.g. the Convention on monetary dominance). We thereby hope that the financialisation of monetary policy framework can contribute to reorienting the general perception towards a new monetary policy theory – a theory that follows a very fundamental philosophical principle that can be easily applied to the recent changes in the nature of central banking: All things seen are effects of the unseen. So, 'fortunate are those who are able to know the causes' of these changes.

These issues are discussed in this chapter as follows: In the **first section**, we present the fundamental concepts issued from the financialisation literature and point out the main conclusions about the effects of the pervasive financial logic over the public sphere. **Section two** is the most complex and extensive, as we provide a definition of the financialisation of monetary policy and how it operates in Brazil. Our argument is based on elements taken from the path dependence theory to explain the historical evolution of repos. In so doing, we argue that the inflation targeting regime adopted in 1999 creates a conflict of interests between the bondholders of interest-linked public liabilities and the taxpayers. This is explained by the fact that an increase in the interest rate increases the wealth of the former while generating welfare losses for the latter. Besides, the

existence of a large part of Brazil's public debt linked to interest rates (repos and LFTs) exposes the fiscal sector to major disturbances. Should the central bank decide to raise interest rates independently to meet the inflation target, it would be contributing to increasing the fragility of the fiscal position of the government. This dominance of monetary objectives over fiscal objectives is, in our view, the main reason for the adoption of fiscal austerity policies, as will be explained in the **third section** when discussing the negative externalities of the regime of monetary dominance over sovereign debt management.

3.1. Conceptualising Financialisation

The literature on financialisation, a varied set of economic, historical and political analyses with different theoretical backgrounds, seeks to understand the capacity of contemporary finance to dictate the rhythm and mode of organization of societies, the distribution of income and its effects on the governance of sovereign states. It recognizes that, in specific historical contexts, finance would have assumed an assisting role for production, especially in the formation of the major economies of the 20th century. However, finance now appears as a force that dominates and subordinates the production and distribution of material wealth, acting in a logic that goes beyond the mere intermediation of funds. Although not all contributions use this term explicitly, 'financialisation' describes a particular set of trends, associated with a process in which the financial motives overlap the productive logic in the economic process. Several important contributions to this strand of the political economy literature have argued that changes in the financial sector have been amongst the driving forces of structural transformations on the policymaking process, as well as the nature of the state markedly since the late 1970s. In particular, a large literature going back to Polanyi (1944) and Minsky (1986) discusses the role of self-regulation markets and the modern state, which came to be the backbone of the recent contributions on financialisation.

Gerald Epstein offered the broad definition mainly cited by the tenants of financialisation. According to him, 'financialisation means the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies' (Epstein, 2005: p.3). This definition encompasses the different levels of financialisation, its main causes, some of the impacts on growth and income distribution, as well as some normative measures to maintain its positive aspects and mitigate its negative externalities. This definition set the basis for a series of studies on the structural changes observed worldwide that have occurred as a result of the growing role of finance. The vast empirical evidence about the financialisation of the American economy provided by Krippner (2005) confirms this structural shift. According to her, financialisation is a 'pattern of accumulation in which profit-making occurs increasingly

through financial channels rather than through trade and commodity production' (Krippner, 2005: p.174), which importance has not ceased to grow from 1960 onwards:

In the 1950s and 1960s, financial sector profits ranged between approximately 10 and 15 per cent of total profits in the U.S. economy. In the period since the mid-1980s, financial sector profits have accounted for approximately 30 per cent of total profits in the U.S. economy, with this figure rocketing up to exceed 40 per cent as the business cycle peaked in 2001. Although the growth of financial sector profits suggests a dramatic transformation in the structure of the U.S. economy, this measure by itself represents a conservative estimate of financialisation because it does not account for excess compensation occurring in the financial sector (Krippner, 2011: p.28).

Palley (2007) highlights that this situation potentially makes the economic cycle generated by financialisation unstable and could lead to prolonged stagnation. The main strength of his argument is the causality of stagnation, as it is a consequence of financialisation and not the opposite. Godechot (2016) and Lin and Tomaskovic-Devey (2013) argue that factors such as stagnating wages and rising income inequality are largely due to changes introduced by the expansion of the financial sector. The new economic cycle dominated by financial gains leads the entire economic system to greater volatility. This is the reason why Palley (2007: p. 8) argue that 'financialisation can make the economy more prone to deflation and prolonged recession'. This conclusion echoes earlier calls from Kindleberger and Aliber (2005) and their argument that a prolonged and deep stagnation may emerge at the burst of a financial bubble, i.e., with the emptying of a period of rapid financialisation. They suggest, for instance, that this raise of financial motives are at the basis of the bursting of the Japanese real estate bubble in 1990.

Often assumed to be an element of globalisation and neoliberalism, the financialisation of the world economy has specific features. According to Vercelli (2013), the inroads of financialisation in the framework of financial globalization have occurred via the high increase of credit for consumption and the deregulation of the financial sector. Hence, financialisation would imply an exponential increase in the valuation of financial products and services at the expense of over-indebtedness of companies, households and government. Among the main implications of this phenomenon, he enumerates the important growth in the debt burden, causing large portions of savings to be diverted to the financial sector which, in turn, would negatively affect the flow of investments to the productive sector. Karwowski e Stockhammer (2017) identify six features of financialisation in developing and emerging economies, among which we highlight the liberalization of capital and financial accounts, the integration of these economies with the global financial market, and the increase in the level of indebtedness of non-financial companies (NFCs). The authors also point

out the fall in investment spending by NFCs, which tends to depress the long-term growth rate of GDP⁶⁰.

Van der Zwan (2014) provided a typology for the study of financialisation that better organised the different contributions to the topic. Her categorisation stems from three different theoretical approaches: (1) financialisation as a ‘regime of accumulation,’ focusing on the consolidation of a pattern of financial accumulation, in which finance assumes a dominant role in the economic system; (2) financialisation as an expression of the management strategy of the non-financial corporation (NFC), which has the ‘maximization of shareholder value’ as the main goal; and (3) the ‘financialisation of everyday life’ that refers to changes in the behaviour of individuals caused by the expansion of consumer credit and the diffusion of the financial logic, in which workers - and families – are increasingly involved with financial products and services. These three approaches indicate the structural transformations in society as well as in the role of the State resulting from the process of financialisation, in which ‘Finance has become a decentralized form of power in this body of work, exercised through individuals’ own interactions with new financial technologies and systems of financial knowledge’ (van der Zwan, 2014; p. 102). The rhetoric supporting more efficient financial management and a greater quest for risk also played an important role in shaping this new rationale. Risk, by itself, becomes a motivating force - and often necessary - for entering financial markets in a search for protection against the occurrence of unemployment, health problems, or a retirement pension. The weakening of social security networks ends up forcing former beneficiaries to turn to social providers in the private market, as a way to replace previously existing rights, or, because of their precariousness and insufficiency, to complement these fundamental rights.

Although very wide-ranging, the taxonomy proposed by van der Zwan (2014) shows some limitations in describing the role of the State in the process of financialisation. Karwowski and Centurion-Vicêncio (2018: p. 3) suggested a definition on the Financialisation of the State, which can be understood as “the changed relationship between the state, understood as sovereign with duties and accountable towards its citizens, and financial markets and practices, in ways that can diminish those duties and reduce accountability.” The authors indicate a transformation in the nature of the State associated with the pervasion of the financial logic in the policymaking process. The increasing influence of financial institutions and financial elites on the outcome of economic policy has been constraining the policy space of the government and have transformed the nature

⁶⁰ The other three defining features of financialisation identified by Karwowski e Stockhammer (2017) are: (1) Financial deregulation, (2) the shift from a bank-based to a market-based financial system, and (3) the increased involvement of households in finance, e.g. strongly rising indebtedness of individuals, characterises household financialisation.

and the *modus operandi* of the State. Lagna (2016) places at the heart of this process the alliance formed by pro-markets technocrats and neoliberal reformists politicians for the market-oriented ‘modernisation’ of the State. This market-orientation of the government in the conduct of public policy was analysed by Datz (2008: p. 35), who asserts that the state “is undergoing a process of further hybridization, applying private methodologies to serve public goals (however politically insulated) and engaging as both a supplier and consumer of financial innovation in more aggressive ways”.

This process is interpreted by Wang (2015) as a shift towards the ‘shareholding state’, in which the financial logic has become the norm for the economic management of the State. The role of the State and the private shareholders are very similar under financialisation, with the government prioritising a set of financial goals, instead of the fiscal ones, for the conduct of macroeconomic policies. This finding is consistent with the theoretical analysis carried out by Davies and Walsh (2016), who suggest that the UK state became an active participant in the process of financialisation in Britain. They investigated the institutional mechanisms that promoted the financial logic to the centre of macroeconomic policies in the country. Their findings reveal a strategy deliberated by the government to rebalance the power relation between the Treasury and the Department of Trade and Industry (with the former gaining greater influence over the latter) as the main reason for the financialisation of the macroeconomic policy in the UK. As a consequence, a simultaneous process of financialisation and deindustrialisation has been observed in the UK since the arrival of the new Thatcher government of 1979:

The Treasury not only imposed severe cuts on the DTI [Department of Trade and Industry], but also determined what functions and personnel were to be cut. At the same time, Treasury-linked senior civil servants and ministers sympathetic to Treasury objectives were put in their place. Ultimately, the DTI was reshaped to reflect the priorities and normative beliefs that the Treasury held in relation to the UK economy. The DTI then aided steps to support the financial sector while also distancing itself from industry and, of equal significance, placed greater control of companies into the hands of the financial sector. Thus, the UK state, under both the Conservatives and New Labour, made a significant contribution to the financialisation of its own industrial base (Davies and Walsh, 2016: p. 4).

The financialisation of macroeconomic policies in the UK motivated Aalbers (2019: p. 2) to suggest the analysis of the financialisation of the State into two dimensions: i) The financialisation of the public sector (or welfare state), which stands for “government, public authorities, education, health care, social housing, and a range of other sectors becoming dominated by financial narratives, practices, and measurements”; And ii) the financialisation of public policy, which draws attention to “the financial industry’s concerns becoming increasingly privileged in the policy domain”. This perspective, to which we will focus on for the purposes of this chapter, defines the state as no

bystander of the financialisation of the economy, but as an important player in promoting financialisation through a combination of commodification, privatisation and deregulation measures. This first dimension is analysed by Dowling (2017), who provides a more detailed account on the financialisation of the welfare state analysing the effects of ‘social finance’ in Britain (also named ‘the invisible heart of Markets’ in allusion to Smith’s invisible hand). She finds that, on the one hand, the state accesses finance to achieve social policy goals, such as through the introduction of ‘social impact bonds’ as part of a current social turn to finance; on the other hand, her results also show that finance is using the state to accumulate financial profits by subordinating ‘social policy goals to a neo-liberal agenda that combines fiscal consolidation and austerity with efforts to curb welfare dependency and promote labour market activation policies’ (Dowling, 2017: p. 297).

This finding is consistent with the theoretical analysis of Lavinas (2017), who shows how financialisation reshaped the role of social policy in Brazil. After careful analysis of the composition of social spending, which compares cash transfers with direct investment in public welfare infrastructure, she highlights a distortion that is apparent in the universalization of credit mechanisms in the face of restrictions on expanding basic sanitation, access to health and quality education, housing and security established by the Social Security system in the 1988 Constitution. The government choice for monetary transfers and consumer credits have been replacing social investment in health, education, and social security services. Her findings indicate the financialisation of social policies in Brazil as a consequence of the economic growth model adopted by the government since 2004 – a “convention for growth based on mass consumption” – rather than a model of growth based on the principle of redistribution.

Other important contributions in the literature of the financialisation of social policy include Zahluth Bastos (2013), Eaton et al. (2016) and Engelen et al. (2014) for education; Hunter and Murray (2019), Seddon and Curie (2017), Mulligan (2016) and Cordilha and Lavinas (2018) for healthcare; Schelkle (2019), Bonizzi and Churchill (2017) and Hassel *et al.* (2019) for pension provision. The overall message of these contributions is that the macroeconomic effects of financialisation on social policies are profound, although not often clear. The economic empowerment of private service providers that competes with the public social provision, through commodification and privatisation, have increased the political capacity of the financial sector to delineate the scope and composition of social policies, as well as to legitimise these new configurations in other macroeconomic policies.

This new configuration also relates to the financialisation of public policy, which represents the second area of investigation on the State level. This approach makes it possible to identify not the financialisation *by* public policies, but the financialisation *of* public policies, i.e., the penetration of the financial rationale and forms of evaluation into the formulation and implementation of macroeconomic policies. The study of the financialisation of public policies, therefore, raises concerns about the ways to which the state finances its operations in order to understand the structure and effectiveness of public spending. As Karwowski (2019) highlights, the way public revenue is raised directly impacts how public expenditure is shaped, and macroeconomic policies are designed. In financialised economies, it means that financial logic has also spread to the different domains of the public sphere, such as public finance and debt.

By defining financialisation as the opportunity for investors to trade in government bond markets in peripheral countries, Hardie (2011) addresses the question of how the intensification of financialisation strengthens or diminishes the ability of governments to borrow. According to him, ‘the more (less) financialized an emerging government bond market, the lower (higher) the capacity of governments to borrow on a sustainable basis. In emerging economies, financialised markets are debt intolerant (Hardie 2011: p. 142). In other words, the capacity of investors to reward or punish the government for policy decisions directly through the cost and availability financing has been reshaping the government’s autonomy to set fiscal goals and define the structure of sovereign debt. This is because the government is *forced* to engage in credible commitments to avoid important fluctuations of the risk premium on sovereign bonds. These commitments usually follow the neoliberal recipe for economic performance – the fiscal consolidation –, and then a set of structural reforms and institutional changes. The reforms, therefore, reassure bondholders about the credibility of macroeconomic policies. Which, in turn, will mitigate the risk of sudden stops of capital flow.

Streeck (2014) analyses this ‘exorbitant capacity’ of investors to exert discipline over the government as a distributional conflict between bondholders and taxpayers. The constant efforts to reduce deficit ratios to a level below the rate of growth impose a major trade-off for policymakers, who face the need to incur in unpopular measures, such as tax increases or cuts in social expenditures, to meet deficit targets expected by bondholders. Hence, the logic of downsizing, a very common business thinking of financial institutions, has now been transposed to sovereign debt management. This was the case for Germany, where Trampusch (2015) observed a shift from passive to active debt management between 1998 and 2006. The rise in endogenous pressure for institutional innovation has been crucial for the government to delegate sovereign debt management to separate Debt Management Offices and replace the traditional debt administration

to another one composed by professional portfolio managers from the financial market with individually negotiated salaries. The adoption of the financial logic, based on profit orientation, has not been without consequences for the overall policy mix, as Trampusch (2015: p. 32) summarises:

Among these consequences the most important are the disempowering of old organisations involved in issuing government bonds and debt management, the probable implications for parliamentary control over budget policies due to obscure deals on interest-rate and currency-rate swaps, the empowering of the financial market, governments' double role as regulators of banks and being one of their main clients and probable conflicts of interest between monetary policy, fiscal governance and debt management.

In the same vein, Fastenrath *et al.* (2017) demonstrate that the financialisation of sovereign debt management (SDM) is at the core of public finances in a subset of OECD countries. Two important transformations have accompanied the transformation of a non-financialised SDM into the one encompassed by the financial motives. The first transformation highlighted by the authors relates to the governance mechanisms of SDM, which are undergoing a transformation from a non-market (hierarchical) to a financial market (competitive) mechanism. While loans and long-term relationship mainly composed the former in the context of a highly regulated domestic environment, the selling of marketable debt instruments to primary dealers have been predominant in the globally deregulated and competitive environment that characterizes the latter. The second important change relates to the intellectual foundations of the sense-making framework for SDM. The role and management of public debt, traditionally based on the principles of classical macroeconomics, have been replaced by the principles of financial economics with a central role played by the portfolio theory⁶¹. Hence the passive administration, in which the central bank and the department of finances or treasury had the operational responsibility for debt management, have become obsolete. Table 3.1 highlights the main features of this transformation from a non-financialised to a financialised SDM.

The active management that predominates in the financialised SDM has become the accepted norm, with operational responsibility in the hands of specific and separate agencies, the use of complex financial instruments and the debt managers aiming at minimising debt service costs from a portfolio of liabilities, which is very similar to a private asset manager seeking to maximise returns to his/her portfolio. This argument is corroborated by their quantitative analysis pointing to an expressive increase in the share of marketable sovereign debt⁶² across the sample of 23 OECD

⁶¹ Portfolio theory was developed by Markowitz (1952). Markowitz's main contribution lies in the fact that his model explicitly includes the fundamental features of what could initially be described as rational investor behaviour, which consists of looking for the composition of the portfolio that maximises the return for a given level of risk or a minimum risk for a given return.

⁶² The OECD (1982: p. 12) states that "the share of marketable debt (MD) measures the degree to which debt managers are able 'to maintain the marketability of the government's debt instruments [which...] thereby ensures continued and broader access to financial markets'".

countries. During the period 1981-2010, the median of marketable debt issued by the government increased by more than one-third from 65 per cent to 90 per cent. Special attention should be given to the case of Spain – a country with recently reported debt sustainability issues. OECD data of the share of marketable debt in Spain shows an exponential increasing from 16 per cent in 1982, to record averages above 91 per cent since the late 1990s.

Table 3.1 | Characteristics of financialised and non-financialised SDM

Characteristics	Non-financialised SDM	Financialised SDM
Governance mechanism	Non-market (<i>hierarchical, network</i>) <ul style="list-style-type: none"> Interest rates on bonds were politically controlled and determined; captive sources of financing; debt monetisation Financing decisions based on short-term expediency within a highly regulated domestic environment Predominantly loans and long-term relationship financing 	Financial market (<i>competitive</i>) <ul style="list-style-type: none"> Predominantly marketable debt instruments sold to privileged primary dealers (<i>Indicators: MD, PDS</i>) Interest rates on bonds are market-determined by auctions, thus subject to supply and demand (<i>Indicator: Auctions</i>) Sovereign refinancing as a tool to develop financial markets and broaden the investor base in a globally deregulated and competitive environment. (<i>Indicators: MDNR, MDFC, ILBs</i>)
Sense-making framework	Macroeconomics → <i>passive administration</i> <ul style="list-style-type: none"> Operational responsibility in the hands of central banks and civil servants inside Departments of Finance or Treasuries Limited toolkit of instruments at use Traditional public sector form of cash-based accounting 	Financial economics → <i>active management</i> <ul style="list-style-type: none"> Operational responsibility in the hands of specific and separate agencies (DMOs). (<i>Indicator: DMOs</i>) Use of complex financial innovations like derivatives, which allow for separating issuance from portfolio decisions. (<i>Indicator: Swaps</i>) Modern private sector form of accruals accounting. (<i>Indicator: Accruals Accounting</i>)

Source: Fastenrath et al. (2017: p. 4)

Masso (2016) provides important insight into this exponential rise of marketable debt and the main consequences for the fiscal fragility of the Spanish economy. Her analysis points to a causal relationship between the financialisation of the government debt market (fostered by its institutional arrangements designed to provide liquidity, Asset Protection Schemes or the Deposit Guarantee Fund) and the financialisation of the investor (which is motivated to design risky strategies based on the guarantees offered by the government). The fragility of this relationship was exposed during the 2007 global financial crisis: An unsustainable economic model relying on private over-indebtedness that represented 587 per cent of the Spanish GDP in 2006. From 2007 onwards the government, aiming to afford the increasing deficit levels and rescue the private sector, in order to support the demand for the Spanish sovereign bonds, found itself in a ‘self-fulfilling trap’ with the debt to GDP ratio rising from 38 per cent in 2006 to 93 per cent in 2013. The Spanish case shows an important conflict of interests that is the result of the financialisation of public policy: the role of governments as prominent financial market actors and market regulators.

This issue is all the more important in the context of the accelerated rise of financialisation observed in the emerging economies (Bonizzi, 2013). The exposure to exchange risks, sudden stop, strong

dependence on commodity exports and the institutional weakness of these economies are some of the reasons for governments to raise concerns about the expansion of the financial logic into policymaking. The author raises concerns about the financialisation of emerging economies and the resilience of this group of countries to absorb external shocks without incurring in high social costs. An important factor in the financialisation of public policies in emerging economies stems from the degree of sophistication and openness of the financial system in these economies.

In this regard, the Brazilian case is very illustrative of the views advanced by the financialisation of the state. The high level of financialisation within the Brazilian economy pointed out by several scholars working on the topic (e.g. Bin, 2016; Bruno and Caffé, 2015; Hudson, 2010), have shown important similarities with the major trends of financialisation observed in the advanced economies (although a set of particularities is yet to be explored). Among those, we argue here that financialisation in Brazil has assumed a specific feature based on monetary dominance instead of *horizontal* coordination. This situation in which the goals of the central bank dominates those of the fiscal authority is observed in Brazil through the extensive use of repurchase agreements for monetary purposes – and other public debt liabilities indexed to the overnight interest rate – which has been constraining the policy space of the fiscal authority. The issuance of interest-indexed public debt for monetary purposes have been raising concerns about the loss of autonomy in the use of the fiscal policy as an instrument for social development and investment on infrastructure.

Kregel (2010) describes this process of loss of autonomy as a particularly vicious circle, given the historically high levels of domestic interest rates. When financial liberalization takes place, there is a high probability for the interest differential to be maintained positive in order to attract foreign capital. On the one hand, the flow of capital in emerging countries follows the financial cycle of developed economies. Excess capital inflows cause the exchange rate to appreciate and the government deficit to increase as a result of sterilization operations (such as repo operations in Brazil, which remuneration is benchmarked at the short-term interest rate targeted by the central bank). The scarcity of international liquidity, on the other hand, leads the economy to adjust the interest rate upwards, putting pressure on the exchange rate. In this context, the author emphasizes that the only available option at the disposal of the government is to engage in budget cuts. A contraction in government spending, combined with high interest rates, implies that domestic demand will remain at a low level, which negatively affects the growth rate and the sustainability of public debt. Hence, fiscal pressure originates from the indexation of sovereign liabilities in Brazil due to the attractiveness of a sovereign bond (risk-free asset) benchmarked by the seventh-highest interest rate (6 per cent) among the 38 major central banks in the world (BIS, 2019).

According to Oliveira and Carvalho (2010), this double feature of the indexed financial debt in Brazil (risk-free and high returns) has made the profit rate of those securities the benchmark for return on productive investments. It, therefore, contributed to a ‘pro-cyclical’ sovereign debt management, anchoring to the expectations of agents about future movements of the interest rate announced by the monetary authority. As they describe:

The financial indexation represented by Treasury securities and the central bank’s liabilities [repo operations] pegged to the interest rate minimizes the positive effects of the policy of fiscal surpluses on the indebtedness of the Brazilian public sector. It is therefore difficult to actively manage the public debt, understood here as one capable of minimizing the costs of financing the public sector and, at the same time, enhances the efficiency of monetary policy (Oliveira and Carvalho, 2010: p.8).

With this background information in place, we can proceed to the analysis of the forces behind the mechanism of financial indexation (proper to the repos), and how it affects the fiscal position of the government. We will then use the political economy framework of analysis to investigate the political causes and the economic consequences of this process of financialisation in Brazil.

3.2. What is the financialisation of monetary policy?

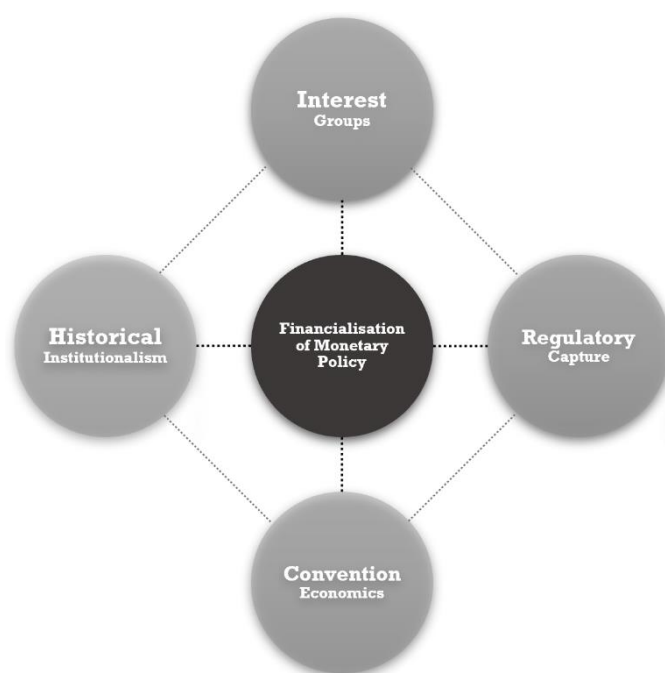
The theoretical foundations of the financialisation of monetary policy stem from the literature on interest groups, convention economics, regulatory capture and historical institutionalism. The study of the logic of collective action provides us with an understanding of the influence of interest groups on monetary decisions. Olson’s (1965) definition of small groups encompasses here the term’s meaning. These groups, organised and well-coordinated, have sufficient bargaining strength to influence monetary decisions and resource distribution. Our definition of financialisation of monetary policy focuses on the financial interest groups (bondholders).

The findings on the dynamics of expectations coordination provided by convention economics, help us to understand the nature of the financialisation of monetary policy. It stems from the operation of financial interest groups alongside the epistemic authorities of finances for the spread of the convention on the practical aspects of monetary dominance: Inflation targeting and central bank independence. Orlean’s (1994) contribution provides meaningful insights into the overlap of financial and social logic in public policy. The analytical elements from the institutionalism literature (explored in the following section on the historical evolution of repos), allows a better understanding of monetary decisions in their historical context. This contextualization is crucial, provided that many past and present central bank choices result from path dependence. The contributions of North (1990) and David (1985) are paramount to the identification of critical

juncture moments, and the degree of institutionalisation of monetary policy finance. Both of them are necessities for the prospects of rupture with path-dependent practices.

The last inspiration for this financialisation approach is found in the theory of regulatory capture. According to this theory, there is capture when the government agency (or public authority) becomes an instrument to serve and legitimise the private interests of the regulated segments. The merit of Stigler's (1971) contribution derives from the identification of the groups benefiting from the capture and those bearing the burden of the policy favours that follows. Additionally, it helps to understand the effects of capture on resource allocation. The financialisation of monetary policy, therefore, results from the transposal of the logic of 'capture' of regulatory agencies into the realm of monetary choices. Figure 3.1 summarises the contribution of these four branches:

Figura 3.1 | Theoretical foundation of financialisation of monetary policy



Source: Own elaboration.

Based on the analytical elements provided by these four branches of knowledge, we argue that the financialisation of monetary policy corresponds to a historical process of central bank capture by financial interest groups, legitimised by the convention on monetary dominance, intending to maximise private profits at the expense of collective losses. These losses are, for the government, accounted for in terms of reduced policy space and fiscal fragility. These losses are, for the government, reflected in the reduction in policy space and fiscal fragility; and for the taxpayers, it is due to the erosion of the welfare state as a result of fiscal austerity measures to finance the debt expenses.

The financialisation of monetary policy is at the very core of the political economy of fiscal and monetary interactions. Crucially, this framework is not static and narrow-focused. It offers a broader view of the economic forces operating alongside monetary choices, and the negative externalities that follow. It suggests that other aspects of political economy and financial interests should be added to the analysis of central bank functioning, as suggested by Epstein (1992; 2001). From this perspective, interest rates assume a fundamental role in the financialisation of monetary policy. Interest rate accounts for a specific form of ‘group struggle’ stemming from the choice of its optimal level. Because a large part of the profit or income of commercial banks, pension funds, or any other holder of large amounts of money for speculative purposes depends on this choice.

Hence, in addition to the claims on low inflation, to preserve their net wealth, the reason for financial interest groups to pressure central bank choices are twofold. Either, i) for the maintenance of high nominal interest rates. This would ensure the return on operations carried out with public securities indexed to interest rates; or ii) if the monetary authority decides to lower the interest rate, the bondholders can coordinate for demanding compensation. Specifically, the decrease in the interest rate, which means lower return, would be compensated by a larger holding of government securities by commercial banks operating in the open market. The rationale of this ‘compensation’ follows our analysis of the extensive use of repos for monetary purposes. The introduction of these political economy aspects provides our argument of the financialisation of monetary policy theoretical substance to challenge three of the main pillars of the mainstream understanding of central banking.

First, the financialisation of monetary policy challenges the hypothesis of central bank impartiality. In many countries, the general perception tends to see the central bank as a pure technical institution whose independence would be not only desirable but also strictly necessary. Thus, the complex monetary choices could be managed with non-discretionary rules, impartiality and technical accuracy. However, monetary decisions, as well as fiscal policy decisions, are not impartial. Both decisions generate winners and losers (Modenesi and Modenesi, 2012). Thus, the conduct of monetary policy is of interest to the various groups within society, corresponding to various conflicting interests, with the various groups interested in defending their positions. When we analyse monetary decisions through the lens of the financialisation theory, we assume that financial interest groups, the holders of money, are at an advantage in this correlation of forces. They have greater bargaining strength to consolidate a pro-monetary convention that suits their interests the best. In the Brazilian case, specifically, commercial banks, besides being the holders of money, form an oligopoly, which leaves these institutions in a position of even more privilege in the process of accumulating wealth and influencing monetary decisions. As they hold great

political and economic strength, the interests of this group outweigh those of the taxpayers. In the lenses of Orléan (1994), it means that the financial interest groups have the power to shape the general perception into a held belief that central bank independence, inflation targeting and fiscal authority measures represent the ‘general interest’.

Second, the financialisation of monetary policy sheds light on some of the inefficiencies associated with central bank independence. Precisely, we contend that the further the central bank decisions are from public scrutiny, the higher the probability of discretionary monetary choices. The higher this discretion in the choice of monetary instruments, the higher the probability of central bank capture by organised financial interests. We know from Olson (1965) that the weak organizational capacity of the large group of taxpayers stands in contrast to that of the small financial interest groups. Thus, even though taxpayers might prefer a less restrictive, inflation-tolerant monetary policy in order to achieve full employment and a better distribution of income, they would lack the bargaining strength to counteract the influence of the bondholders. The latter would be more inclined to support a non-inflationary and anti-cyclical monetary policy in times of recession in order to preserve the net value of their assets. We can consider the case of a long-lasting restrictive, independent, and financialised monetary policy (with high nominal interest rates) to illustrate our argument. This, consequently, results in fiscal imbalances mainly driven by debt interest expenditure. In this case, the debt to GDP ratio tends to increase, unless there are increasing primary surpluses or GDP growth rates that are higher than net debt growth, which is virtually impossible under a restrictive monetary policy. In this case, it becomes necessary to think of policy coordination outside of the scope of vertical coordination, i.e., beyond both fiscally and monetary dominant-coordination schemes; Nor in terms of fiscal or monetary independence. Conversely, we suggest that horizontal coordination stands as an alternative option for achieving stability and growth, as well as for mitigating the risk of financialisation of monetary policy.

Finally, the financialisation of monetary policy highlights the limits of inflation targeting. Although similar and not mutually exclusive, the incentives to the capture of the central bank are different, whether related to its independence or inflation targeting. This latter sends a strong signal to the market about the central bank capacity to manage aggregate demand via interest rates, and the strength of its commitment to fight inflation. Credibility and confidence are crucial for the bondholders to cooperate with the goal of the monetary authority, adjusting their expectations and reducing their prices. Lower uncertainty about the future stance of monetary policy, therefore, alleviate inflationary pressures. On the other hand, the commercial banks, creators of endogenous money, have the capacity to expand borrowers’ purchasing power, that is, they have the power to stimulate aggregate demand. So, we deduce that central bank credibility depends inexorably on the

behaviour of commercial banks. For these financial institutions ultimately have the power to influence aggregate demand to a great extent. And it is precisely in the control of this very same demand that lies, first and foremost, the core of monetary policy under inflation targeting. Against this background, the central bank's regulatory capacity is limited by the bargaining strength of these financial institutions and the oligopolistic structure of the interbank market. As a consequence, commercial banks have incentives to coordinate and take advantage of these limitations for engaging in risky operations and for using the central bank's power to create money for monetising their excess reserves. This is the process of monetary policy capture by the banking system. As we mentioned in the previous chapter, this capture process represents a variant of Minsky's (1982) credibility paradox.

This paradox drives forward the financialisation of monetary policy. This is because, under inflation targeting, banks anticipate in their investment decisions: i) the inflation targeted, ii) that price instability is understood as arising from demand shocks, iii) that the primary objective of monetary policy is price stability, iv) what is the central bank time frame for it to be attained, v) that, ultimately, the interest rate stands alone in the conduction of monetary policy; and, above all, vii) by the very nature of their business, the commercial bankers know that they can create endogenous money to meet the demand for liquidity and, thus, to also manage aggregate demand.

If the monetary policy reaction is to manage the demand, it is not the central bank but the banking system that defines the price at which this management is to be carried out. For it has enormous power to define the size and magnitude of aggregate demand. In this regard, although it may sound paradoxical, under inflation targeting the more the banks renounce their liquidity preference, the more intense the central bank's reaction should be, meaning that it should set higher interest rates to control credit supply. Under inflation targeting, therefore, there is a high probability of capture of monetary authority by the banks, which use the narrow focus of Central Bank in targeting inflation as a way to reduce their uncertainties about which decisions to make in order to monetise their excess reserves.

It is worth mentioning that this conclusion put forward by our argument of the financialisation of monetary policy is similar to Sargent and Wallace's (1981). Under monetary dominance, the problem of the central bank's use for asset monetisation remains unsolved after all. The difference though arises from the agents at the origin of this improper use of the monetary authority. This selfish pursuit of profit maximisation, harmful to the overall macroeconomic stability, is all the more worrisome under the auspices of an independent central bank.

3.3 How does the financialisation of monetary policy operates in Brazil?

For many years, mainstream analysis of economic policy has been proceeding along with the implicit assumption that the policy-making process follows the precepts of a ‘general linear reality’ (Abbott, 1988). That is, “policy causes and effects could be ascertained empirically and that a general set of social forces drove policy-making, with individual deviations from deterministic outcomes existing as ‘noise’ or random error” (Howlett and Rayner, 2006: p. 1). A large number of mainstream economists, therefore, assume the utilitarian mechanisms of cost-benefit as the main factor for institutional reproduction in the presence of increasing returns. Policy decisions are the consequence of stochastic processes, in which results are determined by the combination of an underlying set of independent variables with certain kinds of quantifiable parameters. In this picture of a ‘general linear model’, there is an implicit notion that the historical evolution of formal and informal institutions, as well as the influence of interest groups over the policy process, has little or no significance at all.

The theory of path dependence challenges this view. North (1990), David (2007) and Pierson (2004) count among those having enriched the study of institutional reproduction and macroeconomic stability by identifying supplementary mechanisms (e.g. power, group interests or legitimation) that can perpetuate the process of institutional reproduction. Their findings point to situations in which institutional reproduction can be subject to irrational choices and, hence, would produce sub-optimal outcomes over time. While path dependence offers important insights on the mechanisms at the origin of institutional perpetuation in the presence of economic inefficiencies, the notion of *convention* provides a political economy explanation on the forces behind these inefficient choices. As will be discussed in this section, these two strands of literature combined offer a wider view of the process of financialisation of the Brazilian monetary policy. We illustrate this process with the historical evolution of repos for monetary purpose in Brazil. The main purpose of this original approach is to call for a re-think of the effectiveness of fiscal and monetary interactions in Brazil, as discussions about “alternative mechanisms suggest different ways in which patterns marked by path dependence might be reversed” (Mahoney, 2000: p. 509).

3.3.1. Some considerations on path dependence and the critical juncture

The theory of path dependence explains why institutions can change less than expected, and what would be the negative implications for economic growth and development. The distinct feature of path dependence is that sub-optimal institutions and practices can perpetuate over time despite the availability of more efficient alternatives. The persistence of sub-optimal institutions stems from

economic and behavioural reasons (e.g. interest group coalition, high transaction costs, change aversion, among others). The theory identifies the occurrence of a contingent event in a given moment (*critical juncture*), causing an entity (a country, an institution, an organization, etc.) to take a particular pattern or form. And then, by a series of self-reinforcing mechanisms, the conditions are in place for that institution to be reproduced or to remain in that same direction in the future. This notion is central to the historical neo-institutionalist approach, which seeks to restore the State to the forefront of the public initiative, through a better understanding of the path dependence of public policies (Evans, Rueschemeyer and Skocpol, 1985; Merrien, 1990).

Two leading figures in the path dependence literature, Paul David⁶³ and Brian Arthur explain how small and seemingly remote events can generate potential inefficiency and non-predictable outcomes, with a tendency for some path-dependent processes to ‘lock-in’ future developments. The choice for the QWERTY keyboard was used by David (1985) to illustrate how economic choices can be driven by motivations other than the rational ones in the scope of a ‘perfect market’. He shows that small contingent events are at the origin of the QWERTY keyboard to become the standard disposition of keys, even though the DVORAK keyboard proved to be more efficient. When the first typewriters were designed in the 19th century, issues related to type bar stuck were reported by many users. This problem made the same letter to be typed repeatedly without being noticed. The solution found for the type bar problem was presented by Christopher Scholes and consisted in the reorganisation of the typewriter keys in a QWERTY sequence. This new organisation was expected to mitigate the problem, as the keys identified to be the triggers of the type bar stuck issue were placed at the opposite ends of the typewriters. The typewriter manufacturers rapidly standardised this elegant solution at that time.

Over the years, more efficient models of typewriters (without the type bar problem) have become available, but the QWERTY model had already become the benchmark in the market for typewriters. The explanation for the less efficient choice to perpetuate over time can be found in two different perspectives. From the perspective of the producer, the existence of increasing returns whereby gains in market share produced a decrease in marginal costs of producing additional units, as fixed costs were spread over a larger number of units. From the customer’s point of view, the continuous use of the QWERTY keyboard caused the user’s efficiency to

⁶³ David (1985: p. 332) offers the following definition of path dependence: “A path-dependent sequence of economic changes is one of which important influences upon the eventual outcome can be exerted by temporally remote events, including happen-stance dominated by chance elements rather than systematic forces. Stochastic processes like that do not converge automatically to a fixed-point distribution of outcomes, and are called non-ergodic. In such circumstances « historical accidents » can neither be ignored, nor neatly quarantined for the purpose of economic analysis; the dynamic process itself takes on an essentially historical character”.

increase and simultaneously raised the transition costs to a new configuration. Mahoney (2000: p. 515) summarise this point as follows:

To argue that the QWERTY typewriter keyboard design prevailed over the alternative DVORAK design even though it was the less efficient format, one must assume that the neoclassical paradigm cannot explain why QWERTY accumulated an early advantage. In other words, the causal factors that initially favoured QWERTY must be outside the dominant neoclassical paradigm, otherwise the more efficient Dvorak keyboard format would have been selected from the beginning as predicted by neoclassical theory. In fact, the QWERTY example has been called into question precisely because some analysts believe QWERTY was the more efficient format all along.

The literature on path dependence highlights many other reasons to explain the reasons for this situation to occur. Routine process, gains from coordination and adaptative expectations count among the most-cited examples that explain how and why sub-optimal choices can persist over time. These effects are amplified by what Mahoney (2000) called actors' intersubjective orientations and beliefs about what is considered appropriate or morally correct. In this type of explanation, the reproduction of an institution or policy occurs because the actors consider the institution or policy to be legitimate and, thus, voluntarily decide for its continuity:

[I]nstitutional reproduction is grounded in actors' subjective orientations and beliefs about what is appropriate or morally correct [...] beliefs in the legitimacy of an institution may range from active moral approval to passive acquiescence in the face of the status quo" (*ibid*, p. 519).

For North (1990), mental models and belief systems are the outcomes of inter-generational cultural transmission, which vary according to specific ethnic groups or societies and respond to specific interests. This makes institutions restrictive and thus not created to be socially efficient, but to serve the interests of those having a high bargaining power to create new rules. As such, the direction and intensity of change are dependent on the mental models of the most influential groups in society. Such models play a determining role for an institution to pursue path dependence, which according to the author "the economies of scope, complementarities, and network externalities of an institutional matrix make institutional change overwhelmingly incremental and path-dependent." (North, 2005: p. 12). Those are the three fundamental reasons that explain the interest of individuals and organizations with bargaining power in perpetuating the institutional environment. The argument advanced by North connects to the ideas on path dependence presented by Levi (1997) and Pierson (2004), which are of great practical significance to explain the contingent events leading up to the financialisation of monetary policy in Brazil. Their major contribution was to have transposed the notion of path dependence to the field of political economy, illuminating economic situations that may be well explained by the mechanisms of structural self-reinforcement. Levi (1997) identify high reversal costs as another main driver for

countries to be 'locked in' sub-optimal economic performances. Even in the presence of another most efficient options, the consolidation of a certain number of institutional structures will obstruct a straightforward move towards a most beneficial institutional arrangement. Pierson (2004: p. 27) draws on these findings to show that initial institutional design choices have long-term implications for long-term economic growth and political stability:

Once in place, institutions are hard to change, and they have a tremendous effect on the possibilities for generating sustained economic growth. Individuals and organizations adapt to existing institutions. If the institutional matrix creates incentives for piracy, [...], then people will invest in becoming good pirates. When institutions fail to provide incentives to be economically productive, there is unlikely to be much economic growth.

The path dependence literature highlights *positive feedbacks* as a central element for the perpetuation of sub-optimal economic policies. As long as those policies generate an incentive for the agents to stick with and not abandon existing institutions, adapting them only incrementally to minor changes at the economic and political environment, political institutions and public policies will be characterized by lock-ins or inertia. The author outlines four processes leading to path dependency via positive feedbacks: *a)* the central role of collective action (different types of collective action and forms of mobilization involve high investment costs that, in turn, generate incentives for actors to stay on the same path); *b)* the high density of institutions (institutional change or creation of new institutions would incur in high costs as a result of the specialization of agents in the already existing institutions); *c)* the use of political authority to enhance asymmetries of power (groups holding power and influence over the government can use it not only to reshape institutions and public policies but also to weaken their opponents through new institutional arrangements; and *d)* the intrinsic complexity and opacity of institutions (the agents are placed in a complex context with high opacity, so they have mind maps that filter information and incorporate only those that reinforce their worldview).

It is worthwhile noting that positive feedbacks may reflect constraints from below, as societal groups can adapt and develop vested interests in the perpetuation of specific public policies, or from above, in the form of legally binding rules that are costly or politically unfeasible for actors to change (Pollack and Shaffer, 2009). Hacker (2002: p. 55) clarify this relationship between positive feedbacks and the asymmetry of powers as follows:

Policy creates or encourages the creation of large scale organizations with substantial set-up costs; second, a policy directly or indirectly benefits sizable organized groups or constituencies; third, a policy embodies long-lived commitments upon which beneficiaries and those around them premise crucial life and organizational decisions; fourth, the institutions and expectations a policy creates are of necessity densely interwoven with the broader features of the economy and society, creating interlocking networks of complementary institutions; and fifth, features

of the environment within which a policy is formulated and implemented make it harder to recognize or respond to policy outcomes that are unanticipated or undesired.

Because of path dependence, unproductive paths can also persist, even in the presence of ‘rational’ agents. An initial situation, which provides disincentives to productive activity, will produce, as we have seen with the keyboard QWERTY, organizations with interests in maintaining this situation. This causes organizations to shape politics based on these interests. The expected outcome for the economy is policies that reinforce incentives for private or sectorial gains at the detriment of the general welfare.

Alongside the notion of positive feedbacks, the concept of critical juncture is also crucial to explain why and how economic policies are path-dependent. What should be underlined is that concept refers to a moment of crucial choices that produce self-reinforcing legacies, generally preceded by a period of economic crisis or political instability. Collier and Collier (1991) suggest that critical juncture stands for a period of significant change that occurs on a different basis between countries (or another unit of analysis), from the initially established paths that will have an important influence over the legacies of domestic policies. Mahoney (2000) argues that it is a crucial moment for any institution to evaluate past choices and inquire about the persistence on the path already followed or the take of a new path. In the case of a decision for a new path, the critical juncture will be followed by either revolutionary change or institutional reform.

The overall message of path dependence theory is, therefore, that *critical juncture* sets the path to a time-invariant institution to perpetuate through *positive feedbacks*. It, therefore, *lock-in* future developments with *self-reinforcing* mechanisms, even though those are a source of economic inefficiency. The historical institutional approach briefly presented here, provides a valuable framework for the study of the origin, evolution and perpetuity of the extensive use of repurchase agreements carried out for monetary purposes in Brazil. Those, as we are going to demonstrate in the next section, are the perpetuation of the mechanism of automatic clearing (*zeragem automatica*) introduced in 1979 under the context of high inflation in the country.

3.3.2. *The mechanism of automatic clearing: A critical juncture moment*

We argue here that the moment of a critical juncture for the monetary policy to turn into a path of financialisation in Brazil occurred in 1979. It was after the publication of memorandum 466 of 14 November 1979 by the Brazilian central bank, which gave the mechanism of *zeragem automatica* (automatic clearing) a central role on the management of short-term liquidity. Before proceeding to the analysis of this mechanism, it may be useful to highlight some central features of the

interbank lending market. In this market, commercial banks with excess reserves⁶⁴ at the end of the day face an opportunity cost if higher risk-adjusted interest can be earned by putting the funds elsewhere. Banks consistently seek to maintain most of their reserves that do not generate yields at the end of the day, as close as possible to the indispensable minimum regulatory required, avoiding deficiencies in their positions that may result in sanctions. In an efficient interbank lending market, banks in a shortage of funds and those with excess reserves are expected to mutually clear their positions at the end of the day. The well-functioning of this market is essential for monetary policy as it ensures that the central bank does not have to intervene permanently as a liquidity provider of last resort.

A practical example can be helpful to clarify a set of basic principles of this complex market. In our example, we assume a bank sector with only two commercial banks, MC and MB. Each bank has at their disposal two types of reserves, those available for commercial lending and the ones allocated for regulatory requirements (bank reserves). To simplify, we can also assume the inexistence of cash, a 10 per cent reserve requirements as the only reason for commercial banks to turn to the central bank, and that the two banks are different in their lending activities, but they are identical in other areas. The bank MC has large deposits and has low prospects of lending because the client base is predominately wealthy retired people who prefer to spend their money rather than borrow from the bank. On the contrary, the bank MB faces higher demands for corporate loans due to its location in a technology-intensive region. Therefore, the greater borrowing needs of MB bank is compensated by the lender capacity of the MC bank. The interbank lending market works efficiently, and the central bank does not need to play an active role because the amount of reserves is sufficient to meet the liquidity needs defined by the reserve requirements (see Table 3.2).

Table 3.2 | Interbank transactions motivated by different lending opportunities

Bank MC				Bank MB			
Bank reserves	10	Deposits	100	Bank reserves	10	Deposits	100
Lending	60			Lending	140	Loan from Bank MB	40
Claims on Bank MB	40	Capital	10			Capital	10

Now suppose that the bank MB runs out of bank reserves because the depositors of the bank MB are making payments to the bank MC. The MB bank decides to increase loans from the bank MC. The MB bank, therefore, transfers 20 deposits, transfers 10 to reserves and borrows 10:

⁶⁴ Excess reserves are those funds deposited at the Brazilian central bank that exceed the amounts required under bank safety and soundness regulations.

Table 3.3 | Bank MB is short of reserves due to its lending activities

Bank MC				Bank MB			
Bank reserves	20	Deposits	120	Bank reserves	0	Deposits	80
Lending	60			Lending	140	Loan from Bank MB	50
Claims on Bank MB	50	Capital	10			Capital	10

However, the MB bank now needs reserves to meet the minimum requirements. In this case, the interbank market transfers reserves between banks and rebalances liquidity needs between the banks.

Table 3.4 | The interbank market restores liquidity needs between banks

Bank MC				Bank MB			
Bank reserves	12	Deposits	120	Bank reserves	8	Deposits	80
Lending	60			Lending	140	Loan from Bank MB	58
Claims on Bank MB	58	Capital	10			Capital	10

It is noteworthy that, until this point, the amount of reserves (20), the currency (which corresponds to deposits in this cashless world) (200), and the overall amount lent to clients (200) remain unchanged. The liquidity needs of a given bank should not be compensated by new reserves created by the central bank. Normally, when the interbank market functions efficiently, a bank can also restore its liquidity by borrowing from a bank that has reserves above its obligations in this regard. Let us now consider a situation in which the Bank MC decides to stop lending to the Bank MB. The latter then borrow from the central bank's discount window and uses reserves to repay the interbank loan to the MC bank. It makes total reserves to increase from 20 to 78, and central bank borrowing replaces MB bank lending. However, the general level of lending (i.e. liquidity in the economy) and currency remain unchanged and will only increase if new lending opportunities emerge.

Table 3.5 | Central bank replaces the interbank market in restoring liquidity needs between banks

Bank MC				Bank MB			
Bank reserves	70	Deposits	120	Bank reserves	8	Deposits	80
Lending	60			Lending	140	Loan from Central Bank	58
		Capital	10			Capital	10

The occurrence of new lending opportunities is now a reality in our example. The MB bank grants a new loan to a customer who pays for goods to another MB bank customer. As the MC bank still refuses to lend to the MB bank, the central bank refinances the liquidity needs, which makes reserve requirements to increase from 8 to 10. Total reserves are now 80 and currency, and lending has increased from 200 to 220.

Table 3.6 | Central bank refinancing new liquidity needs

Bank MC				Bank MB			
Bank reserves	70	Deposits	120	Bank reserves	10	Deposits	100
Lending	60			Lending	160	Loan from Central Bank	60
		Capital	10			Capital	10

Goodfriend and King (1988) argue that a central bank should only accommodate shortfalls of commercial banks reserves under exceptional circumstances, as the market has better information about the creditworthiness of commercial banks than the central bank. Central bank interventions, if temporary, are signalling to market participants that any liquidity provision made outside of exceptional circumstances are going to be made at punitive rates. If not, in the case of constant interventions, the central bank will exacerbate the risk of moral hazard in the interbank lending market. This risk has been observed in Brazil since the implementation of the mechanism of automatic clearing (*zeragem automatica*) in 1979. With this mechanism, the central bank of Brazil has expanded its interventions on the interbank lending market through daily liquidity adjustments.

Selling and repurchases of public securities for monetary purposes have become more common as this practice influenced market expectations about daily liquidity provision for the banks facing difficulties to meet the reserve requirements. As liquidity adjustment of commercial banks through overnight operations with the central bank increased, the monetary authority also had more flexibility to set interest rate levels. Even though the central bank has constantly become *over* or *undersold*⁶⁵ (which, in turn, raises central bank demand for public securities for monetary purposes and, therefore, affects sovereign debt structure), this new mechanism has granted monetary authority a relative control over the overnight interest rate during the period of hyperinflation. With a more autonomously management of interest rates after the implementation of the

⁶⁵ In the jargon of the market, a central bank is said to be *oversold* after proceeding to the repurchase of public securities held by banks in shortage of funds, and it is *undersold* when the monetary authority intervenes in the market through the selling of public securities to drain excess liquidity.

mechanism of automatic clearing, lowering inflation pressures and debt service costs at a rate level high enough to prevent capital flights has become a major issue.

During this *critical juncture* (i.e. the implementation of automatic clearing mechanism), it is important noting the existence of contingent events leading the monetary policy to be *path-dependent* of short-term liquidity provision to commercial banks – not without structural consequences for the fiscal position of the Brazilian economy. Brazil count among the pioneers in the implementation of an automatic clearing system. There was only one case serving as the benchmark: The one implemented in the United States, where a similar network between the Federal Reserve's headquarters recorded interbank operations. Despite some undeniable similitudes, both systems differed in the accounting rules for the public liabilities used for monetary purposes. The system implemented in the United States presented a clear and rigid separation between public securities and bank reserves, with securities uniquely used as collateral for bank reserves to meet reserve requirements. While in the Brazilian system, public securities and bank reserves were registered in the same account. Consequently, both instruments have become almost perfect substitutes, with public securities reaching the status of *near money*. How was this possible? Two explanations are available in the literature. The first one is found in a statement made by the former governor of the central bank of Brazil, Carlos Brandão (1995: p. 16):

The IT programmers called to develop the mechanism at the time were unable to design a system that separates funds to be cleared from bank reserves. This impossibility persuaded financial actors and the central bank's Board of Directors to account the entire settlement as bank reserves.

According to this statement made by former president Brandão, the particularity of the automatic clearing mechanism is due to constraints imposed by very new technology and the technical limitations at that time. This situation is very similar to that faced by QWERTY typewriter producers enunciated by Paul David to explain how contingent events can lead to a situation of path dependence. The technical limitation of programmers in establishing two separate accounts (for reserves and clearing by securities transactions) joins the apparent indifference of the central bank and the private agents of the financial sector towards the indiscriminate use of public securities and bank reserves in the same account, resulting in a lock-in process that influenced decades of economic policy.

The second explanation lies in the fact that the mechanism implemented in 1979 may have been influenced by the National Monetary Council (CMN) Resolution No. 79 of 1967. In order to promote the sale of public securities, this resolution has also allowed public securities to account among the minimum amount of reserves that must be held by a commercial bank for regulatory

purposes. Hence, for the targeted overnight interest rate to be reached, the monetary authority started deploying *cartas de recompra* (in nowadays named *compromissadas*, repurchase agreements or repo) which, in turn, created incentives for commercial banks to reduce concerns about daily liquidity adjustment. For the institutions on a shortage of funds, there were fewer incentives to borrow from the central bank discount window at punitive rates. For the banks in excess reserves, it has become a profitable source of funding (as we have discussed in chapter 2). As bank reserves and public securities have suddenly reached similar levels in terms of remuneration, the demand curve for bank reserves become completely inelastic since reserves and government securities became perfect substitutes as a store of value (Barbosa-Filho, 2008).

It should be clear that the problem is by no means the technological innovation that has allowed the rapid transformation of non-interest-bearing reserves into government bonds or other financial instruments, such as repurchase agreements. This practice also operates between central banks and commercial banks in other jurisdictions (Lavoie, 2015). The question is whether or not the mechanism of automatic clearing (and, then, the extensive use of repos) creates incentives for moral hazard behaviour in the interbank lending market, through cheap liquidity provision for commercial banks. Hence, the possibility of a distorted use of this mechanism, causing fiscal pressures to increase should also not be neglected. The positive (and high) interest rates conferred by these repurchase operations, especially in the 1980s high inflation period, offered the possibility for commercial banks to monetise public liabilities in their portfolio. If the very short-term interest rates (overnight) were irrelevant, or even negative, the practice of automatic clearing would probably not create strong incentives for the agents – even the non-financial ones – to engage in repurchase agreements with the central bank.

There is a common understanding among economists in Brazil about the fact that this mechanism was an important measure to afford macroeconomic instability during the periods of high inflation and major fiscal balances. The downward trend in inflation rates experienced during the so-called economic miracle was reversed in 1974. Between 1974 and 1978, inflation, which remained close to 40 per cent a year, reached 77 per cent in 1979 and 110 per cent in 1980. The mechanism of automatic clearing was, therefore, a way for the government to support the demand for public bonds and finance the deficit while giving the central bank a relative autonomy over interest rate decisions. Under these exceptional circumstances, Mendonça de Barros (1993) observes that the automatic clearing mechanism was the best available option for the government to avoid the share of public liabilities in the portfolio of banks to fall.

Moreover, in this context of high uncertainty due to concerns about solvability and lack of trust in the Brazilian currency, some of the factors that usually avoid the system to be automatically cleared were expected to be potentiated, such as hoarding money and leakages on the system (mainly from variations in National Treasury resources held at the central bank). This issue was discussed by Madi (1993), who correlates the financing needs of the government in the very short-term to the development of financial innovations. According to her, the mechanism of automatic clearing was of primary importance for the strategy of the government to develop some *near-money* instruments. The public debt would continue to be rolled over in the presence of these instruments, as well as the demand for liquidity coming from the interbank market in the context of high macroeconomic instability.

However, this mechanism, conceived to meet specific functions during the period of hyperinflation, has perpetuated over time. Once the overnight rate became the main target, the role of the monetary base was downgraded to an adjustable variable with the central bank having only indirect influence over it. Hence, the automatic provision of cheap liquidity to the banking system, have made open market operations passive in the very short-term, with the *initiative* of liquidity management being lost by the central bank as it was compelled to be *oversold* to clear the positions of private banks. Paula and Sobreira (1996: p.123) provide a clear description of this situation as follows:

In such circumstances, banks' primary reserves tended to remain at the minimum level necessary to meet the compulsory requirements. As the voluntary reserves of the banking system - surplus resources over the compulsory collection that functions as a primary source for accommodating the banks' liquidity fluctuations - were also reduced, the banks' liquidity adjustment occurred at the level of their secondary reserves (highly liquid bonds and holdings), with all the pressure on the central bank, which the financial institutions would "compel" to provide liquidity to the public bonds in their portfolios. In this context, large fluctuations in bank reserves would cause the interest rate to be destroyed as a goal of monetary policy.

Yet the use of this mechanism during the period of hyperinflation is explained by reasonable arguments, the reasons for automatic clearing to persist despite the macroeconomic stabilization achieved after the Real Plan of 1994 still remains an open question⁶⁶. There is no easy answer to this problem, but beneficial financial and economic policies from the central bank are the first line of thought. After becoming political and economically strong enough to materialise moral hazard risks in the mid-1970s, major banking institutions widespread the 'too big to (let) fail' problem

⁶⁶ In the literature on the mechanism of automatic clearing, it is possible to distinguish two different perceptions about the use of this mechanism. The first one defends it should be extinguished, due to concerns about a passive money supply. (Brandão 1989a; 1989b; Pastore, 1991). In contrast, Carvalho (1993) and Ramalho (1995) disagree with the correlation between monetary passivity and automatic clearing. At the same time that this mechanism allowed the central bank of Brazil to act almost always oversold, it had the advantage of being able to set the desired daily interest rate, thus achieving monetary policy objectives more easily.

within the Brazilian financial sector. The mere possibility of moral hazard risk had turned into a real situation when two important rescue operations were carried out by the Brazilian central bank during this period⁶⁷. A determinant feature in the discussions about the length of monetary authority's interventions once a moral hazard becomes a real concern is that a decision to increase central bank interest rates to control inflation or to make domestic financial gains attractive to foreign capital, also means a more expensive raising of funds for banks to maintain their daily banking activities.

There are obvious dangers for the overall stability of the financial market in restraining the use of automatic clearing only to exceptional circumstances. However, the costs of extensive liquidity provision schemes accommodated by the fiscal authority should also be acknowledged in the debate about financial stability, and the limits of central bank open market operations. The rescue operations carried out in Brazil have made the power relation between the public institutions and the financial sector more explicit, with a prevalence of the goals of the latter. Specifically, decisions over liquidity provision and interest rate levels are conditioned to compensations for eventual losses in the financial sector. The repurchase agreements operations with adjusted profitability during the 1980s, when the interest rate increased considerably to manage high price volatility, are a good example in this regard.

3.3.3. *Convention and the self-reinforcement of inflation targeting in Brazil*

The moment of *critical juncture*, characterized by the implementation of automatic clearing, has an important influence over the *self-reinforcing* mechanisms that allowed the extensive use of repurchase agreements for monetary purposes to persist over time. In this regard, we argue that a *convention* around the regime of monetary dominance has been one of these mechanisms. It was crucial in self-reinforcing the idea that inflation targeting can be carried out by the central bank alone, regardless of the actions of the fiscal authority. As King (1997) would argue, it turned central bankers into 'inflation nutters' – that is, central bankers who concentrate on the inflation target to the detriment of stable growth, low debt costs, employment, and/or exchange rates. Underneath this convention, at the heart of the inflation targeting regime adopted by the central bank of Brazil in 1999⁶⁸, relies upon Sargent and Wallace's (1981) theoretical justification for the domination of

⁶⁷ For more details about both interventions, see Lundberg (1999). The author provides a detailed analysis of central bank's operation to rescue two important Brazilian banks: "Banco União Comercial" in 1979 and "Banco Halles" in 1974.

⁶⁸ In Brazil, the inflation target is defined by the National Monetary Council (CMN) while the Central Bank (BC) is responsible for adopting the necessary measures to meet the target. The price index used is the Broad National Consumer Price Index (IPCA), calculated by the Brazilian Institute of Geography and Statistics (IBGE). The CMN defines the inflation target for three years ahead, usually with a tolerance interval of 1.5 per centage points (p.p.) both upwards and downwards. The target refers to the accumulated inflation for the year. For example, the target for 2020 is an inflation rate of 4 per cent.

monetary goals over the fiscal objectives and the debate about rules versus discretion (Kydland and Prescott, 1977; Barro and Gordon, 1983; Taylor, 1995), after rational expectations (Lucas, 1972; Sargent and Wallace, 1975) became dominant.

In this regime, both the Taylor rule and inflation expectations are key pieces of the so-called new consensus on monetary policy (Mishkin, 2001, 2000; Woodford, 2001). As argued by Carvalho (2007: p. 146): “the debate and disagreement have always accompanied the evolution of economic thought. It may not be different with regard to the apparent new consensus related to the adoption of the inflation target regime”. The conclusions presented by the tenants of this regime (Larsson, 2012; Fraga et al., 2003) stand in contrast to the empirical findings of Arestis, de Paula e Ferrari (2009), Arestis and Sawyer (2004) and Carvalho et al. (2007). They outline that countries that have not adopted inflation targets have been equally or more successful in fighting inflation, or that inflation was controlled before the adoption of inflation targeting in several others. It is not the purpose of this section to analyse the operationality nor the positive and negative externalities presented on the academic debate around the inflation targeting regime⁶⁹.

Our main purpose here is to grasp some of the central features of inflation expectations –the cornerstone of inflation targeting – and discuss the bias in the prediction of future inflation due to the presence of the high ‘financial indexation’ of the Brazilian economy. We understand ‘financial indexation’ as government bonds and debt instruments pegged to the overnight interest rate. Discussions around this bias are expected to offer new perspectives about the financialisation of monetary policy in Brazil, in which a convention around the inflation targeting regime self-reinforces the fiscal fragility of the Brazilian economy through the extensive use of repo operations for monetary purpose – the corollary of distortions in the use of the automatic clearing mechanism.

3.3.4. Convention and inflation targeting in Brazil

In this subsection, we recall the general idea presented in Chapter 1 on convention economics and apply it to the Brazilian case. The notion of ‘animal spirits’ is important for the sake of our argument. According to mainstream theory, prices alone are responsible for coordinating individual decisions. Keynes (1936), on the other hand, introduced the notion of ‘animal spirits’ to explain the role of uncertainty in price determination. He has used this expression to forward the argument that economic agents beliefs’ drive the expectations about the economy. These do not always have a correlation with reality, but they can create realities that become self-fulfilling prophecies. In

⁶⁹ For a detailed discussion about the externalities of inflation targeting regime in emerging countries, see Mishkin (2004, 2000). Criticism on Mishkin’s approach can be found in Reichlin and Baldwin (2013) and Garnaut (2005).

practice, what this means is that an individual, even if in the immediate future he/she does not suffer any change in his/her financial situation and keeps exactly the same income, can, from one moment to the next, see reasons - false or true - to feel more or less confident about the future. And when these changes of feeling occur simultaneously on a large scale, it will produce strong and immediate macroeconomic effects. As Keynes (1936) states about the economic effects of animal spirits:

Even apart from the instability due to speculation, there is instability due to the characteristic of human nature that a large proportion of our positive activities depend on spontaneous optimism rather than mathematical expectations, where moral or hedonistic or economic. Most, probably, of our decisions to do something positive, the full consequences of which will be drawn out over many days to come, can only be taken as the result of animal spirits – a spontaneous urge to action rather than inaction, and not as the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities.

The expectations of the economic agents would then be formed by an external cognitive benchmark guiding their anticipations. This benchmark, as we have been discussing, the convention, would thus compensate for the inability of the mainstream price system to ensure the normal functioning of the market once the uncertainty is introduced. Absent from the Walrasian price theory, the convention would be a complementary element that explains the mechanism of coordinated prices.

Thus, as discussed in Chapter 1, a convention can be understood as a belief or rule of expectation formation that is divided among a large number of individuals, or as an agreement between participants who decide in favour of a common strategy that benefits them all. In his *General Theory*, Keynes (1936) suggests two concepts of convention or behavioural rule of agents: 1) the assumption that the existing *status quo* will continue indefinitely (a projection of the present situation); 2) the propensity to follow the majority or average opinion (the most reliable path may be to follow the others). In this sense, convention can be understood either as a social sharing in the terms above or as a collective representation leading to a mimetic behaviour of the agents, in which they follow conventions because others also do so (Modenesi and Modenesi, 2012).

Bresser-Pereira and Nakano (2002b) introduced the theoretical contributions relating convention economics to monetary choices in Brazil. They formulated a hypothesis of a pro-conservatism convention on the conduction of monetary policy. After maintaining interest rates at high levels during the period of hyperinflation, the high rates defined by the ‘extremely cautious’ central bank of Brazil after macroeconomic stabilisation could be justified by a convention that aims at maximising the benefits of some interest groups. As Bresser-Pereira (2007: p. 200) argues: “with the argument that a very high interest rate is needed ‘to fight inflation’, [the interest rate] is set at a

high and artificial level, to remunerate both the rentiers and the financial sector”. According to this point of view, interest groups (i.e. rentiers and financiers) are accountable for the interest rates to remain at high levels in Brazil. In the same vein, Erber (2011) suggested that monetary decisions about the stance of monetary policy in the country are not entirely based on the principles of macroeconomic, and should also be explained within the theoretical framework of political economy. This is because of inflation expectations and, consequently, central bank decisions about interest rates levels, are a function of a coalition of interests’ preference – usually, around high rates. The choice for high rates would be beneficial for a more conservative central banker in Rogoff’s (1985) terms⁷⁰, who puts more weight on inflation stabilization than the social planner, but also for the holders of interest-pegged public securities. As Erber (2011: p. 43) points out:

There is, therefore, a broad and powerful constellation of interests, structured over time around high interest rates, to which a convention has been established around this choice of the central bank as an essential choice for the development of the country [...] This coalition of interests has at their disposal powerful instruments to disseminate and legitimate this convention. It requires a simple alignment of interests between the central bank and the large financial institutions about the joint benefits from the same policy - in this case, the credibility of meeting the goals (central bank) and the profits derived from the high interest rates (large financial institutions).

Thus, the maintenance of a high real interest rate for decades in Brazil led to the creation of a convention on the ‘safe interest rate’, i.e., a belief in the perpetuation of high rates. This was mainly due to the possibility of high gains from government bonds and repo operations indexed to the overnight rate. As we will see in the next section, such a ‘vicious circle’ contributed greatly to the development of the process of financialisation of monetary policy in Brazil via high interest gains – a central feature of the financial indexation prevailing in the Brazilian economy.

In addition to interest rates, institutional legitimacy is another important component for the formation of inflation expectations (fundamental to the inflation target regime) in the country. According to Dequech (2013), this form of legitimacy also explains the reasons for economic agents to follow a given system of rules, making an institution more acceptable to the detriment of other deviant alternatives. We can apply this idea to adherence to the inflation target regime itself. The regime’s adoption in different countries has contributed to reinforcing its legitimacy and then the justification for old and new adhesions. This situation expresses a specific type of institutional legitimacy named ‘epistemic legitimacy’: “a socially recognised source of impartial and balanced decisions and opinions” (*ibid*, p. 96). This concept of epistemic legitimacy connects to some ideas

⁷⁰ Rogoff’s approach suggests a trade-off between credibility and flexibility. Monetary policy, if delegated to a central banker who is more averse to inflation than the government (i.e. who places a greater weight on inflation losses), will, in equilibrium, produce a lower inflation bias than the government does. At the same time, a conservative stabilization of the real economy will be sub-optimally low from the government’s standpoint.

presented by Brière (2002). The author states that in the self-referential process that gives rise to the collective representation of coordination around interest rates, two agents stand out: central banks and economists (at the detriment of experts from other areas of social sciences). She refers to a generalized perception that the conceptions of these agents are above all others, relying on strong legitimacy from different sectors. In the face of uncertainty, central bank's views stand as the anchor for expectations to be coordinated.

Taking into consideration the specificities of the Brazilian case, under a forward-looking monetary policy framework, the rationale behind inflation expectations implies that agents align their prospects with the dynamics of future price level with central bank's inflation target. Hence, the belief of a large number of influential agents (i.e. central bank directors, private bank analysts and economists from academia) operating at different levels within the financial market should converge to the targeted rate. According to Bresser-Pereira *et al.* (2019), this process self-reinforce the epistemic legitimacy of this convention. Concerning the legitimacy of the inflation targeting regime abroad or particularly in Brazil, the quest for legitimate this convention can be found inside interest groups trying to influencing monetary policy. Dequech (2013: p. 99) describes this process as “the adoption of a certain pattern of behaviour or of thought by many people that contributes to making it seem natural, inevitable, self-evident, and the like”. This causes inflation targeting to be perceived as the most legitimate institutional framework and the only available option, despite the other available alternatives (Andersson and Claussen, 2017; Neves and Oreiro, 2008).

Oreiro and Passos (2005), in a critical evaluation of the governance structure of monetary policy in Brazil, arguing that the metric used to evaluate inflationary expectations (i.e. used in the process of determining the basic interest rate) does not include the expectations of an important part of the agents with the power to influence price formation. According to them, Brazilian inflation targeting does not meet the criteria of representativeness of social preferences and arbitrage between inflation and unemployment. Specifically, the objectives of monetary policy should integrate the ‘degree of social aversion’ to inflation, but also the ‘degree of social aversion’ to production and employment losses resulting from the policy of inflation targeting. A study carried out by a working group on inflation targeting at the Institute of Applied Economic Research (IPEA)⁷¹ has concluded that:

We found robust evidence that supports the fact that inflation expectations, collected by the central bank of Brazil within market participants, does not reflect real expectations about future interest rates. If a given market participant realises the possibility to affect central bank

⁷¹ The Institute of Applied Economic Research is equivalent to the NBER in the United States. It is a Brazilian government-led research organization dedicated to generation of macroeconomical and sectorial analysis aiming at provide theoretical solutions to government planning and policy making.

interest rates by manipulating its own answer about the future prospects of inflation, this participant could have enough incentives to hidden the real expected value for future inflation (Lima and Céspedes, 2003: p. 75).

The real answer will depend on a set of factors including the share of public liabilities pegged to interest rates in the institution's portfolio, or the share of repurchase agreements with the central bank in the institution's sources of funding. The authors' empirical findings also pointed that the actual metrics for inflation expectations "over horizons longer than three months, do not reflect real market expectations and should, therefore, have no influence on the formulation of the country's monetary policy" (*ibid*, p.83).

Hence, the central bank's decision on interest rates in Brazil, Lima and Céspedes (2003) suggest, may have a bias. It might be influenced by the unbalanced interest representation vis-à-vis the central bank, i.e., by the particular view of financial interest groups on inflation expectations. Due to this bias, the Brazilian financial system, through the mechanism of inflationary expectations, "can exert strong pressure in order to prevent a fall in the real interest rate below a level considered 'reasonable' for the members of this sector" (Oreiro and Passos, 2005: p. 166). The risk that interests of the financial sector influence the decision on interest rates was also argued by Erber (2011). According to him, the 'inflation expectations' are the expectations of the departments of economic analysis of large banks and other influential financial institutions dealing directly or indirectly with the central bank.

A perverse mechanism is thus created in which the Brazilian financial system can exert an influence over the central bank's decision over the interest rates. This situation is all the more worrisome in Brazil, where banking concentration is an issue of primary importance. The concentration of 72.4 per cent of asset market share held by the "big four"⁷², highlights an important feature of the oligopoly structure of the banking sector in Brazil. The literature on market failures highlights the risk of cartel formation under oligopoly structures, so it is reasonable to wonder the extent to which these large financial institutions could collude for a coordinated action aiming at 'compelling' the monetary authority to conduct a restrictive monetary policy after an 'upward revision' of their inflation expectations.

However, what would be the motivation for these institutions to behave as such? In this respect, two reasons directly related to financial indexation stand out (i.e. public bonds and interest-rate remunerated repo operations). The first, as discussed in chapter 2, refers to the significant part of the repurchase agreements in the sources of funding of banks. The second relates to the industry

⁷² The "Big four" stands for the largest banks in Brazil: (Banco do Brasil, Itaú Unibanco, Caixa Econômica Federal e Bradesco. From 2000 to 2017, banking concentration rose from 50,4 per cent to 72,4 per cent.

of investment funds, an important counterparty of commercial banks activities. The BIS (2014) highlights that bank exposures to large funds can be divided into direct and indirect exposures. Direct exposures include banks' financing, trading, investment and income exposures. Indirect risks arise from banks' exposures to parties (e.g. other banks or institutional investors) that in turn, are exposed to investment funds or financial markets potentially affected by investment funds. Besides these direct and indirect exposures, banks may also incur some other risks. For the purposes of our study, we will focus on the risks related to the enforceability of netting and collateralisation provisions contained in various agreements with hedge funds.

It is worthwhile noting the weight of sovereign liabilities, especially the interest-pegged ones – LFTs and short-term repurchases agreements backed by public bonds, which is very significant in the Brazilian investment fund segment. According to data released by the national treasury of Brazil, 58 per cent of the composition of the public securities portfolio of investment funds were composed of floating-rate securities (LFTs) in 2017. Also, data from ANBIMA (Brazilian Financial and Capital Markets Association) reveals that, of the total asset composition of investment funds, 24 per cent are repo operations with federal securities and 28 per cent are public securities indexed to interest rates. This portfolio composition increases the bargaining power of financial institutions *vis-à-vis* the central bank, and then the power to influence monetary policy. In the case of a coordinated action to increase their earnings from sovereign liabilities, these institutions will have an incentive to “predict higher inflation” and thus lobby for a restrictive monetary policy. The negative externalities of the financial indexation are discussed after that.

3.3.5. Financial indexation: A source for inflation targeting to perform suboptimally in Brazil?

In Brazil, a large share of public debt is indexed to the overnight interest rate. As we have analysed in the previous sections, financial indexation has transformed government bonds into near money and contributed to the creation of a “culture of short-term gains” among financial market actors. In this subsection, we will argue that the adoption of the inflation target regime reinforced the process of financialisation of monetary policy due to the high level of financial indexation of the Brazilian economy. That is, financial indexation⁷³, another inheritance from the period of hyperinflation, creates incentives for large financial institutions to assume only a part of the market risk of their portfolios while passing on the government the other part (i.e. taxpayers). After all, very high short-term interest rates became the benchmark in the calculation of the opportunity cost of these institutions before investing elsewhere. The opportunity cost of financial indexation

⁷³ By financial indexation we understand as Chicoski (2018), that short-term interest rates (overnight) is also used as an index for the issuance of government bonds, which makes this liabilities very liquid and low risk.

is expressed in the issuance of a specific interest-pegged government bond, *Letras Financeiras do Tesouro* (LFT)⁷⁴, and through other investments of immediate liquidity and daily compensation offered by the central bank, such as repurchase agreements. The views of Oliveira and Carvalho (2010: p. 15) on financial indexation is worthwhile mentioning:

The end of high inflation has not meant a rupture with the macro-financial structure that was able to offer wealth holders a public liability with a high real income, immediate liquidity and protection against capital losses. These conditions made it possible for banks and other large institutional investors, to build portfolios that were at once liquid, profitable and low-risk. This institutional framework has also discouraged the structuring of a financial system oriented towards long-term financing, that is, the financing of economic and social development. Briefly, it can be said that monetary stability did not break with the [old] institutional structure that prevailed during the period of hyperinflation.

The author draws attention to a central feature of financial indexation, i.e., the contribution made to the composition of the liquid, profitable and low-risk portfolios. Generally speaking, holders of LFTs and the counterparties of the central bank in repo operations are likely to have the mitigation of three different risks: credit, liquidity and market risks. As the first two are also risks mitigated for pre-fixed securities, we will be focusing on the market risks alone. From a practical point of view, while offering large institutional investors a hedge against market risks, interest pegged instruments also cause negative externalities to affect government financing. We highlight here two of them.

First, the coexistence of public liabilities and central bank operations remunerated by the overnight interest rate has been affecting the efficiency of the secondary market (for private and public assets). The reason for secondary markets in Brazil to be not so liquid, Almeida and Bazilio (2015) argue, stems from the lack of transparency and high transaction costs. As market operators can count on *free-risk* liquidity ensured by public institutions, public interest-pegged instruments “replace and make redundant the existence of a vigorous secondary market, since they end up exercising part of the functions of that market, by protecting the investor against risks of price fluctuations” (Moura, 2007: p. 252).

A second negative externality to be highlighted derives from the fact that financial indexation is likely to reinforce the national treasury’s position as the guarantor against market risks. As it used to be during the period of hyperinflation, the treasury (i.e. the taxpayers) finally carried the burden of the excessive protection granted to the holders of public debt. In other words, financial

indexation to the overnight rate functions in the same way as a hedge that taxpayers grant to creditors. Among the public interest-pegged instruments, Magalhães and Costa (2018: p. 12) draw attention to the double economic function performed by the repurchase agreements:

[Central bank] repo operations operate not only as a tool for liquidity management but also as an alternative for shortening the term of financial market investments in government bonds, with minimum remuneration guaranteed by the overnight rate. In other words, in practice, repo operations made possible an alternative to operations with LFT [public securities indexed to the interest rate], with guaranteed profitability, high liquidity and minimum risk.

For Lopreato (2015), repo operations have peculiarities in the Brazilian context: The extensive use of repo operations is similar to the practices observed in the period of hyperinflation, in which the presence of the automatic clearing mechanism allowed large amounts of financial wealth to flow in the overnight (to the detriment of long-term investments). Once the excess reserves are allocated in the short term, and thus remunerated at the overnight rate, large institutional investors have no incentive to buy long-term government bonds. Nakano (2007) notes a substitution effect between LFTs and repo operations. According to him, the reduction in the percentage of LFTs issued in recent years, as a share of total outstanding public debt, was offset by the steep increase in repurchase agreements. Hence, when considering the federal securities debt, it can be observed that the post-fixed debt indexed to the overnight rate has been decreasing in recent years. However, when taking as a reference the general government gross debt (DBGG), which takes into account government bonds used as collateral in the repo operations of the central bank of Brazil, it can be seen that there was an increase in the portion of the debt indexed to the overnight rate (Salto and Ribeiro, 2015). It corroborates Pellegrini's (2017) argument on the use of repos to window-dress the Brazilian sovereign debt profile.

The extensive use of repurchase agreements, different from what is observed in other countries, offers important protection by the public sector to financial institutions, especially banks – even beyond what is required for systemic regulatory purposes. This excessive protection, which increases moral hazard risk, ultimately distorts the functioning of the financial sector to the detriment of the productive financing of other sectors. This transformation in the nature of financial indexation has strengthened the increase in speculative operations in the government bond market, in a movement defined by Oliveira and Carvalho (2010: p. 17) as ‘financial ciranda’ (i.e. a vicious circle of short-term investment with generous interest rates):

The government raises funds through the signalling of positive real interest rates. The banks, in turn, appropriated spreads in risk-free operations, in view of the commitment to ‘automatic clearing’ made by the central bank. Investors, in turn, invest their resources in assets with high

liquidity and the informal guarantee of real return. In fact, the money supply has become endogenous, making monetary policy passive.

In addition to financialise monetary policy, that is, making the overnight rate a reference for the inflation expectations of the economic actors, this ‘ciranda’ makes liquidity management via open market operations (i.e. the definition of the daily interest rate) highly difficult. For this must simultaneously perform two functions. It should be high to the point of guaranteeing real returns to investors, and low to the point of not deteriorating inflation expectations. Moreover, this arrangement consolidated the interconnectedness between the public debt market and the money market, with the money market rate consolidating as a benchmark for the remuneration of securities issued by the public sector to make government financing viable.

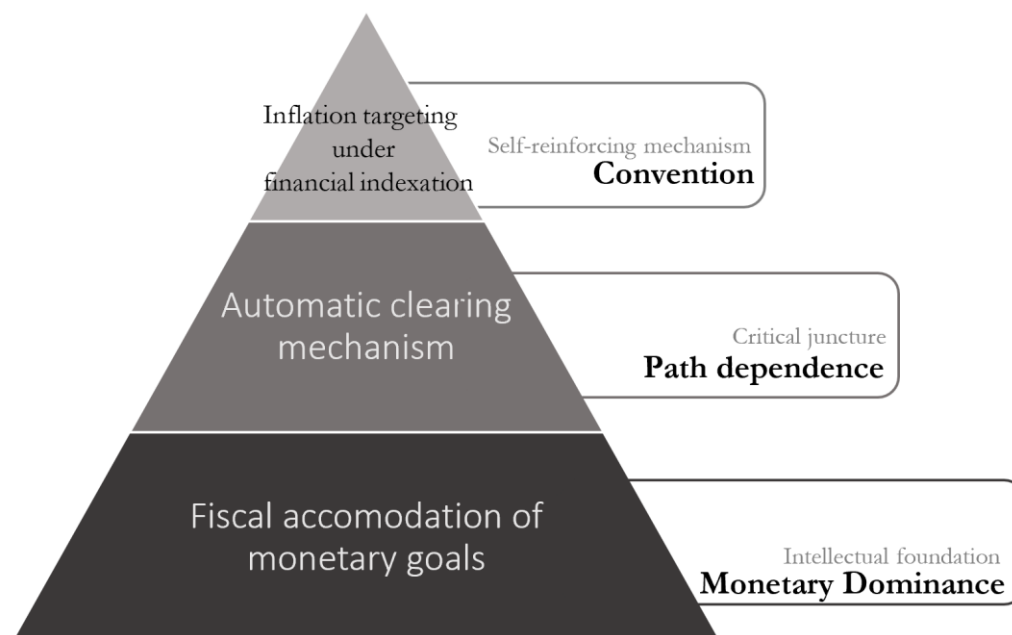
Franco (2006) argues that the persistence of financial indexation results from the reproduction of historical institutional arrangements that create a bias in the formation of interest rates, inflation expectations, besides fostering moral hazard among the large financial institutions in Brazil. This process of institutional reproduction, which follows the pattern of path dependence, should be considered to explain the fiscal fragility of the Brazilian economy and the strong interconnectedness of sovereign debt management and central bank operations to meet the inflation targeted. The institutions from the time of hyperinflation, which are responsible for the financial indexation, have kept intact the logic of automatic clearing.

The presence of positive feedbacks under the prospects of path dependence has been self-reinforcing some practices that are out of context nowadays, but that are necessary for the maintenance of the *status quo*. The strong reliance of the large financial institutions on the mechanism of financial indexation provides an example of a sub-optimal institutional arrangement; Or of “how institutions at a given time become ‘locked-in’ and difficult to change, even though the initial conditions under which they were designed to have drastically changed” (*ibid*: p. 275). The overall conclusion of this section is that we can think of the financialisation of monetary policy in Brazil as the result of three different processes, which can be organised in a pyramidal hierarchical structure (figure 3.2).

At the bottom, ‘monetary dominance’ offers the intellectual foundation and theoretical validation for the submission of fiscal authority goals to the monetary goal of inflation targeting. The practical aspect of this dominance in Brazil came after the implementation of the mechanism of automatic clearing (*zeragem automática*) – a critical juncture moment that lock-in monetary policy on a pattern of short-term liquidity provision. Now, we have more elements to understand the extensive use of

repurchase agreements for monetary purposes observed nowadays, as the result of an institutional reproduction that has been distorted due to moral hazard concerns.

Figura 3.2 | Pyramidal representation of the financialisation of monetary policy in Brazil



Source: Own elaboration.

The contribution of path dependence theory in identifying this critical moment of change in the nature of monetary policy was also accompanied by an explanation for the self-reinforcement of this structure over time. This is where the convention around inflation targeting merge monetary dominance and path dependence into a single body, to integrate the top of the pyramid. The current metrics for inflation expectations that calibrates the regime ought to be inconsistent with the high level of financial indexation observed in Brazil. This is mostly due to the potential conflict of interest faced by financial institutions participating in the process of guiding 'inflation expectations' within the central bank. The literature emphasises that this 'small and well-coordinated group' has incentives to distort their real expectation to increase their returns on interest-pegged public instruments – such as repurchase agreements.

3.4. Negative externalities of the financialisation of monetary policy over sovereign debt management

The financialisation of the Brazilian monetary policy affects the fiscal balance of the country. The peculiarities of financial indexation add even more complexity to the dynamics of fiscal and monetary interactions. That is, under a scheme of financial indexation, monetary authority decisions have an even larger impact upon the conduct of fiscal policy. Some of the leading

mainstream authors, however, share a common understanding of the benefits of financial indexation (while presenting no further analysis on its fiscal effects). Insights from Calvo (1988), Calvo and Guidotti (1990), Giavazzi and Pagano (1990) and Missale and Blanchard (1994), point that the indexation of public debt to short-term interest would lessen the probability of debt monetisation while creating incentives for the government to commit to price stability. As the former governor of the central bank, Illan Goldfajn stated: 'by increasing the share of index-linked securities, the debt manager strengthens the credibility of the anti-inflationary policy, since it reduces the benefit that could lead to inflation in the economy in later periods'. (Goldfajn and Paula 1999; p. 7).

However, do the potential benefits of financial indexation outweighs its fiscal burden? In the light of what has been discussed so far, our answer is negative. Interest service expenses paid on repos (or interest-pegged bonds) is a factor that operates against the fiscal balance of the country. These expenses are part of the calculation of the financing needs of the public sector. Hence, if primarily surpluses are insufficient to cover interest expenses, then the government is *forced* to issue new government liabilities for complying with the requirements of inflation targeting. This *forcing*, on the one hand, transfers the fiscal burden of the independent pursuit of monetary goals to the government and, on the other, undermines the maturity structure of sovereign debt. Ultimately, this situation ends up generating a problem of competitive distortions between the fiscal and monetary authorities for the same investors. The fiscal authority needs to pay an extra premium (i.e. increase the cost of debt), above the overnight rate set by the monetary authority (benchmark return on repos), to encourage investors to buy long-term bonds. With this competitive distortion, thus, the prospects of reducing the cost of sovereign debt while lengthening its maturity profile would follow a Tantalus logic⁷⁵.

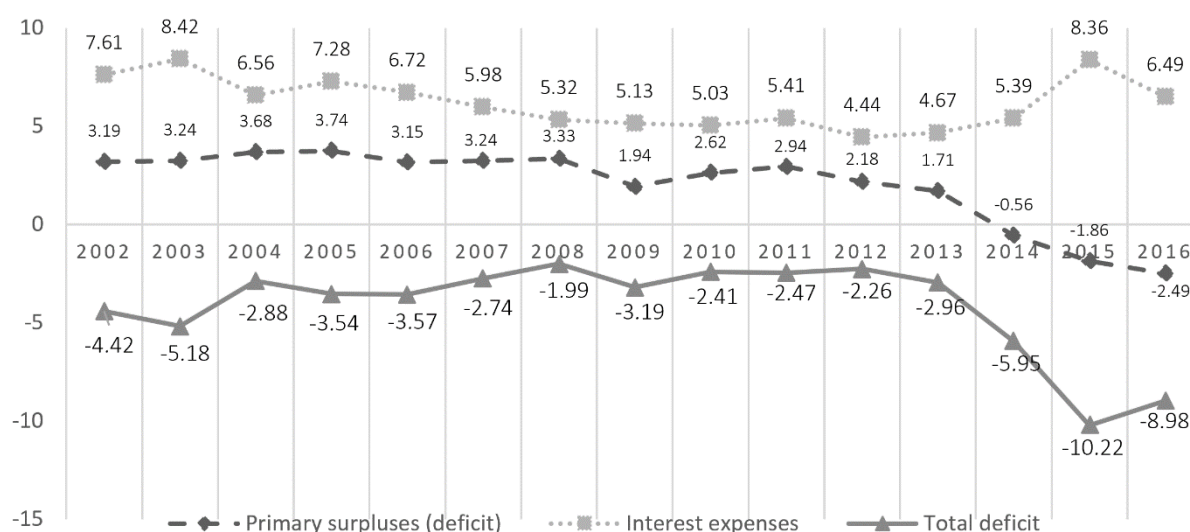
Hence, the assumption that financial indexation and fiscal subordination improve the credibility of monetary policy may be seen with caution. We do not reject that it may improve monetary policy credibility in the short-term but at the expense of greater fiscal burden for the governments and the taxpayers in the long-term. This is even more worrisome in Brazil where the recent past of hyperinflation still plays a 'memory effect', and where the country's exposure to external shocks and political instability contributes to interest rate volatility. Against this background, a countercyclical monetary policy to counter an economic shock would demand larger primary

⁷⁵ According to Greek mythology, Tantalus was a prosperous and wise king. Once, daring to test the omniscience of the gods, he stole the divine delicacies and served them the flesh of his own son Pelops at a feast. As punishment he was thrown to Tartarus, where, in a valley abundant in vegetation and water, he was sentenced not to be able to quench his hunger and thirst. For as he approached the water it drained away; as he tried to gather the fruit from the trees, the branches moved away from their reach under the force of the wind. The torment of Tantalus refers then to the suffering of the one who desires something apparently near but unreachable, as in the popular saying 'so near and yet so far'.

surpluses to stabilize the path of sovereign public debt. It is worth noting that the cause for instability in debt to GDP ratio, in this case, would not come from fiscal mismanagement, but from the narrow focus on inflation targeting under a context of financial indexation.

Otherwise stated, the fiscal policy could be forced to accommodate the increase in interest payments, of monetary origin, with higher taxation and measures of fiscal austerity. Given the prospects of depression of economic activity that follows a restrictive monetary policy⁷⁶ (Blyth, 2013; Clarke and Newman, 2012), this adjustment is expected to amplify the initial shock due to a contraction in the tax base that follows a procyclical fiscal policy. This is a complementary explanation for the growing nominal deficits in Brazil despite the fiscal efforts to generate primary surpluses. As we can see in Figure 3.3, during the period 2002-2016, interest expenses averaged 6.2 per cent of the country's GDP. Despite the primary surpluses observed until 2013, the government was running on deficit due to this high debt-related expenses.

Figura 3.3 | Total deficit, primary surpluses and interest payments in Brazil



Source: Own elaboration, data from Central Bank of Brazil (2017)

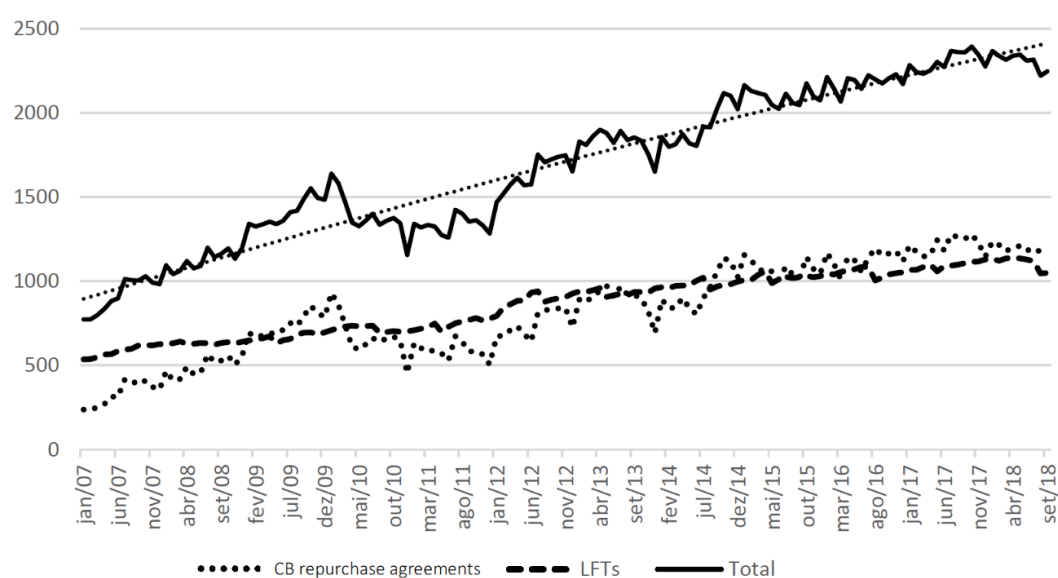
Although the Brazilian economy presented primary surpluses from 2002 to 2013, interest expenses remained high and constant over time, generating persistent deficits. How was this possible? Because the financialisation of monetary policy weakens the fiscal position of Brazil via the ‘contagion-effect of the public debt’. We reverse the causal sense of the conventional explanations of fiscal imbalances, in which fiscal choices constrain monetary decisions, and argue that financial indexation in Brazil makes government bonds and bank reserves perfect substitutes. It consequently fosters liquidity preference among investors instead of fomenting long-term

⁷⁶ For further detail see also Krugman, P. (2010). *Myths of austerity*. The New York Times; and Krugman, P. (2012). *The austerity agenda*. The New York Times.

financing. Barbosa-Filho and Taylor (2006) argue that the impossibility for the monetary authority to set two different values for the interest rate (one for repo operations and the other for the remuneration of floating public debt - LFTs) reduces the efficiency of monetary policy due to the greater participation of the central bank in the rollover of the federal public debt. It increases Brazil's fiscal risk and, consequently, the risk premium for the financing of sovereign debt.

Oreiro and Paula (2011) complement this argument with meaningful insights about the negative externalities generated by central interventions in the interbank market. The pressure on the central bank for asset monetisation arising from the participants of this market contributes to increasing debt service costs. Because the monetary instrument for targeting inflation (repos) and a large part of sovereign debt (LFTs) are indexed to the overnight interest rate. The substitutability of these two types of liabilities causes an upward bias in interest rates that can undermine the financial costs related to the issuance and rollover of public debt, especially in times of uncertainty. This is particularly important because of the imperfections of the market for sovereign debt, where it is not possible to provide perfect insurance (hedge) for events that affect the economic value of financial transactions, or where the costs of this hedge do not outweigh the expected return on investment (incomplete market). Bresser-Pereira et al. (2019) provide an account of this substitutability among both instruments in Figure 3.4 below:

Figura 3.4 | Interest-pegged instruments (repos + LFTs) in Brazil 2007-2018 (BRL million)



Source: Bresser-Pereira et al. (2019: p. 27); IGP-DI deflator (September 2018)

The main intuition of the financialisation of the Brazilian monetary policy is that it creates incentives for investors to engage in highly liquid operations remunerated at the overnight rate,

whether through repos or interest-pegged securities (LFTs). This minimises the positive effects originated by the efforts of the government and the taxpayers to achieve primary fiscal surpluses. The current dynamics of public indebtedness in Brazil causes a dynamic inconsistency between fiscal and monetary policies. This issue is highlighted by Hermann (2002: p.62):

The indexation of a large part of the public debt to central bank interest rate (overnight rate), created a trap for the central bank, exacerbating the tendency to increase the risk attributed to the country and the public sector due to a high interest rate policy. Given the high weight of the debt indexed to the overnight rate, even a temporary increase in this rate could significantly increase government financial expenses.

Therefore, this financial indexation exposes public finances to potential and intertemporal imbalance, which hinders counter-cyclical management of the fiscal policy. In the face of an adverse shock that implies an increase in prices, to be contained by a restrictive monetary policy, the increase in interest expenditure will affect a significant share of the public debt stock, which will require an even deeper fiscal adjustment to keep the debt to GDP ratio on track, thereby deepening the original shock. In other words, the search for price stability by raising the interest rate implies an instantaneous increase in the public debt service, requiring greater efforts from the fiscal authority to meet primary fiscal surpluses. As we have previously mentioned, it leads to a perverse cycle in which increases in the interest rate to curb inflation may set the public debt to GDP ratio on an explosive trajectory – in the case the fiscal effort (i.e. structural adjustment) prove to be insufficient to offset the increase in the interest burden on the public debt.

The financialisation of monetary policy, therefore, pass on to taxpayers the cost of the hedge offered to large institutional investors. The rationale behind public control has thus been reversed: it is not monetary policy that sets limits on private actors, but rather private actors who define at what price monetary policy would become effective. The financial interest groups, aware of their bargaining strength, have assumed the role of those in charge to ratify the conditions for achieving price stability – the ultimate goal of the advocates of monetary dominance. This advantage in the correlation of forces allows, for example, banks to make their investment decisions based on the transfer of public resources (functioning as a hedge) that support monetary policy. Like any public policy, monetary policy is financed by the public budget, whose main source of revenue is tax collection. Under the financialisation of the Brazilian monetary policy, the cost of implementing monetary policy represented a kind of inverse transfer, in which public resources were transferred to the financial interest groups, creating a hedge to guarantee their yields.

Hence, it seems reasonable to suggest the existence of bias on the expected benefits of monetary-dominant regimes (at the expense of horizontal coordination). This bias is related to the incomplete

view about the nature of fiscal imbalances, which disregard the difficulties for the National Treasury to improve the maturity structure of sovereign debt in the presence of a very intervenient central bank. In the specific case of Brazil, the dominance of monetary objectives over fiscal goals has created an insufficient diagnosis about the causes of the country's fiscal deficit. None of this is to pledge for a discretionary growth of primary expenditures – by no means. But rather it is an attempt to bring to the debate the high expenses incurred with a monetary-dominant regime under a scheme of financial indexation, i.e., the burden of interest services borne by the taxpayers. Table 3.7 highlights some aspects of the importance of interest payments *vis-à-vis* other components of the Brazilian budget over the period 1998-2016. One of the most striking features of this interest payments dynamics present in Almeida (2015) is the equivalence with the average amounts standing for public investments. The author sees the low-investment capacity of the Brazilian government as the result of the fiscal space of the country being constrained by the high debt-related expenses.

Table 3.7 | Primary expenses and interest payments in Brazil 1998-2016 (per cent GDP)

Year	Primary expenses	Social insurance	Subsidies	Social Spending	Investment	Health and Education	Personal costs	Administrative expenses	Interest Payments
1998	15	5.5	0.3	0.6	0.8	2.2	4.6	1	6.8
1999	14.5	5.5	0.2	0.6	0.5	1.8	4.5	1.6	8
2000	14.7	5.6	0.2	0.6	0.7	1.8	4.6	1.5	6.5
2001	15.6	5.8	0.2	0.9	1.2	1.8	4.8	1	6.6
2002	15.7	6	0.2	0.9	1	1.8	4.8	1.1	7.6
2004	15.6	6.5	0.4	1.2	0.6	1.7	4.3	1.2	6.6
2006	17	7	0.4	1.6	0.7	1.7	4.5	1.4	6.8
2008	16.4	6.6	0.2	1.6	0.9	1.8	4.3	1.1	5.5
2010	17.4	6.8	0.3	1.8	1.2	2	4.4	1.1	5.2
2012	18.2	7.2	0.5	2.1	1.1	2.2	4.2	1.3	4.9
2014	20.1	7.7	1	2.4	1.2	2.2	4.3	1.3	5.6
2015	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	8.5
2016	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	6.5

Source: Almeida (2015) in Magalhães and Costa (2018); and Chicoski (2018); n.a. stands for non-available, disaggregated data found in Almeida (2015) does not cover periods after 2014.

As we have discussed along the lines of this thesis, the exponential use of repos should not be neglected as an important part of this uprising trend that constrains the investment capacity of the government. Neither that the idea of monetary dominance, giving legitimacy for the exponential use of repos for monetary purposes, plays an important role in promoting the financialisation of monetary policy. The considerations of Bontempo (1988), which condensed some central elements about the nature of the deficit during the period of hyperinflation, are still valuable nowadays. According to him, the nature of the deficit is financial, given the growing vicious circle of debt

rollover, and the increasing inability of the government to service its debt. It shows the importance of discussing the practical applicability of horizontal coordination to cope with the inefficiencies of monetary dominance. A broader reflection on horizontal coordination will contribute to mitigating the risk that the financialisation represents to the fiscal balance of the government. These discussions are an important step for rescuing the fiscal potential of Brazil. It should be guided by the ways to sever the path-dependent pattern to which the monetary authority is locked-in since the implementation of the mechanism of automatic clearing in 1979 – the critical juncture moment for financial indexation to exacerbate and, therefore, compress strategic public investment.

Conclusion

Central bank independence with a narrow focus on inflation targeting is not solely a technical issue. Instead, this is a political issue that involves non-neutral choices that stem from a correlation of forces between different interest groups. In the current Brazilian context where fiscal and social concerns are paramount, it is of crucial importance to challenge the prospects of independence. This chapter has sought to bring this issue to the fore.

The argument of the financialisation of monetary policy aimed to contribute to rethinking monetary policy theory and the nature of public borrowing. It reaffirms the lack of strong scientific evidence supporting the argument of central bank independence. Thus, we rejected the argument that central bank independence may be sufficient to avoid economic crises or pressure from interest groups. Moreover, history shows that the path towards macroeconomic stability in general, or monetary policy in particular, is not unique. It is even difficult to conceptualize ‘independence’ because of the specificities of each country. When we take into account these specificities, we observe that the one-size-fits-all thesis of independence is incompatible with different legal frameworks, social structures, economic history and market practices. The financial indexation in Brazil provides an important illustration of some of the incongruencies between the theoretical idea of inflation targeting and the daily practices of the central bank.

The Brazilian experience brings particular arguments to this debate. It revealed that, given the historical and institutional conditions that shaped repo for monetary purposes, an independent central bank might reduce transparency and, consequently, the possibility of social control over monetary choices. We argued that a potential solution lies in the horizontal coordination of fiscal and monetary policies. This coordination scheme, on the one hand, would allow for greater fiscal discipline through more encompassing and rigorous budget expenses and, on the other, it would allow for greater fiscal control over monetary operations. However, for this coordination to take

place, some of the core assumptions of the practical aspects of monetary dominance should be challenged. Specifically, the discussion on central bank independence for pursuing inflation targeting stems from the different understanding of two fundamental aspects of macroeconomics: rationality and money.

About rationality, although neoclassical and neo-Keynesian economists have different research agendas, their policy propositions are consensual – which led to the emergence of the so-called New Consensus in Macroeconomics: a set of key principles, a core of macroeconomic hypotheses, on which there is a broad consensus between these two doctrines. The theoretical structure of the New Consensus assumes that the rationality of agents is based on the assumption of rational expectations. Therefore, the relevant variables are considered in terms of forward-looking. Thus, the monetary authority faces a constraint to engage in discretionary choices, on the one hand, due to the firm commitment to inflation targeting and, on the other hand, due to the well-behaved agents guided by rational, forward-looking expectations. In this idealistic scenario, agents and the central bank are induced to cooperate in order to achieve social welfare without opportunistic behaviour on both sides (Barro and Gordon, 1983). As a result of the increased demand for goods and services in general, and in the labour market in particular, nominal wages increase and, consequently, marginal costs are expected to rise. From this theoretical framework comes the need to constrain the inflationary bias of policymakers, to avoid distortions in resource allocations. Overall, the New Consensus assumes that the agents and the policymakers behave asymmetrically over time. While rational expectations guide the former, opportunistic behaviour is part of the intrinsic nature of the latter.

About money, there are divergences in the way each doctrine conceives the role and nature of money, with respect to its capacity to affect real or nominal variables of the economy, that is, whether money is exogenous or endogenous. The definition of money, together with a set of assumptions about the behaviour of agents, leads to a particular understanding of equilibrium (or crisis); Which is consistent with the existence or not of a natural rate of unemployment and ultimately determines the efficiency of economic policies and the different institutional arrangements for their interactions. In this respect, the insights of Costa (1992: p. 36) are worth noting:

The debate about the independence of the Brazilian central bank polarizes, on the one hand, ‘quantity’ economists [a reference to the quantity theory of money], who believe that the money supply is (or should be) exogenous, under the control of the monetary authority (...). On the other hand, there are ‘anti-quantity’ economists, developmentalists, structuralists, who accept the theory of endogenous money, either because the money supply is, ultimately, accommodative to the economic transactions carried out (by political pressures and/or risk of

insolvency), or because of the endogenous structure of the financial sector (by changes in the velocity of money and/or by financial innovations).

The endogeneity hypothesis highlights the limitations of monetary policy, while the non-neutrality suggests that money can affect income and employment levels. If money is endogenous, even if the central bank is independent, its power remains limited, as does the efficiency of the instruments at its disposal. Central bank independence is no longer a guarantee of efficiency in the control of monetary aggregates because fiscal and monetary policies are interdependent. Therefore, the central bank cannot be independent *de facto*. Hence, if money is not neutral, the central bank should try to intervene whenever situations of recession, unemployment or financial fragility so require. These arguments support the rejection of the argument of central bank independence and point to the need for collective action between the central bank and the fiscal authority. Or, in other words, the need for horizontal coordination between these economic policies.

This rejection is based on our argument of the financialisation of monetary policy in Brazil, supported by the demonstration of the negative externalities produced by the peculiarities of the financial indexation and the historical account of the double character of repurchase agreements for monetary purposes. Thus, from a political economy perspective, critical to the New Consensus and the overall practical aspects of monetary dominance, we raised the question: what if the central bank's counterparts in repo operations behave differently from what was foreseen in the theoretical framework of monetary dominance – under independence and inflation targets –, i.e., different from Barro and Gordon's (1983) hypothesis of absence of opportunistic behaviour? This chapter presented theoretical evidence that shows that the financialisation of monetary policy is a real risk. The monetary authority might be, under inflation targeting, captured by the commercial banks that create endogenous money. As we have argued, this capture extends Minsk's (1982) paradox of credibility.

This paradox has implications of great practical significance to the fiscal balance of the country. The analysis of such implications reveals that financial expenditures related to public debt (i.e. repos and other financial indexed liabilities) have been 'absent' from conventional explanations about the fiscal imbalances in Brazil. The explanation provided by the epistemic authorities of finance in the country offers an incomplete account, based on fiscal mismanagement alone. The reason for this bias in the diffusion of information on the nature of the deficit, we argued, points to the core purpose of the convention on monetary dominance: to give legitimacy for the implementation of measures of fiscal austerity. And, thus, to subordinate fiscal objectives to monetary goals to ensure the profitability of the central bank counterparts on repurchase agreements and other financial

indexed liabilities. Otherwise stated, the convention on monetary dominance provides a safeguard for the financialisation of monetary policy to perpetuate over time.

To conclude, our argument does not support price instability or any irresponsible behaviour of the fiscal authority. Conversely, as we mentioned earlier, we drew attention to the importance of thinking of fiscal and monetary interactions outside of the extremes of the dominance – ‘A and B are opposite but can be drought and flood’. Price instability and fiscal dominance do not stimulate long-term growth, but the discretionary use of monetary instruments to curb inflationary pressures may certainly undermine not only the prospects of growth but also development.

General Conclusion

This thesis has sought to provide a critique of the theories of monetary dominance and the role of ideas in shaping the policymaking process. Situating the case of Brazil within the broader context of growing financialisation of the global economy, we provided an analysis of what is identified as the financialisation of monetary policy. As argued here, the central bank of Brazil played a very active role in this process. Its constant interventions in the interbank lending market, following the establishment of the mechanism of automatic clearing in 1979, have been fostering moral hazard behaviour among the counterparties of repo operations. Much of this dynamic is observed during the period 2006-2016 when the exponential increase of repo for monetary purposes was coincident with the transformation of Brazil's sovereign debt profile. The effects of this specific feature of financialisation over the fiscal balance of the Brazilian government were the main motivation for this thesis to take a fine-grained and qualitative approach to investigate the ideas, interest groups and institutions operating at the very centre of the legitimacy given to conventional theories of monetary policy.

The financialisation of monetary policy, then, drawing upon the findings of four separated research agendas – *convention economics*, *interest groups*, *regulatory capture* and *institutionalism* – challenges the current framework of analysis for fiscal and monetary interactions. The introduction of this idea has brought new elements to address the following question: Should domination, a form of vertical coordination, prevail over horizontal coordination? The identification of conflicts of interests around the subordination of fiscal goals to monetary objectives was the first step in laying out the foundations of our argumentation. Despite claims from the advocates of monetary dominance on the benefits of this regime for efficient resource allocation and the consequent increase in the general welfare, our political economy analysis of fiscal and monetary interactions suggested a different perspective. We have observed that the financialisation of the monetary policy produced deleterious effects on the fiscal balance of the government. Moreover, this change in the nature of monetary policy prompted a call for a reconsideration on the hypothesis of central bank

impartiality. The conflict of interest around the extensive use of repos for monetary purposes in Brazil made clear the limits of this hypothesis.

The emphasis placed on the doubtful association between coordination and domination represented another important step in treating this question. Goodhart and Schoenmaker (1995) and Blinder (2007) are notorious examples of scholars that have integrated into their work the idea that fiscal and monetary interactions are similar to Wallace's (1987) 'game of chicken', i.e. the two institutions are constantly in competition. Thus, the maximization of the objectives of fiscal and monetary policy necessarily goes through domination, with the 'first mover' having the priority to the set of economic goals over the 'followers'. Under this leader-follower arrangement, if policymaker one goes first, policymaker two is compelled to accommodate the decisions taken by policymaker one. Hence, instead of carrying the message of a 'coordination of equals', fiscal and monetary interactions in the lenses of these authors is more likely to be a 'coordination for the powerful'. This idea appears clearly in Mishkin's (2000: p.5) view of monetary dominance, to whom "a government commitment to price stability is also a commitment to making a monetary policy dominant over fiscal policy, ensuring a better alignment of fiscal policy with monetary policy".

All of this suggested the presence of bias in the very essence of the study of fiscal and monetary interactions. Our analysis attempted to address this disproportionate weight in favour of monetary dominance by introducing the concept of horizontal coordination. The idea of domination among public institutions, whether explicit or implicit, is highly controversial. The significant fiscal costs arising from the extensive use of repos to make inflation converge to the target, established by the (dominant) Brazilian central bank, corroborates this controversy. But then, what would be the reason for still having a relationship of (monetary) dominance between both Brazilian public institutions, based on the priority of macroeconomic objectives (inflation targeting)? From the reflections carried out in this research study, the following conclusion can be drawn: the reason for this priority does not stem solely from an economic rationale.

Economic theory points to a trade-off between monetary and fiscal objectives and, therefore, to the need for a hierarchy of inflation and full employment objectives. And that this hierarchy can only be achieved through domination. However, we argue that the rationale behind this hierarchy is not at the purely economic realm. This rationale is situated at the political level: the determination of priorities is unstable, it will vary according to the economic context, the bargaining strength of interest groups and the force of the conventions – there will thus be periods when inflation takes over from full employment and vice versa. To put it differently, what will determine the prioritisation of objectives (whether full employment or inflation) will be the organization of

interest groups in society. The negligence of this rationale, founded on the principles of political economy, has been a source of misunderstandings in the economic literature.

The political economy analysis of fiscal and monetary interactions provided an innovative approach to the question of the most appropriate coordination scheme. As economic theory considers that there is an insoluble dilemma between the objectives of these two institutions, it is necessary to think beyond conventional economic rationality to foresee objective solutions for this trade-off and, consequently, for a transition from coordination based on domination (vertical) to horizontal coordination. It is noteworthy, however, that this option is not without political costs: Central bankers (and especially the investors) would not be willing to tolerate higher levels of inflation in the short term as a consequence of policies that favour the expansion of demand. The main trade-off here would be between a higher growth rate at the expense of lower returns on financial assets. It should be noted that full employment is not a *sine qua non* technical feature for the satisfaction of the main objective of investors, in specific, and the capitalist mode of production in general: A sustainable and continuous growth in mass production. The automation of the production chain has considerably reduced instability in production costs. Not to say that large business conglomerates have well-defined control over the market structure, which renders the possible costs of non-amortized capital obsolescence less important. Nor is low⁷⁷ inflation necessarily a *technical* constraint of the production system. Moderate Inflation may benefit the production sector and the constitution of large conglomerates (defining integrated production chains according to input-output links), allowing the control of sectorial imbalances that the inflationary process may trigger.

However, low inflation does represent a technical constraint for the financial sector. Evidence from Boyd, Levine and Smith (2001) indicates that there is an important negative relationship between inflation and equity market activity. Within this nonlinear relationship, banking lending activity and stock market development decreases rapidly as inflation rises. Thus, the priority given to one of the two macroeconomic objectives, inflation or full employment, will result from the bargaining strength of interest groups vis-à-vis the policymakers. This lobbying is initially intellectual, where interest groups seek legitimacy through the instruments offered by economic theory. Thus, it is primarily in the political realm that the definition of these macroeconomic objectives anchors any rationale.

⁷⁷ Using the Brazilian Central Bank as a reference, low inflation here stands for a 2-4% rate, while moderate inflation amounts to the rates little above. Inflation target in Brazil for the next three years are: 4% (2020), 3,75% (2021) and 3,5% (2022).

Here we have a dilemma that, possibly, cannot be solved only with narrow thinking on the interaction of these two so-called incompatible objectives (inflation or full employment). In fact, the choice between the two objectives will have limited significance unless it is accompanied by a third objective to counterbalance the distorting effects inherent of vertical coordination. Choosing inflation can only be considered a theoretically correct option if, at the same time, the means are provided to avoid a sharp decrease in purchasing power and the long-term destruction of the monetary structure itself. Favouring price stability only holds true if measures are proposed to tackle the widespread situation of unemployment and the stagnation of economic activity resulting from the monetary tightening. That is, the horizontal coordination of these objectives must be accompanied by other measures which, in the short term, are even more important than the pursuit of these objectives in isolation.

When we consider the problems in these terms, the need to reformulate the theoretical body of fiscal and monetary objectives priorities becomes more evident. We argue that such a reformulation should accord more importance to changes in the *distribution structure* since this instrumental objective is particularly strong and has greater room for manoeuvre by central authorities. If the solution for the 1929 crisis was found in the general theory, and the 1970s crisis in the natural rate of unemployment, the crisis of inequality that remains to be solved, must address the *qualitative aspects* of employment. And the solution to this question necessarily involves a new theory of distribution. Within the mainstream theory, the conflict between full employment and price stability is permanent. But in combining the two theories (monetary and distribution) within a single system, there are new prospects for solving the dilemma between full employment and price stability.

The definitions we find in the literature about the objectives of full employment, price stability and distribution suggest that these objectives are not independent (Debortoli, 2019; Blanchard, 2004; Schmid, 1995; Taylor, 1991; Aglietta, 1978). Instead, the justification for each is the result of the three combined, and not just of isolated analyses. As we have already mentioned, the combination or prioritisation of these objectives will be defined according to the organisation of the interests at the time of the definition of economic policy, since the operational intentions of that policy will be different. The organisation of interests may also influence the power of the various instruments of fiscal, monetary and distribution policies since their flexibility and effectiveness depend on the resistance or diffusion of specific epistemic authorities. This means that, apart from the indeterminacy that is intrinsic to economic policy, it does not have a single solution in theoretical terms.

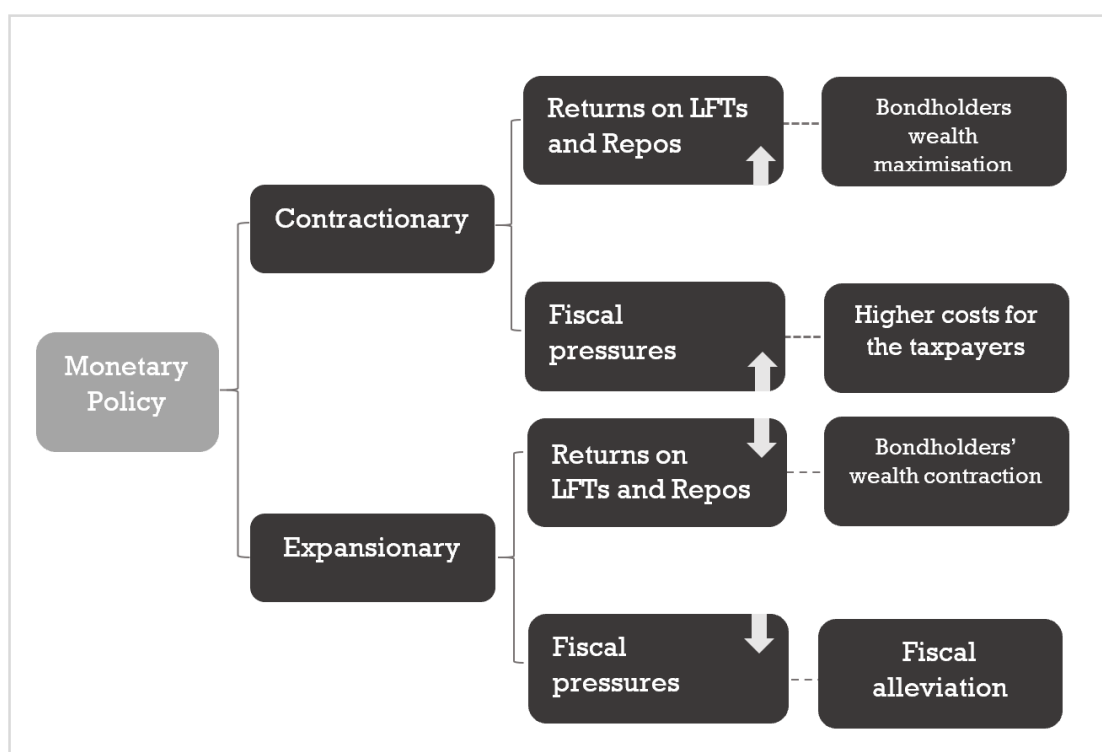
We understand that an independent (dominating) central bank that subordinates fiscal goals is prone to generate negative externalities over the fiscal balance. Whether conscious or not, this is a missing point in Sargent and Wallace (1981) and most of the contributions pledging for a monetary-dominant regime, as they neglect such externalities as a central element in constraining the policy space of both monetary and fiscal authorities. This means that changes in the structure of fiscal and monetary institutional arrangement may have a significant impact on the way and means to achieve price stability. This is the reason why we draw attention to the prospects of horizontal coordination and central bank regulation in the next two following topics of this general conclusion.

4.1 The economic reasons for horizontal coordination instead of vertical coordination

The adoption of the monetarist prescription for fiscal and monetary interactions, conceived under different conditions of those observed in Brazil, has contributed to a situation that will be termed here as the ‘dilemma of the financialisation of monetary policy in Brazil’. Due to the high financial indexation of the Brazilian economy (interest-pegged securities and repo operations), the scope of expansionary or restrictive policies has been delimited to two possible outcomes. Either the monetary authority cooperates with the large financial institutions holding important amounts of interest-pegged instruments and then dominates the fiscal authority in terms of Sargent and Wallace (1981), or the monetary authority dominates the bondholders and cooperates with the taxpayers for rescuing the full potential of fiscal policy in the country.

For example, suppose that the monetary authority wishes to conduct a restrictive monetary policy. In this case, an increase in the interest rate results in the expansion of the wealth of institutions holding securities indexed to the short-term (overnight) rate and, at the same time, it entails an increase in the cost of sovereign debt that will be covered by the fiscal authority (i.e. taxpayers). As a result, the high degree of financial indexation of the Brazilian economy will undermine the fiscal position of the Brazilian government. We can now assume that the monetary authority wishes to pursue an expansionist policy. If so, the opposite situation will be observed. Large institutions are likely to suffer a decline in their net wealth. Nevertheless, this will alleviate the debt burden for the fiscal authority and taxpayers. This dilemma is depicted in Figure 4.1 below:

Figure 4.1 | Dilemma of financialisation of monetary policy in Brazil



Source: Own elaboration.

In this scenario, the possibility of *horizontal* coordination between fiscal and monetary policies should be considered as an alternative to the theoretical proposal of dominance, which recommends the concentration of monetary policy on a single objective. We present two reasons for *horizontal* coordination to be further discussed in future research on the topic.

First, this coordination scheme represents the *raison d'être* of democratic governments. At the heart of this government system, we find the idea of representatives being elected by taxpayers to the pursuit of a set of economic goals that will maximise general well-being, not private benefits. Given that inflation targeting is only one of the objectives that citizens take into account when choosing their representatives, the domination (and not *horizontal* coordination) of monetary goals over fiscal objectives seems illegitimate from the perspective of the democratic process. It constrains the fiscal instrument to be used for the achievement of a broader set of objectives such as the maintenance of full employment, relative price stability, economic growth, enhance credit supply, reduction of inequality and other related targets.

It is worthwhile noting that fiscal and monetary authorities are symmetrically exposed to the influence of interest groups. Both the central bank and the government, are symmetrically exposed to regulatory capture. The difference, however, is that fiscal misbehaviour is now widely

ascertained, while the relationship between monetary choices and private benefits is more complex and less studied in the fiscal and monetary literature. For this reason, any fiscal measure, be it an increase in spending or a tax cut, must be approved by the National Congress. On the contrary, monetary policy decisions, such as the ceiling for repo operations, the rules for exchange swaps or the amount paid to primary dealers, are decisions that are independent of the political cycle, i.e. not subject to the approval of democratically elected representatives.

It is then essential to understand the interaction between the monetary and fiscal authorities when discussing *horizontal* coordination, since the reaction of one will depend, strategically, on the reaction function of the other. This does not mean that targeting inflation is an irrelevant goal – by no means. However, the pursuit of this objective alone might not be the most efficient choice for long-term economic growth and social development. This is why the operational objectives of the central bank, to be conducted democratically, must be horizontally coordinated with governmental objectives and follow the rules compatible with macroeconomic stability. The prospects of long-term economic growth and sustainable social development are correlated with the conduct of a consistent fiscal policy as well as to the central bank capacity to efficiently manage overall liquidity. Liquidity management, under these terms, would give a better use for taxpayers' resources rather than remunerating excess reserves and exacerbates moral hazard risks as observed in the Brazilian case. This issue is addressed by Lacerda (2016: p. 90), who highlights the importance of coordination over dominance:

The discussion is whether greater coordination of fiscal policy to anchor expectations is not absent [to the debate about optimal fiscal interactions]. But here it must also be remembered that high interest rates bring down economic activity even more, negatively affecting tax collection. In other words, interest payments in this case[financial indexation] incurs in the degradation of the fiscal position of the government, not only at the primary level, due to the effect already mentioned, but also at the nominal level, since it raises the cost of financing the debt, generating more nominal deficit, which, in turn, increases the public debt.

In the same vein, Reddy (2011) argues that the separation and hierarchisation of public goals to avoid conflict of interest has, to some extent, resulted in the ineffectiveness of public policy, particularly in terms of coordination in the management of liquidity and sovereign debt. Thus, the congress should be careful to observe whether the use of monetary policy in the pursuit of the narrow objective of price stability is not entailing high social costs and constraining sustainable development via the increases in the public deficit, unemployment or rising inequalities.

The complex linkages between the fiscal and monetary authorities may entail new conflicts within both mandates: it is, therefore, crucial that central bankers and fiscal policymakers seek a better common understanding of the objectives, functions and institutional arrangements for cooperation

and coordination. The government and the central bank should agree to coordinate policies horizontally, based on society's general interest, and then pursue both policies in a decentralized way. Determining how much shock the fiscal and monetary authorities are willing to absorb in the unlikely event of risk materialisation, and how much cost the government is willing to pay to avoid such a shock, should, therefore, be the central subject of horizontal policy coordination (Togo, 2007).

The **second** argument in favour of the horizontal coordination of policies is that market perceptions of coordination failure between the fiscal, and the monetary authorities might affect inflation expectations. This creates a greater need for horizontal coordination, and this may practically speaking, require a broader interpretation of monetary dominance and the subsequent accommodation of the central bank's target by the fiscal authority. It is therefore important to clarify the objectives that should be assigned to the monetary authority that can affect the maturity structure of public debt as well as the overall fiscal position of the Brazilian government. Sovereign debt management has traditionally been conducted in a way as to balancing interest costs and the risk of future hikes in taxes or bank-type runs on the public debt. When these objectives conflict with the cyclical stabilisation of the economy by the central bank, via a restrictive monetary policy, then how should the coordination between the fiscal authority and the central bank be achieved?

This can be illustrated by a situation where the fiscal and monetary authorities would horizontally coordinate to achieve full employment. Thus, the fiscal authority aims to keep GDP close to its potential level and, to this end, carries out a counter-cyclical policy. Besides, the fiscal authority takes into account the threshold level for sound expenditure expansion in the medium and long term, and that stabilises public debt without affecting the overall liquidity in the economy. Therefore, a double objective is assigned to the fiscal authority: GDP growth and stabilization of public debt growth. In the same way, the monetary authority has the objective of inflation targeting but considers the fiscal costs of converging inflation to the target and, hence, also reacts to the level of employment. If GDP is above its potential, the monetary authority brings down interest rates and vice-versa. This simplification has the purpose of illustrating that the horizontal coordination of both authorities around this rule may lead to a new equilibrium where fiscal and monetary goals can be attained simultaneously.

In other words, it is necessary to acknowledge the possibility for monetary policy to affect other variables other than inflation, so to think of possible solutions that imply a higher level of social welfare. As such, monetary policy continues to be an important instrument in the pursuit of price stability, but there is also concern about a potential undermining of the fiscal position.

Consequently, *horizontal* coordination between monetary and fiscal policy would reduce the possibility of conflicts of interest between those responsible for economic policy and uncertainty for the decision-making of economic agents.

As acknowledged by Barro (1986: p.35), “the choice between the two objectives – stabilising the general price level versus stabilising nominal GNP – corresponds to the weights one attaches to the validity of the two competing viewpoints about macroeconomics (surely one of these views must be correct!)”. Therefore, why insist only on monetary dominance? The horizontal coordination of macroeconomic policies has the advantage of taking into consideration the two objectives outside of the framework of domination. With two goals of primary importance, there are no reasons *a priori* for monetary or fiscal policy to focus, isolated, on just one of them. It can be said that vertical coordination is superior to the case of dominance because it allows for better planning of macroeconomic objectives. Moreover, in the case of a marked slowdown (or acceleration) in output or inflation, the joint action of policies allows the economy to move towards the agreed-upon state of equilibrium.

Finally, the issues raised by central bank dominance necessarily involves the consideration of fiscal institutions and their operational rules. The legitimacy of monetary actions will not be sustained in the long term without a higher authority (National Congress) establishing clear objectives and rules of both monetary and fiscal authority. It should be emphasized that the horizontal coordination between monetary and fiscal policies should not be associated with the neglect of the various objectives of the government (inflation, unemployment, etc.). Horizontal coordination is not synonymous of monetary or fiscal passivity. This coordination scheme relates primarily to the transparency in the conduct of macroeconomic policies and represents a structure able to reduce the level of uncertainty that contributes to positive expectations about economic fundamentals.

4.2 Regulating the Regulators (*Quis custodiet ipsos custodes?*)

It is the responsibility of the central bank to contribute to the harmonisation of the financial interests of the investors, the social interests of taxpayers and the fiscal interests of the State. Hence, the observance of the principle of isonomy is fundamental for the monetary authority to behave impartially vis-à-vis the co-existing interests. Along the lines of this research, we formulated an argument for explaining the exposure of the central bank to the regulatory capture problem - here studied in the light of the financialisation of the state theory. In summary, we have assessed three possible situations that may lead to the financialisation of monetary policy.

First, the easiness of a small number of individuals to organise around cohesive group interests (i.e. bondholders), contrasts to the inefficiency of a large number of individuals for organising a collective action to defend the interests of the group (e.g. taxpayers). Second, the existence of ‘regulatory slacks’ (Croley, 2008), where the exercise of state authority is not subject to public knowledge (e.g. the discretionary use of repos). Third, strong asymmetries of information between the central bank, the taxpayers and the bondholders (e.g. when the quantitative and qualitative information about the negative externalities of monetary choices available to the taxpayers is lower than at the disposal of the bondholders). Consequently, the mitigation of these three constraints requires the implementation of appropriate regulatory measures aimed at achieving three objectives: i) re-balancing the representation of interests, with more emphasis on increasing the participation of the taxpayers in regulatory activities; (ii) assigning a regulatory framework to central bank decisions (*ex-ante*); and (iii) developing institutional arrangements for the continued supervision of monetary authority choices (*ex-post*).

Our suggestion of a regulatory framework for central bank choices derives from the necessity to mitigate the risks associated with the financialisation of monetary policy. The operation of powerful financial groups vis-à-vis the central bank may have harmful macroeconomic consequences weighting more for the taxpayers, such as the growth of unproductive public debt, fiscal fragility, erosion of the democratic state and the fiscal incapacity of the government to maintain the provision of basic social services. It thus calls for an intellectual exercise of the institutional mechanisms that might mitigate this risk the most. But before proceeding with the presentation of these mechanisms, mention should be made of two caveats in particular.

First, our rationality is bounded by the cognitive limitations of the mind. In other words, even if we think rationally of prevention and regulation mechanisms, they may not achieve the expected results. Thus, we do not neglect the possibility of having outcomes other than those predicted by our study. Second, as seen in Chapter 1, institutions are not constituted solely by formal rules or norms. Hence, we also think in terms of economic conventions. They work as informal institutions that, while also disciplining patterns of behaviour, influence the way formal institutions are established. Therefore, similar regulations adopted in different countries could produce different results. As North (1990: p. 101) highlights:

Although the rules are the same, the enforcement mechanisms, the way enforcement occurs, the norms of behaviour, and the subjective models of the actors are not. Hence, both the real incentive structures and the perceived consequences of policies will differ as well. Thus, a common set of fundamental changes in relative prices or the common imposition of a set of rules will lead to widely divergent outcomes in societies with different institutional arrangements.

In the light of these two observations, our recommendations are more likely to be successfully implemented once: i) the social, political and economic context in which the regulations are to be introduced is taken into account (in our case specifically, we are considering the specificities of the Brazilian case); ii) gradual reform proposals are preferred to the adoption of radical changes. It is, therefore, based on these assumptions that we formulate our policy recommendations for improving the regulatory framework of fiscal and monetary interactions in Brazil. We present the implementation of the two measures below for further consideration.

4.2.1 Law of monetary responsibility and attribution of regulatory powers to the Independent Fiscal Institution.

This recommendation concerns the establishment of the law of monetary responsibility and its supervision by the Independent Fiscal Institution⁷⁸. In the same spirit of the Law of Fiscal Responsibility, the guideline rules of fiscal management for the use of public resources, the Law of Monetary Responsibility would serve as the regulatory framework for central bank decisions and the accountability of these monetary choices. We suggest six guiding principles for the design of this law. It should:

1. Define monetary objectives based on a sound evaluation of the fiscal impacts it may result.
2. Set the regulatory framework for non-discretionary use of central bank instruments (in contrast to what is currently observed on the extensive use of repos for monetary purposes).
3. Anticipate the risk and institute a ‘map’ of conflict of interests and correct possible distortions that could affect the fiscal balance of the government.
4. Ensure the achievement of social goals oriented towards an equal distributive structure.
5. Foster greater transparency in the interaction with public debt management, in order to prevent strong imbalances between productive and financial public debt (i.e., avoid high rollover and issuance costs).
6. Empower the independent fiscal institution to supervise central bank choices.

⁷⁸ ‘The Independent Fiscal Institution (IFI) of the Brazilian Federal Senate was created in November 2016 to provide transparency to public accounts and to collaborate to improve fiscal management. Because of its technical autonomy, the institution establishes a counterpoint with the Executive Branch, improving the quality of the fiscal statistics and the fiscal policy. The IFI is attached to the Senate, according to the Resolution 42/2016 and is directed by the Board formed by an Executive Director and two other Directors. The key members are politically nominated, and then submitted to public hearings and approval by the Federal Senate economic commission’. Information extracted from the IFI website (https://www12.senado.leg.br/ifi/sobre-1/copy_of_sobre).

The submission of monetary objectives to this regulatory framework derives from the principle of isonomy to which all public institutions are subject to. This should be evident in the prospects of central bank accountability to employ an explanatory memorandum, supported by theoretical justification, about the choice of each of the monetary instruments. This explanatory memorandum should provide a consistent evaluation of the fiscal and social impacts of central bank choices; and the cost-benefit assessment for taxpayers of the objectives the monetary authority intends to achieve. To put it another way: this should clearly demonstrate that the negative externalities over the fiscal position of the government have been estimated and that the choice of instruments is the most appropriate one to achieve the purposes for which they are intended - without prejudice to fiscal instruments.

While recommending this framework, we are not indifferent to the fact that monetary decisions are made in an environment of strong asymmetric information – which, in itself, can be understood in two non-exclusive ways: on the one hand, it means that central bank counterparties have incentives to engage in moral hazard behaviour or adverse selection; On the other, this asymmetry may indicate that the optimal solution for managing inflation and unemployment has not yet been considered. Hence, we consider that enactment of this regulation is forward-looking, with the intention of regulating future behaviour. Consequently, the results generated are to be observed only *a posteriori*. However, although the central bank is not required to solve the asymmetry problem completely, the choice of the instrument (e.g. repos) to achieve a given objective (short-term liquidity management) should not constrain the set of instruments at the disposal of the fiscal authority, neither to undermine the fiscal position of the government.

After all, when a public institution employs a means suitable for the achievement of an end in isolation, but inadequate for a sustainable pursuit of overall macroeconomic stability, we can say that this end is not reached efficiently. The choice of a specific mean to reach an end while creating substantial negative externalities is a serious violation of the principle of government efficiency itself. These considerations on the choice of monetary instruments suggest that a mere statement of failure to achieve an optimal result is insufficient as a principle of accountability. The central bank must demonstrate that, among the possible solutions, the one chosen is the best (in the terms we previously discussed), in particular in comparison to the available alternatives at the time of the choice of the type and volume of monetary instruments. Therefore, we believe that, in addition to complying with the Law of Monetary Responsibility, the theoretical grounds (memorandum) should also include the rationale behind the choice of a certain instrument to the detriment of the others that also appeared to be plausible for the situation under review. Central bank decisions are

indeed made in an environment of uncertainty. However, these circumstances must also be specified in the decision statement. This statement enhances the transparency of central bank operations and can thus contribute to mitigating the risk of financialisation of monetary policy.

Thus, we suggest the permanent central bank supervision by both the Independent Fiscal Institution and a multiplicity of actors. The implementation of this monitoring mechanism should follow the logic of a ‘smoke detector’ than a ‘passport control’. That is, we encourage the establishment of a governance framework of rules, processes and practices in order to detect possible violations of regulatory objectives and to consider the sanctions it may require. In sum, the regulatory mechanisms suggested above are intended to improve central bank accountability. These mechanisms constitute a permanent and simultaneous supervisory system (confusion should not be made with a hierarchical control) that allows for clear signals to be sent to agents that the choice of monetary instruments is subject to non-discretionary rules. We expect that greater compliance of central bank actions to regulatory control will reduce the risk of monetary policy financialisation. For such compliance creates new instances of supervision, which may reduce the central bank’s exposure to situations where impartiality is at stake, or where the view of specific interest groups might prevail.

4.2.2 *A higher involvement of taxpayers in the regulatory process*

The effectiveness of central bank regulation hinges on the active participation of taxpayers. Their participation is central to inhibiting monetary decisions that may benefit a few economic or political interests at the expense of collective losses. The taxpayers cannot, therefore, be dispossessed of the role of vectors of economic and social stability – the public interest is supreme and indispensable. The central bank was established to serve the interests of the society, should monetary policy be captured by the political and economic powers of financial interest groups, the complete inefficiency of the *Rechtsstaat* (constitutional state) would be observed. For the Law of Monetary Responsibility to be implemented *de facto*, it is imperative to ensure greater participation of taxpayers in central bank decisions. The immediate question is to know how to make such participation a viable option? The experience of the Brazilian regulatory State has shown that public hearings alone and the principle of central bank accountability in general, are just partial solutions to the problem of unbalanced representation of interests.

This occurs mainly for two reasons. First, it relies on the dilemma of collective (in)action exposed in chapter 1. The easiness of interest groups with small numbers of agents to organize around their specific demands (especially in comparison to the problems and costs of organizing groups

composed of large numbers of individuals) means that public hearings tend to have greater participation of the regulated but not of taxpayers (Guerra, 2015; Mattos, 2006). This lack of interest in knowing and participating in the regulatory process corroborates Olson's (1965) findings on the logic of collective action, and our use of his theoretical framework for explaining regulatory slacks arising from the taxpayer's inaction. Second, this statement may be explained by the historical and sociological aspects of social organization in Brazil. Historically, the regulatory (or normative in general) process in Brazil does not originate from civil society or the exercise of constant popular pressure. The historical account of the challenges of the governance in Brazil conducted by Diniz (2016) points that normative processes in the country are usually top-down; it is not in the legal culture of the country to have regulations originated within civil society or in the exercise of constant popular pressure (bottom-up). Otherwise stated, the regulatory process is not fruit from spontaneous popular movements, but from decisions taken by the State nowadays and the metropole in colonial times.

This sociological feature seems crucial to understand the low participation in public hearings, as the success of these regulations depends on the spontaneous participation of the taxpayers in general. Since, culturally, this is not the usual form of public participation in Brazil, the tendency for the regulatory instruments, at least in the short and medium-term, is to not be able to mobilize popular participation at all. This aspect is relevant because if in the American model of regulatory agencies popular participation can be reasonably obtained through instruments that make spontaneous participation in decision-making processes possible (Souza, 2002), the mere transposition of this model to Brazil is not sufficient to provide effective participation of the taxpayers. The contexts in which organisations and institutions are inserted are different, inevitably generating different outcomes. We, therefore, believe that, despite the relevance of public hearings and the principle of central bank accountability, it is necessary to think of another complementary mechanism to increase the probability of taxpayers' engagement in regulatory processes.

This complementary mechanism would be designed and jointly carried out by the central bank and the independent fiscal institution. Through the active role of both institutions, this mechanism would target the creation of incentives to increase participation of entities representing the interests of the taxpayers in monetary decisions. This recommendation grounds the idea that, if participation is not obtained spontaneously, it can be encouraged via invitations addressed to entities that can formulate a reasonable evaluation of a regulatory framework for monetary decisions (universities, regional economic councils, associations for fiscal control, think-tankers and NGOs). It should be noted, however, that the Brazilian law has contemplated this solution for judicial procedures

involving issues of technical complexity. Article 33 of the Administrative Procedure Law (n. 9785/99) establishes that:

Administrative bodies and entities, in relevant matters, may establish other means of participation of administrators, directly or through legally recognized organizations and associations.

The problem does not, therefore, stem from the non-existence of the law. Here we identified a practical situation where (the lack of) North's (1991) enforcement embodies a regulatory problem. We, therefore, argue that the Independent Fiscal Institution should act as this enforcement agent, serving as a hub between monetary decisions and society. As this institution constitutes a group of few members, with cohesive interests, the institution would have better conditions and lower organizational costs for the periodical supervision of Central Bank activities – contrasting though to the spontaneous organization of the interests of the large and disorganized group of the taxpayers. Thus, the mechanism of 'interest balancing' before the central bank would stand as the guiding principle of this new regulatory framework.

We believe that this new institutional framework has the potential to mitigate the risk of financialisation of monetary policy in three different manners: i) There would be more transparency in central bank decisions on the type and magnitude of monetary instruments used to achieve price stability; ii) The interests of taxpayers and bondholders would be weighted and regulated through the enforcement powers conferred on the Independent Fiscal Institution; and iii) it will create incentives for the central bank to reduce information asymmetries between bondholders and taxpayers. The taxpayers, once involved in the decisions of the central bank, have more information to understand the law of monetary responsibility (and its constant evolution), but also to stand in opposition to any monetary choice deviating from this law or the Constitution. And, hence, they can turn to the Legislative, Judiciary or Executive Branches.

While it is reasonable to state that the creation of institutionalized channels of participation – implemented through the enforcement of the independent fiscal authority – may attenuate the regulatory slacks, it is also true that this solution remains dependent on the participation of taxpayers. The main focus of public institutions and society as a whole should be on the mitigation of the risks associated with the financialisation of monetary policy, by identifying sensitive points where capture can take place. If the Brazilian central bank continues to create incentives for the capture of the monetary instrument for short-term liquidity management (repos), this could lead to a regulatory crisis in the country, with harmful consequences for the entire population that benefits from public services. Thus, the relevant interest in moving forward the agenda of research

on the financialisation of monetary policy. In the light of this theory, we attempted to provide a piece of valuable knowledge on how and why the central bank is exposed to capture by financial interests and the risks involved in the consequent defence of these interests to the detriment of those of the taxpayers. We also argued that this risk of capture would increase if the national congress approves the full independence of the central bank of Brazil (currently, it has been conferred autonomy). In Brazil, the privilege of informal bargaining connections facilitates the emergence of regulatory slacks in which the financialisation of monetary policy could expand furthermore. Thus, once independent, the monetary authority would be more susceptible to capture. It stems from the fact that the choice of monetary instruments would be taken even further away from public scrutiny.

To conclude, this political economy analysis of fiscal and monetary interactions aimed at showing that mainstream positions are not necessarily the most appropriate. We hope that this study, which has tried to clarify a real problem in abstract terms, may inspire future research to demonstrate the pertinence of our arguments through a quantitative analysis of the ‘unpleasant arithmetic of monetary dominance’. We are not in a position here - nor is this our specific intention - to construct a quantitative argument that rigorously substantiates our proposition, but we hope this research will find specific significance within economic theory. Clearly, another political constraint has yet to be introduced, which may oppose the establishment of this regulatory framework inspired by the idea of horizontal coordination. The central bank and the government decisions are subject to the limits of internal and external means of coercion, as discussed in chapter 3, expressed in the investor’s ability to exercise discipline over fiscal and monetary policy choices.

As a consequence of this coercion, the prioritization or combination of the objectives of both institutions shall vary according to the bargaining strength of interest groups. Yet this is none other than the typical singularity that is attributed to any decision in public choices. However, it does not mean that the creation of an institutional arrangement for fiscal and monetary interactions based on horizontal coordination and framed by the law of monetary responsibility is out of reach. We have demonstrated that the financialisation of monetary policy takes form through economic and political channels, but, first and foremost, it takes place at the realm of ideas – with the legitimacy of the often-unobserved power of the idea of dominance in economic policy. A conversation between the main characters in the epic *Ben-Hur*, therefore, provide valuable insight on the way for a paradigm shift towards horizontal coordination:

“You ask how to fight an idea. Well, I’ll tell you how: with another idea.”

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