HAL
open science

La proposition 100% monnaie des années 1930 : clarification conceptuelle et analyse théorique

Samuel Demeulemeester

To cite this version:

Samuel Demeulemeester. La proposition 100% monnaie des années 1930 : clarification conceptuelle et analyse théorique. Economies et finances. Université de Lyon, 2019. Français. NNT : 2019LYSEN068 . tel-03042628

HAL Id: tel-03042628

https://theses.hal.science/tel-03042628v1

Submitted on 7 Dec 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Numéro National de Thèse : 2019LYSEN068

THÈSE de DOCTORAT DE L'UNIVERSITÉ DE LYON
opérée par
l'École Normale Supérieure de Lyon

École Doctorale N° 486
Sciences Économiques et de Gestion

Discipline : Sciences économiques

Soutenue publiquement le 06/12/2019, par :

Samuel DEMEULEMEESTER

La proposition 100% monnaie des années 1930 : clarification conceptuelle et analyse théorique

---

Devant le jury composé de :

DIMAND, Robert W.	Professeur	Brock University, Canada	Rapporteur
RUBIN, Goulven	Professeur	Université Panthéon Sorbonne Paris 1	Rapporteur
RIVOT, Sylvie	Professeure	Université de Strasbourg	Examinatrice
TAVLAS, George S.	Membre du Directoire	Banque centrale de Grèce	Examinateur
GOMEZ BETANCOURT, Rebeca	Professeure	Université Lumière Lyon 2	Directrice de thèse
LE MAUX, Laurent	Professeur	Université de Brest et Université Paris 8	Co-directeur

École Normale Supérieure de Lyon

École Doctorale de Sciences Economiques et de Gestion
Faculté des Sciences Economiques et de Gestion
TRIANGLE – UMR n° 5206 du CNRS

La proposition 100% monnaie des années 1930 : clarification conceptuelle et analyse théorique

Par Samuel Demeulemeester

Thèse de doctorat en Sciences économiques

Sous la direction de Rebeca Gomez Betancourt et de Laurent Le Maux

Soutenue publiquement le 6 décembre 2019

Membres du jury :

M. Robert W. Dimand, Professeur de Sciences économiques à l'Université de Brock (Canada). Rapporteur.

M. Goulven Rubin, Professeur de Sciences économiques à l'Université de Paris 1. Rapporteur.

Mme Sylvie Rivot, Professeure de Sciences économiques à l'Université de Mulhouse. Examinatrice.

M. George S. Tavlas, Membre du Conseil Général et du Conseil de la Politique Monétaire, Banque de Grèce. Examinateur.

Mme Rebeca Gomez-Betancourt, Professeur de Sciences économiques à l'Université Lumière Lyon 2. Directrice de thèse.

M. Laurent Le Maux, Professeur de Sciences économiques à l'Université de Brest, chercheur à l'Université de Paris 8 (LED). Directeur de thèse.

Remerciements

Je tiens à remercier l'ensemble des personnes qui, de manière directe ou indirecte, ont contribué à la réalisation de cette thèse.

Mes remerciements s'adressent tout d'abord, bien entendu, à mes deux directeurs de thèse, Rebeca Gomez Betancourt et Laurent Le Maux.

Rebeca, avec qui je suis initialement entré en contact lors d'un échange à distance, a très rapidement accepté de co-encadrer cette thèse, avant même de m'avoir rencontré en personne. Je lui suis grandement redevable de cette confiance, et ne la remercierai jamais assez pour son appui constant dans mes nombreuses démarches, ses conseils et encouragements du début à la fin, et tout ce qu'elle m'a appris sur le métier de chercheur.

Laurent, qui avait déjà accepté de superviser mon mémoire de recherche en Master 2, n'a pas non plus hésité à m'accompagner sur cette thèse ; je lui en suis grandement redevable également. Je le remercie infiniment pour tout le temps passé à relire en détail mes travaux, pour ses nombreux commentaires critiques et ses conseils avisés, qui ont été des atouts précieux dans la réalisation de ce travail de recherche.

De manière générale, je suis extrêmement reconnaissant à la fois envers Rebeca et Laurent pour leur grande disponibilité et réactivité lors de ces quatre années de doctorat.

Mes remerciements s'adressent ensuite à tous ceux qui, à un moment ou à un autre, ont pris le temps de lire et commenter mes travaux, et/ou avec lesquels j'ai pu avoir des échanges constructifs. Je pense en particulier à Juan Carlos Acosta, Lucy Brillant, Joachim De Paoli, Robert W. Dimand, James Forder, André Grjebine, Thibault Guicherd, David Laidler, Ronnie J. Phillips, Jens Reich, George S. Tavlas, Roger Sandilands, et Adrien Vila (que je remercie particulièrement pour nos nombreuses discussions). Je remercie aussi Jennifer Santos Madriaga pour sa relecture de la traduction anglaise de cette thèse.

Je tiens à remercier Robert W. Dimand, Sylvie Rivot, Goulven Rubin et George S. Tavlas de me faire l'honneur de figurer dans mon jury de soutenance.

Je remercie grandement Ronnie J. Phillips pour m'avoir spontanément donné accès à son fonds d'archives électroniques.

J'adresse un grand merci de manière générale à l'ensemble des membres du laboratoire Triangle pour leur accompagnement durant ces quatre années. Je remercie tout

particulièrement Ludovic Frobert et Marie Lucchi pour leur soutien dans certaines démarches. Mes remerciements vont également à Pascal Allais pour sa grande disponibilité, et à l'ensemble de mes collègues doctorants et enseignants-chercheurs qu'il fut un plaisir de côtoyer pendant toutes ces années.

Je tiens à remercier Jérôme Blanc et Aurélien Eyquem pour avoir accepté de faire partie de mon comité de suivi doctoral, pour le temps qu'ils y ont consacré, et les conseils qu'ils m'ont donnés en ces occasions.

Je remercie le Centre interuniversitaire de recherche sur la Science et la Technologie (CIRST) de Montréal pour avoir accepté de m'accueillir pendant quatre mois, ainsi que Till Düppe (UQÀM), Martine Foisy (CIRST) et Isabelle Royer (École doctorale ED SEG) qui ont facilité la réalisation de ce séjour de mobilité.

Je remercie aussi le personnel du département des *Manuscripts and Archives* de la bibliothèque de l'Université de Yale, ainsi que celui du *Special Collections Research Center* de la bibliothèque de l'Université de Chicago, pour leur accueil lors de mes travaux sur les archives d'Irving Fisher et d'Henry Simons.

Je tiens à remercier, enfin, l'ensemble de mes proches, famille et amis, pour tout ce qu'ils m'apportent au quotidien. Il est évident que cette thèse n'aurait jamais pu voir le jour sans leur soutien, et je ne les remercierai jamais assez.

La proposition 100% monnaie des années 1930 : clarification conceptuelle et analyse théorique

Résumé : Cette thèse étudie la proposition 100% monnaie, telle qu'elle fut formulée aux États-Unis dans les années 1930 par Henry Simons, Lauchlin Currie et Irving Fisher notamment. L'essence de cette proposition est de divorcer la création de monnaie des prêts de monnaie : les dépôts servant de moyens de paiement seraient soumis à 100% de réserve en monnaie légale, conférant à l'État un monopole de la création monétaire. Cette idée de réforme étant régulièrement sujette à confusion, nous entreprenons de clarifier son concept et d'étudier ses principaux arguments. Le chapitre 1 rappelle l'histoire du plan. Au chapitre 2, nous montrons que le 100% monnaie ne saurait être considéré comme un simple avatar des idées de la *Currency School* : contrairement à l'Acte de Peel de 1844, il ne contient en soi aucune règle d'émission, laissant ouvert le débat « règle ou discrétion ». Au chapitre 3, distinguant entre deux grandes approches du 100% monnaie, nous montrons que celui-ci n'implique nullement d'abolir l'intermédiation bancaire basée sur les dépôts d'épargne. Au chapitre 4, nous analysons, à travers les travaux de Fisher, l'objectif principal du 100% monnaie : celui de mettre fin au comportement procyclique du volume de monnaie, causé par le lien de dépendance entre création monétaire et prêts bancaires. Au chapitre 5, nous étudions un autre argument du 100% monnaie : celui de permettre une réduction de la dette publique, en rendant à l'État l'intégralité du seigneuriage – argument souvent critiqué, dont nous montrons qu'il n'est pourtant pas infondé. Alors que le 100% monnaie suscite un regain d'intérêt depuis la crise de 2008, il nous a paru fondamental de clarifier ces questions.

Mots clés : 100% monnaie, création monétaire, Irving Fisher, Plan de Chicago, Henry Simons, Lauchlin Currie.

The 100% money proposal of the 1930s: conceptual clarification and theoretical analysis

Abstract: This thesis studies the 100% money proposal, such as it was formulated in the United States in the 1930s by Henry Simons, Lauchlin Currie and Irving Fisher in particular. The essence of this proposal is to divorce the creation of money from the lending of money: deposits serving as means of payment would be subjected to 100% reserves in lawful money, awarding the state a monopoly over money creation. Because this reform idea is regularly subject to confusion, we endeavour to clarify its concept and study its main arguments. Chapter 1 recalls the history of the plan. In chapter 2, we show that the 100% money proposal ought not to be viewed as a mere avatar of the Currency School ideas: contrary to Peel's Act of 1844, it contains no issuing rule by itself, leaving open the debate "rule or discretion". In chapter 3, distinguishing between two broad approaches to the 100% money proposal, we show that it does not imply abolishing bank intermediation based on savings deposits at all. In chapter 4, we analyse, through Fisher's works, the main objective of the 100% money proposal: that of putting an end to the pro-cyclical behaviour of the volume of money, caused by the dependency relationship between money creation and bank loans. In chapter 5, we study another argument of the 100% money proposal: that of allowing a reduction of public debt, by returning the totality of seigniorage back to the state—an oft-criticised argument, which, as we show, is not unfounded however. While the 100% money proposal has been arousing renewed interest since the 2008 crisis, we thought it was fundamental to clarify these issues.

Key words: 100% money, money creation, Irving Fisher, Chicago Plan, Henry Simons, Lauchlin Currie.

À mes parents

Avis au lecteur

Les chapitres composant cette thèse (à l'exception du chapitre 1) ont été rédigés sous forme d'articles indépendants les uns des autres. Pour cette raison, il existe parfois certaines répétitions d'un chapitre à l'autre. Nous prions le lecteur de bien vouloir nous en excuser.

SOMMAIRE

Remerciements **3**

Résumé **5**

Avis au lecteur **8**

INTRODUCTION GÉNÉRALE **11**

1. La dépendance de la monnaie envers les banques : une source de préoccupation croissante depuis la crise de 2008 13

2. L'essence de la proposition 100% monnaie : rendre la monnaie indépendante des prêts 15

3. La proposition 100% monnaie en histoire de la pensée économique 18

4. Objectif et organisation de la thèse 21

Chapitre 1 – Historique de la proposition 100% monnaie du XVIIIe siècle à nos jours **25**

1. La proposition 100% monnaie du XVIIIe siècle à la Première Guerre mondiale : les précurseurs 25

2. La proposition 100% monnaie des années 1930 34

3. La proposition 100% monnaie de la Seconde Guerre mondiale à la fin du XXe siècle 58

4. Le regain d'intérêt pour la proposition 100% monnaie suite à la crise de 2008 65

PARTIE 1 – LA PROPOSITION 100% MONNAIE : CLARIFICATION CONCEPTUELLE **73**

Chapter 2 – The 100% money proposal of the 1930s: an avatar of the Currency School reform ideas? **75**

Introduction 75

1. Divorcing the issuing of money from the lending of money: a point of agreement between the Currency School and the 100% money authors 78

2. The 'currency principle' as an automatic policy rule: a specificity of the Currency School 83

3. Applying the separation of functions to the circulating medium as a whole: a specificity of the 100% money proposal 87

4. Central banking's place within a system of separate monetary and banking functions 92

Conclusion 96

Appendix 1. The monetary and banking systems under the respective Currency School and 100% money proposals 98

Chapter 3 – The 100% money proposal and its implications for banking: The Currie-Fisher approach versus the Chicago Plan approach **101**

1. Introduction 101

2. Common features of the two approaches 103

3. Divergences about the definition of money 106
4. Divergences about the leading causes of monetary instability 109
5. Divergences about banking reform 115
6. The lack of distinction between the two approaches and its consequences 122
7. Conclusion 124

PARTIE 2 – LA PROPOSITION 100% MONNAIE : ANALYSE THÉORIQUE 127

Chapter 4 – Investigating the 'Debt-Money-Prices' Triangle: Irving Fisher's Long Journey Toward the 100% Money Proposal 129

Introduction 129
1. Fisher's analysis of monetary instability: some constant features 131
2. Fisher's early analysis of credit cycles (1896-1911): focusing on the *P*-to-*D* causality 136
3. The debt-deflation theory of great depressions (1932-33): shifting the focus toward the *D*-to-*M'*-to-*P* causality 139
4. The money-debt tie analysis and 100% money proposal (1935): finally focusing on the *D*-to-*M'* causality 143
Summary and conclusion 149
Appendix 1 – Typical bank balance sheet under the respective 10% and 100% money systems 151

Chapter 5 – Would a state monopoly over money creation allow for a reduction of national debt? A study of the 'seigniorage argument' in light of the '100% money' debates 153

Introduction 153
1. Money creation and the seigniorage benefit 155
2. The 100% money proposal and its claim to reduce national debt 160
3. Hart's criticism, and the refutation of the claim that the 100% money proposal would allow for any reduction of national debt 166
4. The limitations of Hart's criticism: the need to consider all sources and beneficiaries of the seigniorage profit 169
Summary and conclusion 173

CONCLUSION GÉNÉRALE 175

1. Nos résultats de recherche 177
2. Limites de la thèse et pistes de recherche à approfondir 181

BIBLIOGRAPHIE 189

INDEX DES NOMS D'AUTEURS 223

INTRODUCTION GÉNÉRALE

> "[D]eposits . . . are *bank debt organized into currency* . . . The organizing of debt into currency is the prevailing error of this commercial age."
>
> Charles H. Carroll, marchand du Massachusetts, 1858.

> "Most money today is created by private sector institutions – banks. This is the most serious fault line in the management of money in our societies today."
>
> Mervyn King, ex-gouverneur de la Banque d'Angleterre, 2016.

1. La dépendance de la monnaie envers les banques : une source de préoccupation croissante depuis la crise de 2008

La récente crise financière globale de 2008 a pris au dépourvu une grande partie des économistes. Elle a mis au grand jour l'une des principales limites de la théorie macroéconomique dominante : celle de ne pas prendre suffisamment en compte la sphère monétaire et financière. Comme le résume Martin Wolf (2014a, p. 191), éditeur en chef du *Financial Times*: "First and foremost, this is a crisis of economics and particularly of conventional macroeconomics"[1]. Certains efforts de renouvellement ont été amorcés depuis, mais, comme nombre d'observateurs l'ont fait remarquer, il s'agit le plus souvent de tentatives visant à amender la théorie existante à la marge, plutôt qu'à entreprendre une remise en cause plus en profondeur de celle-ci. Pourtant, il y a de fortes raisons de penser que la récente crise financière ne sera pas la dernière. Comme le mettent en lumière les travaux d'Aliber et Kindleberger ([1978] 2015) ou de Reinhart et Rogoff (2009), par exemple, les crises monétaires et financières ont été un phénomène remarquablement récurrent lors de ces quarante dernières années. Il est devenu évident pour beaucoup que ces crises ne sont pas simplement dues à des chocs extérieurs à l'économie, mais plutôt au fonctionnement intrinsèque de celle-ci.

[1] Il précise davantage : "For the dominant school of neoclassical economics, depressions are a result of some external (or, as economists say, 'exogenous') shock, not of forces generated within the system. The opposite and, in my view, vastly more plausible possibility is that the crisis happened partly because the economic models of the mainstream rendered that outcome ostensibly so unlikely in theory that they ended up making it far more likely in practice" (Wolf 2014a, pp. xviii-xix). Mervyn King (2016), gouverneur de la Banque d'Angleterre de 2003 à 2013, abonde dans ce sens : "Most of the large-scale econometric models used by governments and central banks to make forecasts . . . afford little role for money or banks, a property that has been a source of embarrassment, both intellectual and practical" (p. 305). Sur l'échec de la théorie macroéconomique dominante à intégrer de manière satisfaisante la sphère monétaire et financière, voir également Ingrao et Sardoni (2019).

Le fonctionnement des institutions monétaires et financières, et des banques en particulier, est régulièrement mis en exergue. Les banques commerciales, en effet, sont davantage que de simples intermédiaires financiers. Les promesses de payer qu'elles émettent sous forme de soldes de comptes courants ne sont pas seulement des créances de leurs déposants envers elles : étant utilisées pour le règlement des transactions, ces promesses de payer sont elles-mêmes des moyens de paiement, constituant aujourd'hui la majeure partie de la masse monétaire[2]. Cette dépendance du moyen d'échange envers l'activité bancaire a été pointée du doigt par nombre d'observateurs des crises récentes[3]. Lors des phases de boom, en effet, la création de monnaie par le mécanisme des prêts bancaires contribue à amplifier les bulles spéculatives qui se développent sur les marchés où les banques prêtent le plus : ceux des produits financiers et de l'immobilier, dont les prix sont régulièrement sujets à des spirales à la hausse[4,5]. Lorsque ces bulles éclatent, la même dépendance de la monnaie envers les banques entretient cette fois une spirale à la baisse. D'un côté, les banques ne souhaitent plus investir dans des actifs dont la valeur se déprécie, ni prêter à des agents dont la solvabilité se détériore – et cherchent, par ailleurs, à renforcer leurs réserves pour faire face à d'éventuelles demandes de retraits massives : l'offre de prêts diminue. De l'autre, les agents qui se sont surendettés lors de la phase de boom ne souhaitent pas continuer à s'endetter davantage, ni à investir dans des biens dont le cours est désormais à la baisse – et préfèrent au contraire se désendetter pour assainir leur bilan[6] : la demande de prêts diminue également.

---

[2] Il subsiste cependant des désaccords entre les économistes sur la manière de définir la monnaie. Nous abordons cette question au chapitre 3. Dans la présente thèse, le terme *monnaie* sera généralement utilisé comme synonyme de moyen de paiement.

[3] Selon King (2016), par exemple : "the fragility of our financial system stems directly from the fact that banks are the main source of money creation" (p. 8). "Most money today is created by private sector institutions – banks. This is the most serious fault line in the management of money in our societies today" (p. 86).

[4] Ainsi, selon Aliber et Kindleberger ([1978] 2015) : "Asset bubbles – most asset bubbles – are a monetary phenomenon and result from the rapid growth of the supply of credit" (p. 18). "One theme of this book is that the cycle of manias and panics results from the pro-cyclical changes in the supply of credit, which increases rapidly in good times, and then when economic growth slackens, the rate of growth of credit declines sharply" (p. 20). "The increases in the supplies of credit generally were provided by banks" (p. 341).

[5] Il est à noter que les prix des actifs en question ne sont généralement pas inclus dans les indices de prix que les banques centrales cherchent à stabiliser, celles-ci se concentrant sur les seuls indices des prix à la consommation. La question de savoir si la politique monétaire doit également tenir compte des prix d'actifs continue d'être sujette à débat. Pour une argumentation dans ce sens, voir par exemple Alchian et Klein (1973).

[6] Cette considération est au cœur de la théorie des récessions de bilan (*balance sheet recessions*) développée par l'économiste Richard Koo (2008).

Dans ces conditions, même des taux d'intérêt nominaux extrêmement bas peuvent ne pas suffire à relancer la dynamique du crédit. Pour enrayer la contraction de monnaie bancaire, les banques centrales se sont donc vues contraintes, lors de la récente Grande Récession, d'augmenter drastiquement la base monétaire par des mesures non conventionnelles – notamment l'« assouplissement quantitatif » (*quantitative easing*), consistant à injecter massivement de la monnaie centrale dans les réserves du système bancaire via des achats de titres sur l'*open market*. La base monétaire s'est ainsi considérablement élargie dans les pays ou ensembles de pays ayant entrepris ce type de mesures (Japon, Royaume-Uni, États-Unis et zone euro essentiellement), permettant au volume total des moyens de paiement de se maintenir en dépit de la contraction du crédit bancaire[7]. Il n'est donc guère étonnant que la crise de 2008 ait renforcé chez beaucoup la conviction qu'une réforme en profondeur du système monétaire était nécessaire. Un certain nombre de réflexions se sont ainsi dirigées vers la question du lien entre monnaie et crédit, pointant du doigt le fait que le moyen d'échange soit largement un sous-produit de l'activité bancaire. Dans ce contexte, une vieille idée de réforme a fait sa réapparition dans les débats : la proposition « 100% monnaie ».

2. L'essence de la proposition 100% monnaie : rendre la monnaie indépendante des prêts

La proposition 100% monnaie, comme nous le verrons au chapitre 1, fut notamment préconisée aux États-Unis dans le contexte de la Grande Dépression des années 1930. Parmi ses théoriciens figuraient notamment Henry C. Simons (1899-1946) de l'Université de Chicago – l'auteur principal du « Plan de Chicago » qu'il formula avec plusieurs de ses collègues –, Lauchlin Currie (1902-1993) de l'Université d'Harvard, et Irving Fisher (1867-1947) de l'Université de Yale. « L'essence du plan 100% », selon Fisher ([1935] 1945, p.

[7] Une telle interprétation monétaire de la crise de 2008 – et des réponses qui y ont été apportées – est par exemple avancée par King (2016, pp. 182-83) : "Since most money comprises bank deposits, the fall in deposits meant that the amount of money available to finance spending actually fell. If left unchecked, that threatened a depression. So the task of the Bank [of England] was to ensure that the amount of money in the economy grew neither too quickly nor too slowly. In the particular circumstances of 2009, that meant creating more money. . . . Economists produced convoluted explanations of how and why this extra money might affect the economy through changes in risk premiums and other arcane aspects of the financial system. Ben Bernanke, then Chairman of the Federal Reserve, said in January 2014 that 'the problem with QE is it works in practice, but it doesn't work in theory'. Perhaps there was a problem with the theory."

xvii, ma traduction[a]), « est de rendre la monnaie indépendante des prêts ; c'est-à-dire, de divorcer le processus de création et de destruction de monnaie de l'activité bancaire ».

Pour cette raison, la proposition 100% monnaie préconise de confier à l'État un monopole intégral sur la création de monnaie, y compris scripturale. La circulation de tout autre moyen de paiement serait interdite. Les promesses de payer émises par les banques – notamment sous forme de dépôts – ne pourraient donc plus être utilisées en règlement des transactions, sauf à la condition d'être couvertes à 100% par des réserves en monnaie légale[8]. À cette fin, les « auteurs 100% » préconisaient généralement de diviser les banques en deux départements : un département de virement, dont les dépôts, servant à effectuer des paiements, seraient couverts à 100% par de telles réserves (et ne pourraient donc servir au financement des prêts et investissements) ; et un département des prêts, dont les dépôts, servant à collecter l'épargne et à financer l'investissement, ne resteraient couverts que de manière fractionnaire par des réserves (mais ne pourraient servir de moyens de paiement)[9].

La création ou destruction de monnaie, dans un tel système, serait exercée exclusivement par l'État – plus précisément, selon la plupart des versions du plan, par une autorité monétaire *ad hoc*, indépendante du gouvernement (telle que la « Commission monétaire » ["Currency Commission"] dans le plan de Fisher). Cette autorité monétaire serait chargée de mettre en œuvre l'objectif de politique monétaire qui lui serait assigné par le pouvoir législatif – tel que, typiquement, un objectif de stabilisation du niveau général des prix. Les injections de monnaie pourraient être réalisées de plusieurs manières : soit par avances de l'autorité monétaire au Trésor, l'État injectant ensuite ces sommes dans l'économie par voie de dépense ou de crédit d'impôt (voire par le versement d'une allocation aux citoyens)[10] ; soit par

---

[a] "The essence of the 100% plan is to make money independent of loans; that is, to divorce the process of creating and destroying money from the business of banking."

[8] Les auteurs des années 1930 se concentraient sur les promesses de payer issues du crédit bancaire. Leur analyse est évidemment transposable aux promesses de payer issues du crédit commercial (telles que les billets à ordre ou lettres de change) qui, de la même manière, servent de moyens de paiement lorsqu'elles sont transférées par endossement. Les effets de commerce endossables remplissaient notamment un grand rôle dans la circulation monétaire de la France du XIXe siècle (voir Hautcœur 2011), dont le comportement cyclique a été analysé en détail par Clément Juglar ([1862] 1889).

[9] Certaines versions de la proposition 100% monnaie, cependant, allaient jusqu'à préconiser de mettre fin à toute activité bancaire basée sur le principe des réserves fractionnaires. Tel était le cas, notamment, du Plan de Chicago. Nous abordons cette question au chapitre 3. Pour une présentation des bilans bancaires selon ces différents types de réforme, le lecteur peut se référer au chapitre 2 (annexe 1), au chapitre 3 (section 5) ou au chapitre 4 (annexe 1).

[10] Dans les faits, ces avances seraient non remboursables, ou automatiquement renouvelées, tant qu'aucune contraction de la masse monétaire ne serait requise. Dans une économie en croissance, nécessitant une augmentation continue de la quantité de monnaie, l'État bénéficierait ainsi pleinement du revenu du seigneuriage associé à la création monétaire. Voir à ce sujet le chapitre 5, section 2.3.

opérations d'*open market*. Ces injections ne pourraient plus s'effectuer via la fenêtre d'escompte, sauf peut-être en cas d'urgence, comme le prévoyaient certains auteurs[11]. Il est à noter que la première de ces modalités (avances au Trésor) supposerait une certaine coordination entre l'autorité monétaire et l'administration fiscale[12], tandis que les deux dernières (*open market* et réescompte) supposeraient que les banques restent des intermédiaires dans la transmission de la monnaie nouvellement créée à l'économie.

La proposition de réforme 100% monnaie est motivée par plusieurs arguments. Le principal est de mettre fin à l'amplification des épisodes de booms et de dépressions par la création/destruction monétaire attachée aux prêts bancaires : en rendant la monnaie indépendante des prêts, il serait mis fin aux processus cumulatifs par lesquels toute hausse de l'endettement amène une hausse du volume de monnaie, elle-même amenant une hausse des prix et des profits, amenant une nouvelle hausse de l'endettement, et ainsi de suite – et inversement en phase de désendettement. La création monétaire, en d'autres termes, ne serait plus source de cercles vicieux entretenant alternativement des spirales à la hausse ou à la baisse des prix. Un second argument est de nature fiscale : en conférant à l'État le privilège exclusif de la création monétaire, la proposition 100% monnaie ferait bénéficier le Trésor public de l'intégralité du seigneuriage. Par ailleurs, l'État n'aurait plus à creuser ponctuellement son déficit pour maintenir le volume de monnaie en circulation lorsque le secteur privé se désendette : tout mouvement de liquidation des prêts bancaires cesserait d'entraîner *ipso facto* une destruction de monnaie (de plus, selon les « auteurs 100% », le surendettement lui-même serait rendu moins important lors des phases de boom). À cela s'ajoutent nombre d'arguments supplémentaires : les dépôts de transaction, étant couverts à 100% par des réserves, deviendraient « indestructibles » (Fisher 1936a, p. 409), et le système de paiement serait ainsi totalement à l'abri des crises bancaires ; les crises bancaires elles-mêmes seraient rendues moins fréquentes et moins graves, car elles cesseraient d'être causées ou renforcées par les fluctuations de la masse monétaire ; la monnaie ne dépendant plus des

[11] Voir par exemple Fisher ([1935] 1945, pp. 88, 202). Il importe cependant de noter que les opérations de réescompte en tant que telles pourraient être maintenues sans enfreindre les principes du 100% monnaie, dès lors qu'elles seraient financées à partir de monnaie préexistante, et non nouvellement créée à cet effet. La Commission monétaire elle-même, ou les *Federal Reserve Banks*, pourraient exercer cette fonction de banque des banques, distincte de la fonction d'autorité monétaire. Voir à ce sujet le chapitre 2, section 4.

[12] Simons ([1934] 1948, pp. 320-21n7), notamment, insistait sur ce point : "Ultimate control of the currency . . . lies in the management of government expenditure, taxation, and borrowing; and the establishment of a separate monetary authority implies a division of powers which would be workable only with thoroughgoing co-ordination and cooperation. . . . Monetary policy must ultimately be implemented through fiscal arrangements." Voir aussi Simons (1936, pp. 22-24, 29-30) et Mints (1946, pp. 63-64).

banques, le besoin de réglementation de l'activité bancaire par l'État serait allégé, et les menaces de nationalisation du secteur bancaire seraient écartées ; l'autorité monétaire pourrait se concentrer sur son seul et unique objectif monétaire (par exemple, stabiliser la valeur de l'unité de monnaie) sans avoir à assurer en même temps la supervision du secteur bancaire (cette fonction, dorénavant dénuée de signification monétaire, pourrait échoir à une autre institution) ; le taux d'intérêt cesserait d'être manipulé par l'autorité monétaire (la création monétaire ne dépendant plus des prêts) et pourrait atteindre son niveau « naturel » fixé par la seule confrontation entre offre et demande de prêts ; la stabilité accrue qui prévaudrait sous le système 100% permettrait d'améliorer le climat des affaires et d'accroître les profits, y compris pour les banques ; etc. De manière plus générale, dans le contexte des années 1930, la réforme 100% monnaie était souvent présentée comme une condition nécessaire à la survie même du capitalisme.

3. La proposition 100% monnaie en histoire de la pensée économique

Nous présentons l'historique de la proposition 100% monnaie, du XVIIIe siècle à nos jours, dans le chapitre 1 qui complète cette introduction générale. On trouve déjà chez David Hume et David Ricardo, ainsi que chez les auteurs de la *Currency School*, l'idée de mettre fin à la création de monnaie papier par les banques. La proposition de mettre fin à toute création de moyens de paiement (y compris scripturaux) par le mécanisme des prêts – qui constitue, comme nous venons de le voir, l'essence du 100% monnaie – apparaîtra vers le milieu du XIXe siècle aux États-Unis, sous la plume d'auteurs tels que Charles H. Carroll en particulier. En Europe, on retrouve cette idée dans les écrits de Léon Walras vers la fin du XIXe siècle, puis de Ludwig von Mises au début du XXe. L'Anglais Frederick Soddy, qui propose en 1926 un système à 100% de réserves déconnecté de toute base métallique, annonce directement les propositions des années 1930. Le Plan de Chicago, ainsi que les plans de Currie et de Fisher, feront l'objet d'importants débats dans le contexte de la Grande Dépression aux États-Unis, où ils inspireront plusieurs projets de loi (dont aucun, cependant, ne sera adopté). Suite à la Seconde Guerre mondiale, la proposition 100% monnaie réapparaîtra notamment dans les écrits de Maurice Allais et de Milton Friedman. Dans le contexte de la dérégulation financière des années 1980 et 1990, des économistes tels que James Tobin ou Hyman Minsky, en particulier, manifesteront un intérêt pour cette idée. Depuis la crise de 2008, la proposition 100% monnaie est à nouveau sujette à un grand nombre de discussions.

Pourtant, en dépit de ses illustres soutiens, force est de constater que la proposition 100% monnaie n'a été que relativement peu étudiée dans l'histoire des idées. À l'exception de Joseph A. Schumpeter (1954)[13], qui y fait quelques allusions, elle est complètement ignorée de la plupart des manuels d'histoire de la pensée économique : Mark Blaug ([1962] 1997), Lionel Robbins (1998), ou encore Alain Béraud et Gilbert Faccarello (dir.) (2000), par exemple, n'y consacrent pas même une note de bas de page. Il faut davantage se tourner vers les ouvrages consacrés à la pensée économique de l'entre-deux-guerres pour trouver des discussions de cette idée, par exemple chez William J. Barber (1996, pp. 89-95, 105, 107, 129, 134) ou David Laidler (1999, pp. 239-42). Du côté des manuels d'histoire de la pensée monétaire, Lloyd W. Mints (1945, pp. 153-55, 175-74, 270-71) discute évidemment de la proposition 100% monnaie – il était lui-même l'un des co-auteurs du Plan de Chicago –, mais Charles Rist ([1938] 1951) et Jürg Niehans (1978) n'en font aucune mention, tandis que Jérôme de Boyer (2003, p. 128) y consacre à peine trois lignes, estimant qu'il s'agit d'« un système inspiré du 'Currency Principle' ». Ce dernier renvoie cependant à un ouvrage de Sylvie Diatkine sur les fondements de la théorie bancaire, où tout un chapitre est consacré au plan 100% monnaie de Fisher, présenté comme s'inscrivant dans le prolongement du *Bank Charter Act* de 1844 (Diatkine 2002, pp. 133-53). Arthur W. Marget ([1938] 1966), dans son imposante étude de deux volumes, *The Theory of Prices - A Re-Examination of the Central Problems of Monetary Theory*, n'aborde pas une seule fois le sujet[14].

La proposition 100% monnaie a surtout été étudiée dans le cadre des travaux consacrés à ses différents auteurs. La version de Soddy a par exemple été discutée par Daly (1980) ; celle

[13] Schumpeter (1954) compare ainsi le *Bank Charter Act* anglais de 1844 à « un 'plan de 100% de réserve' pour les billets de banque » (p. 694, ma traduction ["a '100 per cent reserve plan' for bank notes"]) ; il identifie Joplin comme le premier à avoir proposé un système à 100% de réserves (p. 723n15), ainsi que Walras comme l'un des précurseurs de cette idée (p. 1079), et mentionne en passant la proposition de Fisher (pp. 872-73). L'un de ses commentaires (p. 723) laisse entendre tout ce qu'il pensait personnellement de cette idée de réforme : "The recognition of the currency-creating power of banks . . . is as interesting as the recognition of the relation, so strongly emphasized in the United States, between lending and repaying, on the one hand, and expansion and contraction of the circulating medium, on the other—in which relation some of the more naïve American currency doctors saw (perhaps see) the source of all sorts of evil".

[14] Notons cependant que les manuels modernes de théorie monétaire mentionnent parfois le 100% monnaie – mais d'une manière qui peut prêter à confusion. R. Glenn Hubbard et Anthony Patrick O'Brien (2012, p. 351) ne font ainsi référence qu'aux propositions de Friedman et de Kotlikoff, d'après lesquelles les banques ne pourraient investir que leur seul capital. Dans le *Handbook of Monetary Economics* (B. M. Friedman et F. H. Hahn 1990), la proposition 100% monnaie est rapidement discutée, mais au sein d'un chapitre sans rapport direct avec le sujet (voir Fischer 1990, pp. 1161-62, qui traite du débat « règles contre discrétion »).

du Plan de Chicago par Phillips (1988), Whalen (1994) et Tavlas (2018 ; 2019a)[15] ; celle de Currie par Sandilands (1990 ; 2004) ; celle de Fisher par Allen (1993) et Dimand (1993b ; 2019, pp. 126-29) ; celles de Mises et Rothbard par Huerta de Soto ([1998] 2012, pp. 716-27) ; celle d'Allais par Durand (1995) et Gomez (2012) ; celle de Minsky par Kregel (2012) ; tandis que les propositions de Walras ont été discutées par Jacoud (1994). Les travaux traitant de la proposition 100% monnaie en général, par contre, ont longtemps été extrêmement rares – à peine peut-on mentionner, par exemple, un article de G. Russell Barber (1973) dans *The American Economist*. À cet égard, le passionnant ouvrage de Ronnie J. Phillips, *The Chicago Plan and New Deal Banking Reform* (1995), a assurément comblé un grand vide[16]. L'auteur, après un bref rappel de l'histoire monétaire et bancaire des États-Unis, y raconte en détail comment la proposition 100% monnaie fut formulée dans le contexte de la Grande Dépression des années 1930, comment ses partisans ont cherché – en vain – à l'intégrer aux réformes bancaires du New Deal, et quelle a été la réception de cette idée de réforme au sein de la sphère académique.

Plusieurs thèses de doctorat ont également été réalisées sur la proposition 100% monnaie. Ned Chapin (*An Appraisal of the One Hundred Per Cent Money Plan*, Institut de Technologie d'Illinois, 1959) effectuait une analyse comparée des plans de Chicago, de Fisher et d'Angell, analysant en détail la structure et la mise en opération de la réforme 100% selon chacun de ces plans. Donald R. Market (*The Theory of 100 Per Cent Reserve Banking: Historical Development and Critical Analysis*, Université de l'État de Louisiane, 1967) procédait quant à lui à un rappel historique des propositions 100% monnaie antérieures aux années 1930, à une étude détaillée des propositions de Simons, Currie et Fisher ainsi que des critiques adressées à celles-ci, à une analyse de la proposition (alors contemporaine) de Friedman, et à une réflexion sur les implications possibles de la proposition 100% monnaie pour les discussions monétaires de l'époque (notamment le débat règle *versus* discrétion). Jean-Jacques Durand (*La Création monétaire et la réforme du crédit*, Université de Paris 10, [1978] 1979) procédait à une étude à la fois historique et contemporaine des conceptions relatives à la monnaie et au crédit, puis à une analyse comparée des propositions 100% monnaie formulées par les auteurs américains d'un côté, et par Maurice Allais de l'autre. Stephen E. McLane

[15] Il est cependant remarquable que la proposition de 100% de réserves du Plan de Chicago n'ait pas été réellement discutée dans le cadre de l'abondante controverse – s'étendant des années 1950 aux années 2000 – sur la tradition monétaire de l'École de Chicago. Voir Leeson (ed.) (2003) pour une compilation des écrits relatifs à celle-ci.

[16] L'on peut également se référer aux autres travaux de cet auteur sur la question : voir Phillips (1992 ; 1994).

(*Improving Monetary Control : The Abolition of Fractional Reserves*, Université de Rutgers, 1980), analysant les dysfonctionnements du système monétaire à réserves fractionnaires, et se basant sur les plans 100% monnaie des années 1930, cherchait à améliorer ceux-ci pour répondre aux besoins contemporains en termes de contrôle monétaire ; il proposait alors son propre modèle d'un système à 100% de réserves. Plus récemment, Patrizio Lainà (*Full-Reserve Banking. Separating Money Creation from Bank Lending*, Université d'Helsinki, 2018) a analysé en détail les arguments et critiques s'appliquant à la proposition de 100% de réserves, et examiné celle-ci à travers un modèle stock-flux cohérent (SFC) s'appuyant sur la théorie post-keynésienne. Enfin, Adrien Vila (*Cycles et instabilité chez I. Fisher : le libéralisme à l'épreuve de la monnaie*, École des Hautes Études en Sciences Sociales, 2018) a consacré un chapitre de thèse aux propositions d'Irving Fisher face à l'instabilité monétaire, incluant le 100% monnaie.

4. Objectif et organisation de la thèse

Au vu de l'ensemble des travaux précédemment cités, l'objet de la présente thèse ne saurait être de détailler l'histoire de la proposition 100% monnaie – cela a déjà été réalisé dans le remarquable ouvrage de Phillips (1995) notamment –, de procéder à une description des différents plans proposés, ni d'étudier les modalités pratiques d'application de la proposition : toutes ces questions ont déjà été abordées dans les différentes thèses susmentionnées.

L'objet de cette thèse est de contribuer à combler ce qui nous paraît constituer le principal manque de la littérature dédiée au 100% monnaie : celui d'une clarification concernant le concept et les objectifs de cette proposition. En effet, comme nous l'expliquons en détail dans le chapitre 1, la proposition 100% monnaie a souvent fait l'objet de confusions. D'abord, les débats des années 1930-40 révélaient un grand nombre d'ambiguïtés, y compris au sein de la sphère académique, concernant notamment les implications du plan pour l'activité bancaire. Ensuite, une majorité des auteurs ayant repris la proposition 100% dans la seconde moitié du XXe siècle avaient (à l'exception d'Allais) perdu de vue l'argument principal des auteurs des années 1930 : celui de mettre fin au comportement procyclique de la circulation monétaire entretenu par le lien entre monnaie et dette. Puis les discussions autour de l'idée de *narrow banking* dans les années 1980, souvent assimilée à la proposition 100% monnaie, ont introduit une source de confusion supplémentaire. Enfin, le regain d'intérêt pour cette proposition suite à la crise de 2008 ne s'est pas accompagné d'une clarification de son concept et de ses arguments, bien au contraire. Assimilée tantôt au *Bank Charter Act* de 1844, tantôt à l'idée

d'abolir les banques, tantôt au *narrow banking*, et parfois même à un système de financement étatique du crédit, la proposition 100% monnaie apparaît plus que jamais comme étant source de confusion.

L'ouvrage de Phillips (1995), en dépit de sa grande qualité d'un point de vue narratif et historique, entretient lui-même malheureusement un certain flou quant au concept de 100% monnaie. Il laisse entendre, par exemple, que cette réforme impliquerait : des restrictions dans la gamme d'actifs détenus par les banques, à la manière des propositions plus récentes de *narrow banking* (pp. 7, 186, 189) ; une séparation des activités de banque commerciale et de banque d'investissement (p. 53) ; une intervention directe de l'État dans le marché du crédit, via une institution du type de la *Reconstruction Finance Corporation* des années 1930 (pp. 167, 182, 189) ; une règle visant à augmenter la base monétaire à taux fixe (p. 167) ; moins de discrétion pour le *Federal Reserve Board* (p. 182) ; ou encore une élévation à 100% du ratio de capital pour les institutions de prêts (p. 186). La plupart de ces mesures ont pu être soutenues à un moment ou à un autre par certains auteurs (Simons, notamment, appelait au remplacement des banques de prêt par des fonds mutuels, tandis que Friedman recommandait une croissance de la masse monétaire à taux fixe), mais ne sauraient être considérées comme caractérisant la proposition 100% monnaie. Phillips (1995, pp. 4, 104, 153) insiste aussi de manière probablement excessive sur la proximité des plans de Simons, Currie et Fisher, qui, comme nous le verrons, présentaient pourtant d'importantes différences. Le besoin d'une clarification conceptuelle a également été noté par Schiming (1996, pp. 264-65), dans une recension de l'ouvrage de Phillips. Ainsi, tout en nous appuyant sur l'important travail de ce dernier (auquel nous devons beaucoup), nous avons choisi d'en prendre le relais, et d'axer notre propre recherche sur une analyse du concept et des arguments de la proposition 100% monnaie des années 1930.

La présente thèse est organisée en cinq chapitres. Le **chapitre 1**, qui complète cette introduction générale, rappelle l'historique de la proposition 100% monnaie du XVIIIe siècle à nos jours. Le corps de la thèse se divise ensuite en deux parties (chacune composée de deux chapitres) : une **première partie** ayant pour objet une clarification conceptuelle de la proposition 100% monnaie des années 1930 (chapitres 2 et 3), et une **seconde partie** ayant pour objet une étude de deux de ses principaux arguments (chapitres 4 et 5).

Le **chapitre 2** ("The 100% money proposal of the 1930s: an avatar of the Currency School reform ideas?") vise à différencier la proposition 100% monnaie des prescriptions de réforme de la *Currency School*, incarnées dans le *Bank Charter Act* anglais de 1844. Trop souvent, la proposition 100% monnaie est présentée – y compris par certains de ses auteurs eux-mêmes –

comme une simple extension des dispositions de l'Acte de 1844 aux dépôts bancaires. Nous arguons qu'une telle interprétation est source de confusion, et en expliquons les raisons. Ce chapitre nous permet notamment d'aborder la distinction entre réforme institutionnelle du système monétaire, et prescription normative quant à la politique monétaire.

Le **chapitre 3** ("The 100% money proposal and its implications for banking: The Currie-Fisher approach versus the Chicago Plan approach") vise à établir une distinction entre deux grandes approches de la proposition 100% monnaie, l'une se situant dans la lignée des propositions de Currie et de Fisher notamment, l'autre dans celle du Plan de Chicago. Ces deux groupes d'auteurs divergeaient quant à leur définition de la monnaie, et quant à leur interprétation de l'instabilité monétaire. Il en résultait que leurs plans de réforme respectifs étaient nécessairement différents, au regard notamment de leurs implications pour l'intermédiation bancaire. Nous entreprenons de clarifier cette distinction.

Le **chapitre 4** ("Investigating the 'debt-money-prices' triangle: Irving Fisher's long journey toward the 100% money proposal") étudie l'argument principal de la proposition 100% monnaie des années 1930 : celui de mettre fin au comportement procyclique de la quantité de monnaie, causé par le lien de dépendance entre création monétaire et prêts bancaires. Nous abordons cette question à travers un prisme particulier : celui des travaux d'Irving Fisher. Nous cherchons à mettre en cohérence les différentes théories de l'instabilité monétaire développées par celui-ci tout au long de sa carrière, et soutenons l'idée que la proposition 100% monnaie en constitue l'aboutissement logique.

Le **chapitre 5** ("Would a state monopoly over money creation allow for a reduction of national debt? A study of the 'seigniorage argument' in light of the '100% money' debates") étudie un second argument de la proposition 100% monnaie : celui de permettre une réduction de la dette publique, en rendant à l'État l'intégralité des profits de la création monétaire. Cet argument fut largement rejeté comme étant purement illusoire dans la littérature secondaire. Or, une étude approfondie de son argumentation et de ses critiques, accompagnée d'un effort de clarification du concept de seigneuriage s'appuyant sur la littérature récente, nous pousse à remettre en cause les bases du rejet de cet argument.

Du point de vue méthodologique, le travail de clarification conceptuelle et d'étude argumentaire que nous avons mené dans cette thèse a impliqué un nécessaire degré d'interprétation. En particulier, nous n'avons pas hésité à utiliser des termes, expressions, figures ou équations qui n'étaient pas employés par les auteurs eux-mêmes, lorsque cela nous est paru justifié pour mieux traduire leurs idées. Cela a évidemment induit un certain risque de

déformation de la pensée de ces auteurs. Afin de minimiser ce biais, nous nous sommes efforcés de procéder à une étude la plus complète possible de la littérature existante, tant primaire que secondaire, et d'inclure un maximum de références et de citations pour étayer nos interprétations[17]. Les éventuelles erreurs ou défauts d'interprétation que comporte la présente thèse relèvent bien entendu de notre entière responsabilité.

[17] Ce travail de recherche nous a également conduit à consulter les archives d'Irving Fisher à l'Université de Yale, et celles d'Henry Simons à l'Université de Chicago.

Chapitre 1 – Historique de la proposition 100% monnaie du XVIIIe siècle à nos jours

L'objet de ce premier chapitre, complémentaire à l'introduction générale, est de présenter l'histoire de la proposition 100% monnaie, non seulement durant les années 1930 aux États-Unis, mais également avant et après cette période. On trouve en effet des précurseurs de ce type de réforme dès le XVIIIe siècle, ainsi que des successeurs qui ont continué (et continuent encore) de la soutenir jusqu'à aujourd'hui. Cette mise en perspective historique permettra notamment de mieux appréhender l'objectif de notre thèse : celui d'une clarification conceptuelle et d'une analyse théorique de la proposition 100% monnaie.

1. La proposition 100% monnaie du XVIIIe siècle à la Première Guerre mondiale : les précurseurs

1.1. En Grande Bretagne

On trouve déjà, chez plusieurs auteurs du XVIIIe siècle en Grande Bretagne, une critique de la création de monnaie par le mécanisme du crédit – critique qui, à l'époque, tendait à se confondre avec une condamnation de l'activité bancaire elle-même. Dès 1734, Jacob Vanderlint (?-1740), marchand hollandais établi à Londres, dénonçait l'émission de billets par les banques au-delà des sommes conservées en espèces par celles-ci, car une telle création de « monnaies artificielles » ("artificial Moneys") entraînerait une hausse des prix, défavorable aux exportations (Vanderlint 1734, pp. 14-15, 94-95n†). Il en concluait que l'activité bancaire ne devait pas être encouragée. Le philosophe écossais David Hume (1711-1776), dans ses *Political Discourses* parus en 1752, qualifiait quant à lui les billets de banque de « monnaie de contrefaçon », et en condamnait l'émission au motif que cela « accroîtr[ait] la monnaie au-delà de sa proportion naturelle par rapport au travail et aux marchandises, et augmenter[ait] ainsi leur prix pour le marchand et le fabricant » (Hume [1752] 1906, p. 29, ma traduction[a]). Une banque idéale, selon lui, conserverait l'intégralité de la monnaie déposée en réserve, sans pouvoir augmenter la circulation monétaire[1]. Il proposait à cette fin la mise en place d'une

[a] "counterfeit money"; "by increasing money beyond its natural proportion to labour and commodities, and thereby heightening their price to the merchant and manufacturer".

[1] "And in this view, it must be allowed that no bank could be more advantageous than such a one as locked up all the money it received, and never augmented the circulating coin, as is usual, by returning part of its treasure into commerce" (Hume [1752] 1906, p. 29 ; voir également p. 62). Ainsi que Maria

banque publique de virement qui, sur le modèle de la Banque d'Amsterdam, n'exercerait aucune fonction de prêt. S'il condamnait l'influence des banques sur le moyen d'échange, Hume reconnaissait en revanche tout l'avantage que le commerce avait à tirer de l'activité du crédit[2]. Pour cette raison, comme le note Paganelli (2014, pp. 976-77), il était au final nuancé dans sa critique des billets de banque. L'écrivain britannique Joseph Harris (1702-1764), employé à la *Royal Mint*, développa en 1757 une critique très similaire à celle de Hume, condamnant lui aussi toute augmentation « artificielle » de la quantité de monnaie par l'émission de billets de banque non couverts par des réserves métalliques (Harris 1757, pp. 95-101)[3].

Au début du XIXème siècle, David Ricardo (1772-1823) appellera à son tour à mettre fin à la création de monnaie par les banques. Dès 1815, dans une lettre à Malthus, il fit remarquer que toute émission de papier-monnaie donnait lieu à un profit de seigneuriage, qui ne pouvait légitimement échoir qu'à l'État ; il proposait, pour cette raison, d'en confier l'exclusivité à des commissaires publics, indépendants du gouvernement – ce qui aurait pour avantage supplémentaire, ajoutait-il, de mettre fin aux excès d'émission des *country banks*[4]. Cette proposition, exposée pour la première fois dans ses *Principes* ([1817] 1951, Vol. 1, pp. 361-63), sera au cœur de son « Plan pour une Banque nationale » (*Plan for a National Bank*) rédigé en 1823, sous lequel « cinq commissaires seraient nommés, à qui le plein pouvoir d'émettre tout le papier monnaie du pays serait exclusivement confié » (Ricardo ([1824] 1951, Vol. 4, p. 285, ma traduction[b]). Contrairement à la majorité des auteurs du 100% monnaie, Ricardo ne mettait pas l'accent sur l'avantage d'une telle réforme pour stabiliser la valeur de la monnaie : à cet égard, selon lui, il importait surtout que le papier-monnaie

---

Pia Paganelli (2014, p. 979) l'a récemment fait remarquer : "Hume seems, therefore, to fit in the large family of economists that proposed the Chicago Plan in the 1930s and narrower banking today." Voir Luttrell (1975, p. 168) pour une observation similaire, ainsi que Le Maux (2014, pp. 963-64) sur la suggestion par Hume de 100% de réserves, et Dimand (2005) sur Hume et le papier-monnaie.

[2] "[T]he increase of industry and of credit . . . may be promoted by the right use of paper-money. It is well known of what advantage it is to a merchant to be able to discount his bills upon occasion; and everything that facilitates this species of traffic is favourable to the general commerce of a state" (Hume [1752] 1906, p. 60).

[3] Le fait qu'à la fois Vanderlint, Hume et Harris se soient prononcés en faveur d'un système de 100% de réserves a été noté par Rothbard (1995a, p. 462).

[4] Voir sa lettre à Malthus du 10 septembre 1815 (in Ricardo 1951, Vol. 6, p. 268). Cette idée de confier la création monétaire à l'État semble avoir été soumise par Jean-Baptiste Say à Ricardo en 1814, comme en atteste une lettre de réponse de ce dernier au premier (lettre de Ricardo à Say, 24 décembre 1814, in Ricardo 1951, Vol. 6, pp. 165-66).

[b] "Five Commissioners shall be appointed, in whom the full power of issuing all the paper money of the country shall be exclusively vested."

demeure toujours convertible en or et soit correctement régulé, quel que soit son émetteur. Il insistait beaucoup, en revanche, sur l'avantage de son plan pour les finances publiques, anticipant par là un autre grand argument du plan 100% monnaie (que nous traitons au chapitre 5) : celui de rendre à l'État l'intégralité des profits de la création monétaire.

À partir de 1823, un autre économiste anglais, Thomas Joplin (c. 1790-1847), condamnera lui aussi les émissions de monnaie par les banques. Selon lui, en créant la monnaie papier qu'elles prêtent, les banques avancent du capital qui ne correspond pas à un revenu préalablement épargné, ce qui provoque une hausse des prix ; les emprunteurs de cette monnaie nouvellement créée acquièrent ainsi une partie du revenu de la société, au détriment des détenteurs de la monnaie précédemment en circulation, dont la valeur se déprécie (Joplin 1825, p. 28 ; 1826, pp. 35-36)[5]. Les fluctuations soudaines du niveau des prix causées par ces émissions se produisent à la hausse comme à la baisse, entraînant régulièrement des paniques (Joplin 1823, pp. 193-98 ; 1826, pp. 38, 45). Elles modifient, en outre, les rapports de proportion entre les circulations monétaires de chaque province et celle de Londres, conduisant à des déséquilibres commerciaux internes au royaume (1823, pp. 201-14). Pour toutes ces raisons, Joplin proposera un plan de réforme monétaire assez complexe, dont l'essence semblait être de mettre fin à toute création de monnaie papier par les banques, et de n'en permettre l'émission, par une autorité gouvernementale, qu'en échange de lingots[6]. Il

[5] Comme l'a fait remarquer Viner (1937, pp. 190-91), Joplin anticipe ici clairement le concept d' « épargne forcée » (*forced saving*), qui sera plus tard développé par Hayek notamment. Sur la pensée de Joplin en général, voir O'Brien (1993).

[6] Joplin développa son plan de réforme dans un grand nombre de ses écrits, à partir de 1823 jusque dans les années 1840 (voir, par exemple, Joplin 1823, pp. 262-64 ; 1826, pp. 63-65 ; [1844] 1845, p. 44 ; ainsi qu'O'Brien 1993, chapitre 8, pour une analyse détaillée du plan et de son évolution). La version initiale de ce plan semble pouvoir être résumée comme suit. D'une part, le volume total de billets de banque en circulation au moment de la réforme serait remplacé par des billets émis par le gouvernement, et prêtés par celui-ci à des *joint stock banks* réparties sur l'ensemble du royaume ; chacune se verrait allouer, contre versement d'un intérêt, une part fixe du volume de billets proportionnelle aux besoins de son *district*, qu'elle mettrait en circulation par voie de prêts. D'autre part, un Conseil des Commissaires (*Board of Commissioners*) en charge de la gestion monétaire serait établi à Londres, qui recevrait en dépôt (ou achèterait) tous les lingots arrivant de l'étranger, en échange desquels il émettrait des certificats ou billets de grosse coupure ; ceux-ci pourraient ensuite être escomptés auprès de n'importe quelle banque du pays, qui émettrait de nouveaux billets à cette fin. L'interprétation de ce plan (assez confus, il faut l'admettre) reste sujette à débat. Viner (1937, p. 224) et Schumpeter (1954, p. 723n15) y voient une proposition de 100% de réserves, et Fisher ([1935] 1945, p. 221) inclut deux références bibliographiques à Joplin à la fin de son ouvrage *100% Money*. O'Brien (1993, pp. 145-47), cependant, reconnaissant que le plan n'est pas très clair, évoque plutôt un encadrement du pouvoir d'émission des banques par une agence gouvernementale. Quant à Mints (1945, p. 108), il conclut pour sa part : "I have found it impossible to discover adequate reasons why Joplin should have thought his schemes would prevent this multiple expansion and contraction [of bank money]". Précisons enfin que Joplin, bien qu'il ait expressément reconnu le caractère monétaire des dépôts transférables dans ses derniers écrits, n'a à aucun moment inclus ceux-ci dans le champ d'application de sa réforme.

affirmait : “Now by this plan, while banks could not manufacture money at pleasure, the currency would dilate and contract in the same manner as with a metallic circulation” (Joplin 1823, p. 264). S’il semblait proposer, comme Ricardo, de confier l’exclusivité des émissions de monnaie papier à l’État, Joplin se distinguait de ce dernier sur la politique d’émission à suivre : l’autorité monétaire, dans son plan, serait elle-même soumise à 100% de réserves métalliques, empêchant toute gestion proprement dite de la quantité de monnaie[7]. Comme le note Viner (1937, p. 224), Joplin semble ainsi être le premier auteur à avoir préconisé le *currency principle*, selon lequel une masse monétaire mixte, composée à la fois de monnaie métallique et de monnaie papier, devrait se comporter exactement comme le ferait une monnaie purement métallique.

La crise de 1825 en Angleterre mettra en évidence le fait que la seule convertibilité de la monnaie papier en espèces ne pouvait suffire à éviter les excès d’émission. Elle conduira certains auteurs à mettre en doute, également, l’adéquation du critère prôné par Ricardo – celui d’une stabilisation du prix de l’or – pour guider les émissions de monnaie (voir, par exemple, Pennington [1827] 1940, pp. 82-83)[8]. Dans ce contexte, la préconisation du *currency principle*, déjà prôné par Joplin en 1823, fera sa réapparition sous la plume d’auteurs comme Henry Drummond (1826, p. 47) ou James Pennington ([1827] 1840, pp. 85-88) – ce dernier étant généralement considéré comme le premier à avoir énoncé ce principe de manière claire et ordonnée (voir Fetter 1965, p. 130 ; O’Brien 1994a, p. xxi). Dans un mémorandum adressé en privé au ministre Huskisson en 1827, Pennington affirmait que si la Banque d’Angleterre pouvait s’astreindre à maintenir un montant fixe de titres à son actif, alors toute variation de son passif (incluant à la fois ses billets et ses dépôts[9]) ne serait rendue possible que par une variation strictement égale de ses réserves métalliques ; il s’agirait, en d’autres termes, de contraindre la Banque à un ratio de 100% de réserves marginales. Si celle-ci bénéficiait en outre d’un monopole d’émission, alors la circulation monétaire du pays se

[7] Joplin (1832, pp. 179-80) critique d’ailleurs explicitement la proposition de Ricardo au motif qu’au lieu d’être automatique, elle laisserait un pouvoir discrétionnaire à l’autorité monétaire. Sa position sur ce point évoluera cependant : en 1844, dans sa critique de l’Acte de Peel, tout en maintenant son adhésion au *currency principle*, il insistera sur la « nécessité absolue » (“absolute necessity”) d’un certain pouvoir discrétionnaire en cas de panique (Joplin [1844] 1845, p. 58).

[8] Rappelons que le système proposé par Ricardo en 1823 – celui d’un monopole d’émission confié à une Banque nationale, combiné à une politique de stabilisation du prix de l’or – n’a cependant jamais été expérimenté.

[9] Ainsi que Viner (1937, p. 226) le fait remarquer, le *currency principle* prôné par Pennington s’appliquait à la fois aux billets et aux dépôts bancaires, englobés ensemble sous le terme de « circulation papier » (“paper circulation”) – ce que Pennington ([1827] 1840, pp. 89-90) exprimera plus clairement au moment de la publication de son mémorandum en 1840.

comporterait exactement comme le ferait une circulation purement métallique. Au même moment, mais de manière semble-t-il indépendante, cette règle d'émission (toujours appliquée à l'ensemble des billets et dépôts) sera adoptée par la Banque d'Angleterre, sans être combinée à un monopole d'émission cependant. Elle sera publiquement exposée par John Horsley Palmer, gouverneur de la Banque, en 1832 – d'où son appellation « règle de Palmer » (*Palmer rule*) (voir Viner 1937, p. 224 ; Fetter 1965, p. 132). Il semble néanmoins qu'elle ne fut jamais réellement suivie en pratique.

La critique de la règle de Palmer servira de point de départ aux propositions de la *Currency School*, un groupe d'auteurs incluant, notamment, Samuel Jones Loyd (qui deviendra en 1850 Lord Overstone), George Warde Norman (un directeur de la Banque d'Angleterre) et Robert Torrens[10]. Ceux-ci préconisaient un plan de réforme qui sera mis en œuvre sous le *Bank Charter Act* (ou *Peel's Act*) de 1844, dont l'essence était d'appliquer le *currency principle* à la seule monnaie papier (les dépôts bancaires n'étant généralement pas considérés comme de la monnaie par ces auteurs). Il s'agissait, tout d'abord, d'octroyer progressivement à la Banque d'Angleterre un monopole d'émission de billets sur l'ensemble du pays ; ensuite, de séparer la Banque en deux départements – un Département d'émission, seul habilité à émettre de la monnaie papier, et un Département bancaire, habilité à octroyer des prêts mais sans pouvoir émettre de billets ; enfin, de soumettre le Département d'émission à une règle automatique, le *currency principle*. Comme nous le verrons au chapitre 2, on trouve chez certains auteurs de cette école (Loyd et Norman notamment) une expression de l'argument central de la proposition 100% monnaie des années 1930 : celui de mettre fin aux fluctuations cycliques de la masse monétaire, causées par l'association entre émission de monnaie et activité bancaire. Cependant, on trouve aussi chez ces auteurs, plus généralement, un rejet de toute forme de gestion monétaire discrétionnaire. Le *currency principle*, incarné dans l'Acte de 1844, traduit bien cette double condamnation : il vise à empêcher non seulement toute création de monnaie (papier) par les banques, mais également toute gestion monétaire par le Département d'émission. Comme nous l'expliquons au chapitre 2, il s'agit là d'une différence majeure avec la proposition 100% monnaie des années 1930, qui cherchera au contraire à faciliter le contrôle (actif, si besoin) de la masse monétaire – et qui, de surcroît, prendra en compte le volume total des moyens de paiement, et non la seule monnaie papier[11].

---

[10] John Ramsay McCulloch et Mountifort Longfield sont parfois rattachés à cette école (voir par exemple Schwartz [1987] 2008).

[11] Notons également que si l'Acte de 1844 prévoit de mettre fin à la création de monnaie papier par les banques, on n'y trouve aucune des deux autres propositions essentielles du plan de réforme de Ricardo

1.2. Aux États-Unis

Aux États-Unis également, on trouve dès le début du XIXe siècle un grand nombre de critiques de l'émission de monnaie papier par les banques, à commencer par Thomas Jefferson, un « disciple de David Hume » selon Luttrell (1975). Celui-ci était loin d'être le seul, si l'on en croit Rothbard (1962a, p. 129n28 ; voir aussi 1962b ; 1995b) :

> During the Panic of 1819, for example—several years before Thomas Joplin's enunciation of the Currency Principle in England—Thomas Jefferson, John Adams, John Quincy Adams, Governor Thomas Randolph of Virginia, Daniel Raymond (author of the first treatise on economics in the United States), Condy Raguet, and Amos Kendall all wrote in favor of either a pure 100 per cent gold money, or of 100 per cent gold backing for paper.

Il semblerait d'ailleurs que les premières propositions visant à mettre fin à la création de moyens de paiement par les banques sous quelque forme que ce soit, incluant explicitement la monnaie scripturale – c'est-à-dire, les premières propositions « 100% monnaie » proprement dites – soient apparues durant le second tiers du XIXe siècle aux États-Unis. On trouve les traces de cette idée dès 1833 sous la plume de William M. Gouge[12], puis, à partir des années 1850, chez divers auteurs tels que George Dutton (1857, pp. 23-25) ou Charles H Carroll[13]. Carroll (1799-1890), en particulier, s'est longuement épanché, dans une série d'articles publiés entre 1855 et 1879, sur les problèmes liés à la dépendance du moyen d'échange (incluant les dépôts transférables par chèque) envers l'activité des prêts bancaires[14]. Selon lui,

---

de 1823 : celle de rendre à l'État le plein bénéfice du seigneuriage, en confiant la création monétaire à une Banque nationale (le Département d'émission, sous l'Acte de 1844, demeurant au contraire attaché à la Banque d'Angleterre détenue par des intérêts privés), et celle d'une politique d'émission prenant pour critère la stabilisation du prix de l'or, qui conférerait *de facto* à l'autorité monétaire une discrétion opérationnelle (l'Acte de 1844 instituant au contraire une règle automatique). Ricardo ne saurait donc être considéré, comme c'est pourtant le cas parfois, comme un représentant de la *Currency School*.

[12] Gouge ([1833] 1968, p. 122) proposait de mettre en place des banques publiques de virement qui, sur le modèle de la Banque de Hambourg, conserveraient l'intégralité de leur encaisse en réserve, tandis que les banques privées pourraient continuer à prêter à partir de dépôts d'épargne : "There is nothing in the constitution to prevent the establishment of public Banks, which shall be mere Offices of Deposit and Transfer. . . . We should have places of deposit safer than the present; for the money deposited in a public Bank by one man would not be lent to another. The business of settling accounts by transfers of credit, would be greatly facilitated. . . . The private Banks, paying interest on deposits, would extend throughout the country the advantages of Saving Banks."

[13] Voir Mints (1945, pp. 154-56). D'autres auteurs de cette période, tels que John Dix ou Amasa Walker, continueront également de prôner 100% de réserves pour les seuls billets.

[14] Ces textes ont été rassemblés dans un volume édité et introduit par Edward C. Simmons (Carroll 1964). Selon ce dernier : "Although almost all writers of the day laid the blame for panics on the banking system, few saw with Carroll that monetary expansion and contraction were the basic cause. . . . Carroll describes in great detail the effects of alternately expanding and contracting the currency, pointing out the effects of price changes on the distribution of wealth and income and also

le fait d'utiliser les promesses de payer des banques comme moyens de paiement avait pour effet d'entraîner d'abord une hausse excessive du niveau des prix et une exportation d'or, résultant ensuite, inéluctablement, en une liquidation des prêts, synonyme de contraction des moyens de paiement et de faillites en chaîne[15]. Pour cette raison, il en vint à proposer un type de banque dont le passif exigible à vue serait couvert par 100% de réserves, et dont les prêts seraient financés exclusivement par du capital ou des dépôts exigibles à terme ou sur préavis (Carroll [1860] 1964, pp. 215-17)[16]. Aux États-Unis, l'idée d'imposer 100% de réserves derrière les comptes courants apparaîtra encore chez certains auteurs relativement méconnus de la fin du XIXe et du début du XXe siècle, tels qu'Isaiah W. Sylvester en 1882 (voir Rothbard 1962a, p. 130), Willis E. Brooks en 1908, et John R. Cummings en 1912 (voir Bromberg 1939).

1.3. En Europe continentale

L'Europe continentale fournira également son lot de contributions au sujet. Plusieurs auteurs allemands, tels que Johann Ludwig Tellkampf (1842 ; 1859 ; 1867 ; 1873), Otto Hübner (1854) et Philip Joseph Geyer (1865 ; 1867), appelleront à divorcer la création de monnaie de l'activité d'escompte en confiant le monopole d'émission de billets à l'État, tout en astreignant celui-ci à un coefficient de réserves métalliques de 100%[17]. En France, Henri

---

condemning the transfers of property that accompany bankruptcy" (Simmons, in Carroll 1964, pp. xii, xvi).

[15] "[T]he deposits . . . are *bank debt organized into currency* . . . The organizing of debt into currency is the prevailing error of this commercial age. . . . The "promise to pay", whether in the form of note or credit, placed in position to be used as currency in excess of the coin in the country, becomes a degradation of the value of gold and silver . . . [By so doing] we shall infallibly raise the general price of things . . . Now in parting with gold by this degradation of its value . . . we have no capital left in its place—nothing but debt . . . with the certainty of extensive failure, in every bank contraction . . . Whenever the banks contract their loans the means of payment fail and the obligations founded thereon fail likewise—they cannot be paid" (Carroll [1858a] 1964, pp. 87-93, italiques dans l'original). "The debt currency, then, and the banking, which is the machinery of its manufacture, are the cause of the periodical revulsions in the commercial world" (Carroll [1858b] 1964, p. 101).

[16] "This bank [would keep] coin in reserve, dollar for dollar, against the demand liabilities. Such reserve would be on special deposit without interest" (Carroll [1860] 1964, pp. 215-16). Concernant les dépôts à terme, il ajoutait une condition supplémentaire, que l'on retrouvera plus tard chez Allais (voir plus loin) – celle d'interdire que l'échéance de l'actif soit plus éloignée que celle du passif : "The loans must be so averaged as to time that the receipts shall always precede the demand for payment of the deposits" (Carroll [1860] 1964, p. 216). Carroll, comme beaucoup d'auteurs, ne semble ainsi pas avoir établi de différence entre la distinction dépôt à vue / dépôt à terme (renvoyant au délai d'exigibilité du dépôt), et la distinction dépôt transférable par chèque / dépôt d'épargne non transférable (renvoyant à leur possibilité d'utilisation comme moyen de paiement). Voir à ce sujet la note 39 du chapitre 2, section 3.

[17] Sur ces auteurs, voir notamment Vera Smith (1936, chapitre 9), qui note, à propos du dernier nommé : "Geyer summarises the faults of the present banking system under two heads: first, that it

Cernuschi, économiste et banquier d'origine italienne, condamnera toute émission de billets de banque non couverts intégralement par des réserves métalliques (voir Cernuschi 1865 ; 1866), et suggérera en passant le même traitement pour les dépôts en comptes courants[18]. Victor Modeste (1866) condamnera de même l'émission de billets non couverts, arguant qu'une telle pratique, en plus d'être économiquement dangereuse, était manifestement malhonnête. L'article de ce dernier, combiné aux publications de Cernuschi, susciteront un débat sur la « fausse monnaie » dans le *Journal des Économistes* en 1866[19].

Quelques années plus tard, on retrouve l'idée de la proposition 100% monnaie exprimée dans les écrits de Léon Walras (1834-1910). Dans un mémoire de 1879, celui-ci condamnait l'émission de billets de banque : d'abord, une telle émission perturberait le rapport entre biens de consommation et nouveaux biens de production, et conduirait à une élévation du niveau général des prix[20] ; ensuite, la liquidation de ces billets serait impossible, sauf à entraîner une « double crise monétaire et financière » (Walras [1879] 1898b, p. 366). Il réitérait cette position dans un mémoire de 1885, arguant cette fois que le remplacement des billets de banque par de la monnaie métallique frappée par l'État permettrait, tout à la fois, de mettre fin aux fluctuations monétaires d'origine spéculative, et d'amortir une partie de la dette publique

---

provides the material for trade crises and production cycles by producing 'artificial capital' up to a point where there is an excessive amount of capital in existence, and, secondly, that having produced the crisis, it intensifies it by contracting credit and causing forced sales. His explanation of the original (*sic*) of the boom came very close to the modern 'over-investment' theories of the Austrian school . . ." Notons également qu'à la fois Mises ([1912] 1953, p. 323) et Fisher ([1935] 1945, p. 221) incluent des références à Tellkampf et Geyer dans leurs ouvrages respectifs.

[18] « Je trouverais préférable que les comptes courants à la banque fussent des véritables comptes de dépôt et ne figurassent pas dans l'avoir de la Banque » (Cernuschi 1866, p. 57). Si les comptes courants étaient couverts à 100% par des réserves, ajoutait-il, l'escompte pourrait toujours se pratiquer « [a]vec les dépôts qui portent intérêts. Alors la Banque est débitrice, elle n'est plus dépositaire. Quand je paye un intérêt, je ne garde plus votre or, je prends votre capital, et j'en fais ce que je veux » (*ibid.*, p. 59). Son argumentaire, cependant, se concentrait essentiellement sur les billets. Notons qu'à la fois Walras ([1879] 1898b, p. 372) et Mises ([1949] 1963, p. 446) se référeront favorablement à Cernuschi sur ce point.

[19] Les protagonistes de ce débat incluaient Victor Modeste, Jean-Gustave Courcelle-Seneuil, Gustave du Puynode et Théodore Mannequin. Voir Juurikkala (2002) pour un résumé de ces discussions, qu'il interprète du point de vue de l'école autrichienne.

[20] « [L]'émission des billets de banque recule les limites du crédit en permettant aux banques et banquiers de prêter aux entrepreneurs sans emprunter aux capitalistes. […] Il en résulte une double conséquence : en premier lieu, la proportion de la production des revenus consommables et des capitaux neufs est changée, il y a diminution dans la quantité des uns et augmentation dans la quantité des autres ; et, en second lieu, le prix de tous ces produits est changé puisque […] leur valeur totale est augmentée du montant de l'émission des billets de banque » (Walras [1879] 1898b, pp. 348, 350). Cette analyse de Walras, à l'instar de celle de Joplin que nous avons mentionnée plus haut, évoque clairement le concept d'« épargne forcée » (*forced saving*), comme l'a fait remarquer Arthur Marget (1931, p. 598n68).

(Walras [1885] 1898b, pp. 46-49)[21]. En 1898, dans un article de la *Revue d'Économie politique*, notant que les soldes de comptes courants produisaient les mêmes effets que les billets de banque, il proposait un « Plan d'une Banque de virements » visant à séparer l'émission de monnaie scripturale de l'activité d'escompte. Cette Banque de virements – « vaste établissement, sinon d'État, au moins privilégié » (Walras [1898a] 1898b, p. 377) – conserverait la quasi-totalité des encaisses monétaires du pays, et permettrait d'effectuer des paiements sous réserve que « le montant total des crédits des comptes courants se trouve toujours en monnaie dans la caisse » (*ibid.*, p. 378). Elle serait sujette, autrement dit, à 100% de réserves. Les banques d'escompte et autres établissements de crédit conserveraient eux-mêmes leur propre encaisse à la Banque de virements, et effectueraient leurs paiements par son intermédiaire (*ibid.*, p. 396). L'objectif, là encore, était que « la circulation monétaire ne soit pas troublée par les combinaisons du crédit » (*ibid.*, p. 395). Ces textes de Walras ont tous été reproduits dans ses *Études d'Économie politique appliquée* (Walras 1898b)[22].

En 1912, dans son ouvrage *Theorie des geldes und der Umlaufsmittel* (traduit en anglais en 1934 sous le titre *The Theory of Money and Credit*), l'économiste autrichien Ludwig von Mises (1881-1973) proposait quant à lui d'étendre les dispositions du *Bank Charter Act* anglais de 1844 aux comptes courants[23]. Cela permettrait, selon lui, « d'éliminer autant que possible l'influence humaine sur le ratio d'échange entre la monnaie et les autres bien économiques » (Mises [1912] 1953, p. 407, ma traduction[c]). Mises, en effet, était opposé à

[21] Rappelons que Walras, à rebours du *currency principle*, prônait une monnaie métallique, mais non automatique : dans le système de monométallisme-or avec billon d'argent régulateur qu'il proposait, l'État ferait varier la quantité de billon d'argent en circulation de manière à stabiliser le pouvoir d'achat de la monnaie, indiqué par un indice des prix (du type de ceux proposés par Jevons) (voir Walras [1884] 1898b, pp. 3-11). Tout comme Ricardo avant lui et Fisher après lui, mais à l'encontre de la grande majorité des auteurs précédemment cités, il préconisait donc une gestion monétaire active : « Je ne partage pas, quant à moi, cette répulsion pour l'intervention de l'État » (Walras [1884] 1898b, p. 11). « La monnaie doit être d'une valeur réelle égale à sa valeur nominale […]. [L]a monnaie ne doit pas être et ne sera pas automatique » (Walras [1886] 1898b, p. 125).

[22] Cet ouvrage a été réédité au sein des *Œuvres économiques complètes* de Walras (voir Walras [1898] 1992, Vol. 10). Il en existe également une version traduite en anglais (*Studies in Applied Economics*, en deux volumes – voir Walras [1898] 1994, Vol. 1 ; [1898] 1995, Vol. 2).

[23] "The basic conception of Peel's Act ought to be restated and more completely implemented than it was in the England of his time by including the issue of credit in the form of bank balances within the legislative prohibition" (Mises [1912] 1953, p. 408). Il sera plus précis en 1928 quant au type de dépôts concernés, spécifiant que cette disposition s'appliquerait aux « soldes bancaires transférables par chèque » (Mises [1928] 1978, p. 150, ma traduction ["bank balances subject to check"]).

[c] ". . . to eliminate as far as possible human influence on the exchange-ratio between money and other economic goods"

toute forme d'intervention de l'État en matière de gestion monétaire[24]. Ses arguments étaient également basés sur sa propre théorie du cycle : il cherchait là un moyen de lutter contre « la possibilité de causer des fluctuations dans les ratios d'échange entre biens d'ordres supérieur et inférieur par l'émission de moyens d'échange fiduciaires, et les conséquences néfastes liées à une divergence entre les taux d'intérêt naturel et monétaire » (Mises [1912] 1953, pp. 407-08, ma traduction[d])[25]. Il réitérera cette proposition à de nombreuses reprises, en particulier dans son ouvrage *Geldwertstabilisierung und Konjunkturpolitik* (traduction anglaise : *Monetary Stabilization and Cyclical Policy*) paru en 1928 (Mises [1928] 1978, p. 150).

2. La proposition 100% monnaie des années 1930[26]

2.1. Frederick Soddy, précurseur direct des plans de réforme des années 1930

L'expérience de la Première Guerre mondiale, ayant conduit à suspendre la convertibilité métallique d'un grand nombre de devises, amènera de plus en plus d'économistes à considérer l'étalon-or comme une « relique barbare » ("a barbarous relic"), selon l'expression consacrée par Keynes ([1923] 1971, p. 138). Tel sera le cas, comme nous allons le voir, de la plupart des auteurs « 100% monnaie » des années 1930. À cet égard, il convient tout d'abord de mentionner la contribution d'un Prix Nobel de Chimie, l'Anglais Frederick Soddy (1877-1956)[27]. Dans son ouvrage *Wealth, Virtual Wealth and Debt*, paru en 1926, celui-ci arguait que la création monétaire par les banques aggravait gravement les variations de la quantité de monnaie ("we now have a concertina instead of a currency", Soddy [1926] 1933, p. 330), tout

[24] Des années plus tard, dans *Human Action*, notant la proximité entre ses propres préconisations et la proposition 100% monnaie de Fisher, Mises ([1949] 1963, pp. 442-43) ajoutera : "But Professor Fisher combined his plan with his proposals concerning the adoption of an index-number standard. It has been pointed out already why such a scheme is illusory and tantamount to open approval of the government's power to manipulate purchasing power according to the appetites of powerful pressure groups."

[d] "The possibility of causing temporary fluctuations in the exchange-ratios between goods of higher and of lower orders by the issue of fiduciary media, and the pernicious consequences connected with a divergence between the natural and money rates of interest . . ."

[25] Cet argument quant à la determination naturelle du taux d'intérêt, dont on trouvait déjà un écho chez Walras ([1898a] 1898b, p. 396), sera également évoqué par Fisher ([1935] 1945, p. 140) : "Under the 100% system the stabilizing function of the Currency Commission would be carried out with far less disturbance to interest rates . . . Interest rates would seek their level in a natural way according to the supply and demand of loans . . ."

[26] Cette section s'appuie grandement sur l'ouvrage de Ronnie J. Phillips, *The Chicago Plan and New Deal Banking Reform* (1995).

[27] Soddy avait obtenu le Prix Nobel de Chimie en 1921 pour ses travaux sur la radioactivité. Voir Daly (1980) pour un résumé de sa pensée économique.

en privant le Trésor d'importants revenus. Il en concluait que « l'État d[evait] recouvrer sa seule prérogative quant à l'émission de monnaie, et rendre impossible l'émission de monnaie par les banques » (*ibid.*, p. 229, ma traduction)[e]. Il précisait davantage :

> The banks should by law be required to keep national money, £ for £ of their liabilities for customers' "deposits" in current account, and only be permitted to lend money genuinely deposited into their keeping by its owners, who give up the use of it for the stipulated period of the loan" (Soddy [1926] 1933, p. 332).

Écrivant dans un contexte déflationniste, suite au retour de la livre sterling à l'étalon-or à la parité d'avant-guerre en 1925, il proposait également de rendre la monnaie inconvertible en or, et d'en stabiliser le pouvoir d'achat par la seule régulation de sa quantité, à l'aide d'un indice général des prix (*ibid.*, pp. 242-45). Par bien des aspects, la proposition de Soddy anticipait directement celle des auteurs nord-américains des années 1930, et peut sans doute être considérée comme la première exposition détaillée de la version moderne du 100% monnaie, affranchie de toute dépendance envers l'or[28]. Il est d'ailleurs intéressant de noter que son ouvrage de 1926 fit l'objet d'un certain nombre de recensions – tant positives que négatives – de la part d'économistes, dont certains allaient ensuite soutenir la proposition 100% monnaie dans les années 1930[29]. Parmi ceux-ci, Frank H. Knight, l'un des futurs auteurs du Plan de Chicago (enseignant alors à l'Université d'Iowa), bien que critique à bien des égards de l'ouvrage de Soddy, se trouva globalement en accord avec son plan de réforme monétaire[30,31]. Cela fit dire à Phillips (1995, p. 46, ma traduction[f]) que « les idées des

---

[e] "The State must recover its sole prerogative in the issue of money, and make it impossible for the banks to issue money".

[28] Notons que Soddy ([1926] 1933, pp. 322-26) mêlait à ses arguments des thèses conspirationnistes, insinuant que le système monétaire existant servait d'outil de domination à une élite financière. Il n'était pas, cependant, en faveur d'une nationalisation des banques : "Avoid as the plague schemes for nationalizing banks. The object is to stop private minting and nationalize money itself, not to control legitimate account-keeping or other financial institutions" (Soddy 1934, p. 211).

[29] Daly (1980, p. 471) affirme : "With the significant exception of Frank Knight . . . Soddy's work was ignored by economists". Les ouvrages de Soddy firent pourtant l'objet d'une dizaine de recensions de la part d'économistes, incluant par exemple James W. Angell, Roy Harrod ou Arthur W. Marget.

[30] "The practical thesis of the book is distinctly unorthodox, but is in our opinion both highly significant and theoretically correct. In the abstract, it is absurd and monstrous for society to pay the commercial banking system 'interest' for multiplying several fold the quantity of medium of exchange when (a) a public agency could do it at negligible cost, (b) there is no sense in having it done at all, since the effect is simply to raise the price level, and (c) important evils result, notably the frightful instability of the whole economic system and its periodical collapse in crises, which are in large measure bound up with the variability and uncertainty of the credit structure if not directly the effect of it" (Knight 1927, p. 732).

[31] Un autre futur partisan du 100% monnaie, James W. Angell de l'Université Columbia, fournit une recension (très positive) de l'ouvrage de Soddy en 1927 ; mais, contrairement à Knight, Angell n'était alors pas (encore) convaincu par le bien-fondé d'une réforme de ce type (Angell 1927, pp. 622-23).

économistes de Chicago furent influencées par Soddy ». George S. Tavlas (2018), cependant, contredit vivement cette idée, notant qu'à la fois Knight et Simons avaient démenti avoir été influencés par le Britannique, et affirmé avoir soutenu l'idée de 100% de réserves bien avant les années 1930[32]. Soddy publiera une seconde édition de son ouvrage en 1933 (introduite par un « avant-propos pour la Nation américaine » ["Foreword to the American Nation"]) et réitérera sa proposition de réforme dans d'autres publications (voir notamment Soddy 1933a, 1933b, 1934).

2.2. Les économistes face à la « Grande Contraction » monétaire de 1929-33 aux États-Unis

La proposition 100% monnaie réapparaîtra ensuite aux États-Unis, durant la Grande Dépression des années 1930 qui suivit le krach boursier d'octobre 1929. Hyman Minsky, dans un avant-propos à l'ouvrage de Phillips (1995, pp. xi-xii), résume bien le contexte états-unien de cette époque :

> The Federal Reserve System, which had been created, in the aftermath of the banking panic of 1907, in the belief that a central bank could contain panics, was unable to prevent the collapse of the financial system from 1929 to 1933. Furthermore, it was not the main player in the reopening of the banks. In 1933 the Federal Reserve System, itself, was a failure. As a result . . . the early 1930s was a period of intense and wide debate in the United States, as well as in the rest of the capitalist world, on what had gone wrong to cause the disaster and what could be done to prevent such disasters in the future.

De 1929 à 1933, la quantité de monnaie des États-Unis (espèces et dépôts transférables par chèque) chuta de 27 à 20 milliards de dollars (Fisher [1935] 1945, p. 5). Cette « Grande Contraction » ["Great Contraction"] Friedman et Schwartz 1963, p. 299) s'accompagna d'une série de faillites bancaires, dont elle fut, vraisemblablement, à la fois une cause et une

---

[f] "The ideas of the Chicago economists on banking reform were influenced by Soddy".

[32] Tavlas cite notamment le passage suivant d'une lettre de Knight à Fisher : "I completely disclaim getting the one hundred per cent money idea from Soddy or anybody else, as far as I am personally concerned. I was always skeptical about the theory of pyramiding, and think I have taught practically the one hundred per cent doctrine from the beginning of work as teacher, in 1917" (Lettre de Knight à Fisher, 2 septembre 1937, in Barber *et al*. (ed.) 1997, Vol. 11, p. 4, citée par Tavlas 2018, p. 16). Il se réfère également à un extrait d'une lettre de Simons à Fisher, datant de 1934: "Your remark about the Bank of England reminds me that I got started toward this scheme of ours about ten years ago, by trying to figure out the possibilities of applying the principle of the English Act of 1844 to the deposits as well as to the notes of private banks. The Act would have been an almost perfect solution of the banking problem, if bank issue could have been confined to notes" (Lettre de Simons à Fisher, 19 janvier 1934, citée par Phillips 1995, p. 67, et par Tavlas 2018, p. 15). Fisher lui-même fut l'objet de critiques de la part de Soddy qui, bien que Fisher le citât dans son ouvrage, s'estimait manquer de reconnaissance pour avoir formulé le premier la proposition 100% monnaie (voir Dimand 1991, p. 24 ; 1993b, p. 70).

conséquence. Divers facteurs furent mis en avant pour expliquer cette crise dont l'ampleur était propre aux États-Unis. Parmi les facteurs bancaires, on peut mentionner l'atomicité du système bancaire états-unien, ou le caractère trop diffus de son mécanisme de régulation et de supervision. Parmi les facteurs monétaires, l'inadéquation du cadre théorique sur lequel reposait la Réserve fédérale depuis sa création fut souvent soulignée. Le *Federal Reserve Act* de 1913, en effet, était basé sur la *real bills doctrine*, selon laquelle l'émission de monnaie ne pouvait être ni excessive ni insuffisante tant qu'elle reposait sur l'escompte de papier commercial de qualité à court terme. Comme nombre d'auteurs l'ont fait remarquer, cela conduisait l'autorité monétaire à adopter une politique davantage procyclique que contracyclique, la quantité d'effets escomptables augmentant en période d'inflation (précisément quand une contraction monétaire serait au contraire requise pour stabiliser le niveau des prix) et diminuant en période de déflation (précisément quand une expansion monétaire serait au contraire souhaitée). Ainsi que l'explique Robert W. Dimand (2003b, p. 114) :

> The new central banking system was to act in accordance with the real bills doctrine . . . that discounting by a lender of last resort of bills arising from real economic activity . . . would be neither inflationary nor deflationary. . . . This doctrine dominated economic thinking in the Federal Reserve System in the 1920s . . . Thinking in [these] terms . . . the Federal Reserve System looked to nominal interest rates and member bank indebtedness at the discount window as indicators of the ease or tightness of monetary policy, rather than to the quantity of money, price level, or real interest, and so mistakenly believed monetary policy to be easy even in the depths of the Great Contraction of the early 1930s.

L'attitude passive des dirigeants du *Federal Reserve Board* face à la spirale déflationniste allait être sévèrement critiquée par certains économistes, inquiets de voir la masse monétaire se contracter[33]. Ces derniers allaient chercher à se faire entendre. Lors de l'été 1931, par exemple, Irving Fisher alerta Eugene Meyer, gouverneur du *Federal Reserve Board*, sur le danger représenté par la contraction des dépôts transférables par chèque, dont ce dernier était visiblement loin d'avoir saisi toute la mesure[34]. En janvier 1932, l'administration Hoover

[33] Voir par exemple Fisher (1933b, p. 347) ou Currie (1934), qui anticipaient les critiques formulées bien plus tard par Friedman et Schwartz (1963, pp. 407-19). Sur l'attachement de la Réserve fédérale à la *real bills doctrine* ou *commercial loan theory of banking*, voir également Currie ([1934a] 1968, p. 34ff.) et Whitllesey (1935, pp. 3-4). Voir aussi, sur ce sujet, le récent ouvrage d'Humphrey et Timberlake (2019).

[34] Voir Cargill (1992, pp. 1275-76), qui cite une lettre de Fisher à Clark Warburton, datée du 23 juillet 1946, dont l'extrait suivant est révélateur : "[I]n the summer of 1931 I called on Eugene Meyer, the chairman of the Federal Reserve Board. I said: 'I am getting alarmed to see demand deposits diminish. It seems to me this may make great trouble.' He said: 'What did you call the figure?' Amazed, I said: 'The full name is individual deposits subject to check without notice.' He rang a bell and asked his assistant . . . In a few minutes the report came in and I pointed and said: 'You see that during the last

allait être enjointe, à la fois par un mémorandum émanant de trois jeunes économistes de Harvard, et par un télégramme signé par 24 économistes rassemblés pour une conférence à l'Université de Chicago, à agir sans tarder : il était réclamé tout d'abord d'élargir le champ des actifs éligibles auprès de la Fed, puis d'entreprendre une vigoureuse politique d'*open market*, couplée à un niveau élevé de dépenses publiques, pour contrer la déflation (Currie *et al*. [1932] 2002 ; Wright, ed., 1932, pp. 161-63)[35]. Hoover ne resta pas inactif. En décembre 1931, il prit l'initiative de mettre en place un vaste établissement public de prêt aux entreprises : la *Reconstruction Finance Corporation* (RFC), qui sera créée le 22 janvier 1932. Il lança peu après sa campagne « anti-thésaurisation » invitant les citoyens à augmenter leurs dépenses pour le bien du pays – qui allait, cependant, se solder par un échec (Barber 1985, p. 141-44). Le 27 février 1932 fut adopté le premier *Glass-Steagall Act*, autorisant notamment – en rupture avec la *real bills doctrine* – la Réserve fédérale à émettre des billets contre l'achat de titres publics. Cela permit à cette dernière de se lancer dans de vastes opérations d'*open market* : 1,1 milliard de dollars de titres publics furent achetés dans les six mois suivants (Phillips 1995, p. 25). En avril 1932, dans un mémorandum adressé au député Samuel B. Pettengill, un groupe de 12 économistes de l'Université de Chicago réclamait davantage d'injection de pouvoir d'achat dans l'économie, notamment via de larges dépenses publiques, financées idéalement par la vente directe de bons du Trésor aux *Federal Reserve Banks* (Cox *et al*., 1932 ; voir aussi Barber 1985, pp. 155-57)[36]. L'effet de relance de la politique de

several call dates there has been a continuous reduction.' He said, 'Yes, I see it.' Of course his main object should have been to see it all along and long before his attention was called to it. He was like a chauffeur going blindfolded and running into the curb because he could not see the direction in which he was driving. Senator Glass, one of the chief founders of the Federal Reserve System was blind in the same way."

[35] Sur l'appel d'Harvard, voir le "Memorandum prepared by L. B. Currie, P. T. Ellsworth, and H. D. White" de janvier 1932 (Currie *et al*. [1932] 2002, édité par Laidler et Sandilands) dont l'un des auteurs, Currie, sera l'un des premiers à proposer la réforme 100% monnaie deux ans plus tard. Ce mémorandum insistait notamment sur l'importance de financer les dépenses publiques par endettement, plutôt que par l'impôt, afin de permettre la création de moyens de paiement supplémentaires via les prêts bancaires (voir Currie *et al*. [1932] 2002, p. 537 ; Laidler et Sandilands 2002). L'appel des 24 économistes réunis à l'occasion de la conférence sur le thème "Gold and Monetary Stabilization", organisée à l'Université de Chicago sous l'égide de la Norman Wait Harris Memorial Foundation, fut envoyé au Président Hoover par télégramme le 31 janvier 1932 (voir Wright, ed., 1932). Neuf des 24 signataires allaient plus tard soutenir la proposition 100% monnaie : Garfield V. Cox, Aaron Director, Frank H. Knight, Lloyd W. Mints, Henry Schultz et Henry C. Simons de l'Université de Chicago, Irving Fisher de Yale, James W. Angell de Columbia, et Charles O. Hardy de la Brookings Institution.

[36] Ce groupe incluait cette fois sept des futurs auteurs du futur « Plan de Chicago » : les six membres déjà signataires du mémorandum de janvier 1932 (voir note précédente), plus Paul H. Douglas. Ainsi que le note Tavlas (2019a, p. 262) : "Douglas played the primary role in developing the view that fiscal deficits, and not open-market operations or re-discounting, should be used to effectuate monetary expansion during depressions".

Hoover, cependant, fut de courte durée. Fervent défenseur de l'équilibre budgétaire, celui-ci avait en effet décidé dès fin 1931 de mettre en œuvre une hausse d'impôts, parallèlement à l'accroissement des dépenses publiques – ce qui fut validé par le *Revenue Act* de 1932 (Barber 1985, p. 135 ; Phillips 1995, p. 26). Par ailleurs, la Réserve fédérale allait stopper son programme d'*open market* en juillet 1932. Il convient de rappeler qu'aucun mandat, à l'époque, n'obligeait l'autorité monétaire à intervenir pour stabiliser le niveau des prix. La version originale de l'Owen-Glass Bill – qui deviendra le *Federal Reserve Act* de 1913, portant création de la Fed – contenait pourtant, à la demande du sénateur Owen (qui collaborait alors avec Fisher), une clause obligeant la Réserve fédérale à stabiliser un indice du niveau des prix ; mais celle-ci fut rejetée à la Chambre des Représentants sous l'influence de Carter Glass, alors député (voir Dimand 2003b, p. 108 ; 2019, pp. 66-67). De nombreux autres projets de lois ayant le même objet, généralement appuyés par Fisher, furent de même rejetés dans les années 1920. Au printemps 1932, le député T. Alan Goldsborough – toujours en collaboration avec Fisher – soumit un nouveau projet de loi obligeant la Fed à entreprendre une « reflation », puis une stabilisation, du niveau des prix. Mais celui-ci, largement voté à la Chambre des Représentants, fut rejeté au Sénat, une nouvelle fois sous l'influence de Glass (voir Barber 1985, pp. 160-61 ; Phillips 1995, p. 26). Libre de toute obligation de combattre la déflation, la Réserve fédérale allait rester passive lorsqu'une nouvelle vague de faillites bancaires survint à la fin 1932, se prolongeant en 1933 (Barber 1985, p. 186). Au 3 mars 1933, des fermetures de banques (*bank holidays*) avaient été déclarées dans plus de la moitié des États fédérés, et, lorsque le nouveau président Franklin D. Roosevelt entra en fonction le 4 mars, « le système bancaire des États-Unis vacillait au bord de l'effondrement total » (Phillips 1995, p. 37, ma traduction[g]).

2.3. Le national bank holiday *et le mémorandum de Chicago de mars 1933*

Le premier acte du président Roosevelt fut la proclamation, le 5 mars 1933, d'un *bank holiday* national : toutes les banques allaient devoir rester fermées, le temps de procéder à leur examen, et seules celles jugées suffisamment saines seraient autorisées à rouvrir. Suite à l'*Emergency Banking Act* voté en urgence le 9 mars, la réouverture des banques commença le 13 mars. Les ruées avaient alors pratiquement cessé (Phillips 1995, pp. 41-42). Les jours suivants, un groupe de huit économistes de l'Université de Chicago – Garfield V. Cox, Aaron Director, Paul H. Douglas, Albert G. Hart, Frank H. Knight, Lloyd W. Mints, Henry Schultz

[g] ". . . the banking system in the United States teetered on the edge of total collapse".

et Henry C. Simons[37] – commença à faire circuler de manière privée un mémorandum de six pages, dont une copie fut adressée à Henry A. Wallace, Secrétaire à l'Agriculture, le 16 mars (Phillips 1995, pp. 47-48). Une lettre d'introduction, rédigée par Knight et signée par les huit membres, annonçait que ceux-ci avaient cherché à formuler un programme de réforme « à la fois pour répondre à l'urgence, et pour une réforme bancaire permanente » (Knight *et al.* [1933] 1995, p. 191, ma traduction[h]). Il était en effet question d'éviter que toute autre dépression similaire puisse se produire à l'avenir. À cette fin, le mémorandum contenait une proposition de réforme radicale, qui allait, par la suite, être connue sous le nom de *"Chicago Plan of banking reform"*, selon l'expression forgée par Hart (1935). Il s'agissait, d'une part, de confier le privilège exclusif de la création monétaire à l'État : les *Federal Reserve Banks* seraient rachetées par l'État fédéral et leurs émissions auraient pleinement cours légal, tandis que les dépôts bancaires « transférables par chèque ou exigibles sur demande » seraient confiés à un nouveau type d'institutions (« Banques de Dépôt »), « qui seraient tenues de maintenir 100% de réserves en monnaie légale et/ou en dépôts auprès des *Reserve Banks* », et se rémunéreraient « exclusivement par des frais de service » (*ibid.*, pp. 193-95, ma traduction[i]). On retrouve là l'essentiel de la proposition 100% monnaie telle que nous l'avons décrite dans l'introduction[38]. Il s'agissait, d'autre part, de mettre fin à l'activité de prêts bancaires, et de remplacer les banques, dans leur fonction d'allocation de l'épargne, par des fonds d'investissement (ou « Entreprises de prêt ») qui ne seraient autorisés à « prêter ou investir seulement les fonds investis par [leurs] actionnaires (et, peut-être, [leurs] obligataires) » (*ibid.*, p. 195, ma traduction[j])[39]. Dans ce système, les émissions monétaires

[37] Tous ces membres figuraient déjà parmi les signataires du mémorandum adressé à Pettengill en avril 1932 (à l'exception de Hart), ainsi que du télégramme adressé à Hoover en janvier 1932 (à l'exception de Douglas et Hart).

[h] ". . . both for emergency relief, and for permanent banking reform".

[i] "subject to check or to payment on demand" ; "Deposit-Banks" ; "which shall be required to maintain reserves of 100% in lawful money and/or deposits with the Reserve Banks" ; "solely from service-charges".

[38] Avec certaines particularités propres au Plan de Chicago cependant : (i) les banques existantes seraient dissoutes et remplacées par de nouvelles institutions, alors que dans d'autres propositions elles seraient conservées, et simplement scindées en différents départements ; (ii) l'obligation de 100% de réserves s'appliquerait ici aux dépôts transférables par chèque ou « payables à vue », alors que dans d'autres propositions seuls les dépôts transférables seraient concernés ; (iii) la fonction d'autorité monétaire serait ici exercée par les *Federal Reserve Banks* nationalisées ; dans d'autres propositions, cette fonction serait confiée à une nouvelle autorité monétaire spécialement créée.

[j] "Lending Companies" ; "to lend or invest only the funds invested by [their] stockholders (and, perhaps, bondholders)".

[39] Il s'agit ici d'une disposition propre au Plan de Chicago, que l'on ne retrouvera ni dans les propositions de Currie, ni dans celles de Fisher (voir à ce sujet le chapitre 3).

auraient principalement pour contrepartie des bons du Trésor, et l'étalon-or serait abandonné (*ibid.*, pp. 196-97). Ces mesures, selon les auteurs, « fourniraient une solution permanente au problème bancaire, et amèneraient une nette amélioration de la production et de l'emploi » (*ibid.*, p. 197, ma traduction[k]). Le mémorandum se concluait sur une question non tranchée : celle de l'objectif de gestion monétaire à long terme, à propos duquel les avis des auteurs divergeaient. Ils s'accordaient, cependant, sur le critère d'une stabilisation du niveau des prix « comme solution de court terme » (*ibid.*, p. 198, ma traduction[l]). En avril 1933, selon Phillips (1995, p. 52), Simons apportera davantage de précisions sur ce point dans une version révisée du mémorandum, insistant notamment sur le fait que l'autorité monétaire, bien que renforcée, devrait être dénuée de tout pouvoir discrétionnaire. Le mémorandum de Chicago de mars 1933 rencontra un intérêt certain au sein de l'administration présidentielle, comme en témoigne l'appréciation élogieuse qu'en fit Wallace dans une lettre du 23 mars à Roosevelt[40]. Il suscita également un certain nombre de réponses de la part d'économistes, parmi lesquels Fisher[41]. Ce mémorandum, comme le souligne Phillips (1995, pp. 52-53), fut distribué au moment même où démarraient des discussions sur une réforme de la législation bancaire, et l'un des objectifs des économistes de Chicago était d'éviter la nationalisation des banques, alors considérée comme une vraie possibilité.

2.4. Le mémorandum de Chicago de novembre 1933 et le projet de loi Cutting

Le *Banking Act* de 1933 – également connu comme le second *Glass-Steagall Act* –, adopté en juin 1933, établit une séparation entre les activités de banque d'investissement et de banque commerciale, fit du *Federal Open Market Committee* – jusqu'alors informel – un organisme officiel, et instaura une assurance sur les dépôts (Phillips 1995, p. 56). Comme le note Phillips

---

[k] "The measures outlined above would . . . provide a permanent solution of the banking problem, and bring about marked improvement in production and employment".

[l] "as a short-run expedient"

[40] "The memorandum from the Chicago economists which I gave you . . . is really awfully good" (Lettre de Wallace à Roosevelt, 23 mars 1933, citée par Phillips 1995, p. 198). Le mémorandum de Chicago du 16 mars 1933, ainsi que la lettre de Knight l'accompagnant, et la lettre de Wallace à Roosevelt du 23 mars, sont reproduits en annexe de l'ouvrage de Phillips (1995, pp. 191-99). Ce dernier précise que l'opinion de Roosevelt lui-même quant au Plan de Chicago n'est pas connue (*ibid.* p. 53).

[41] Fisher commenta : "I realize that you offer this as an academic rather than a practical proposition but I am extremely glad that you are doing so. If it can be made practical I would, I think, favor it and I have been thinking along those lines myself" (lettre de Fisher à Simons, 19 mars 1933, Simons Papers, citée par Phillips 1995, p. 50). Comme le note William R. Allen (1993, p. 704), Fisher n'allait pas tarder à soutenir l'idée du plan : "He was not an instant convert—not quite—but within a few months he had eagerly adopted the proposal and become its most enthusiastic and conspicuous proponent".

(1995, p. 58), si cet Acte permit de mettre fin aux ruées bancaires, il ne répondait pas à l'autre grande préoccupation liée aux banques – celle de relancer la dynamique du crédit – et d'autres réformes s'avéraient nécessaires. En novembre 1933, les économistes de Chicago signataires du mémorandum de mars en firent circuler une nouvelle version plus détaillée de 15 pages ("Banking and Currency Reform"), accompagnée d'une annexe de 6 pages ("Banking and Business Cycles") et d'un « mémorandum supplémentaire » de 8 pages ("Long-time objectives of monetary management")[42]. Ces textes furent principalement rédigés par Simons[43]. Cette fois, l'accent n'était plus mis sur la sûreté des banques : cette question avait été largement réglée, entre-temps, par l'adoption de la garantie des dépôts. Deux autres arguments étaient mis en avant. D'une part, le système existant de « "banque libre" au regard de la monnaie scripturale » était accusé d'amener « une régulation ou manipulation de la monnaie qui est totalement perverse. La monnaie est créée quand elle devrait être détruite, et détruite quand elle devrait être créée » (Simons *et al.* [1933] 1994, p. 31, ma traduction[m]). Cette analyse fut détaillée dans l'annexe "Banking and Business Cycles" (*ibid.*, pp. 45-49), où il était expliqué qu'en raison de la grande sensibilité de la circulation monétaire aux variations des profits commerciaux, couplée à la rigidité des coûts de production (salaires notamment), l'offre et la demande de prêts augmentaient fortement en phase de hausse des profits, et diminuaient fortement en phase de baisse, provoquant des variations cumulatives de la vitesse de circulation de la monnaie (V). En raison du lien de dépendance de la quantité de monnaie (M) envers les prêts bancaires, s'y ajoutaient des variations cumulatives de M qui aggravaient le processus. C'est pourquoi il était proposé de séparer la création monétaire de l'activité du crédit. D'autre part, le système existant était vu comme conduisant à l'accaparement par des acteurs privés des profits de la création monétaire, et il était jugé « ridicule » ("preposterous"), pour cette raison, que toute nouvelle injection de monnaie ne soit pas réalisée par l'État lui-

[42] Cet ensemble de trois documents a été publié pour la première fois dans la revue *Research in the History of Economic Thought and Methodology*, Archival Supplement 4, 1994, pp. 31-40. Nous nous référons à cette édition pour la pagination.

[43] Beardsley Ruml, doyen de l'Université de Chicago, précisa dans une lettre à Fisher : "The memorandum is the result of months of group discussions. It represents a sort of revision and extension of the memorandum circulated not very widely last Spring over the signatures of F. H. Knight, Paul Douglas, Garfield V. Cox, W. Lloyd Mints, Aaron Director, Henry C. Simons. The present memorandum has been prepared by Mr. Simons with generous assistance and criticisms from others named above and from Mr. C. O. Hardy, of Brookings. Mr. Douglas, while endorsing the proposals with reference to banking, has not participated in formulating the recommendations for long-run monetary management" (lettre de Ruml à Fisher, 9 janvier 1934, Fisher Papers, Yale University).

[m] "'[F]ree banking' with respect to deposit currency . . . gives us a regulation or manipulation of currency which is totally perverse. Money is created when it should be destroyed, and destroyed when it should be created."

même (*ibid.*, p. 38). Il était ajouté que l'émission monétaire requise lors de la transition vers le nouveau système (impliquant des rachats massifs de bons du Trésor aux banques afin de doter celles-ci des 100% de réserves requises derrière leurs comptes courants) permettrait de réduire considérablement (voire d'éliminer) la dette publique (*ibid.*, p. 33). Pour l'ensemble de ces raisons, le mémorandum appelait à l'« [a]bolition du crédit bancaire privé comme élément du moyen de circulation » et à l'« [é]tablissement d'un moyen de circulation complètement homogène, contrôlé en quantité par une agence gouvernementale » (*ibid.*, p. 39, ma traduction[n]). Il était ajouté ce que dernier contrôle devait s'effectuer « selon des règles précises, mécaniques, explicitement prescrites dans la législation » (*ibid.*, ma traduction[o]). Cela renvoyait à la préférence des économistes de Chicago pour une règle de politique monétaire automatique, telle qu'une fixation de la quantité de monnaie, plutôt qu'une règle de stabilisation du niveau des prix qui laisserait une certaine marge de discrétion à l'autorité monétaire[44]. Les raisons de cette préférence furent détaillées dans le mémorandum supplémentaire, "Long-time objectives of monetary management" (*ibid.*, pp. 41-45).

Le mémorandum de Chicago de novembre 1933, note Phillips (1995, pp. 66-75), fut plus largement distribué que celui de mars, et suscita un intérêt (et des critiques) de la part des économistes, à la fois au sein de la sphère académique et de l'administration Roosevelt. Il fut débattu en particulier au sein du Département d'Agriculture, où Rexford Tugwell, Secrétaire assistant, et surtout Gardiner Means, assistant de Tugwell, travaillaient eux-mêmes sur des propositions de réforme visant à séparer les activités de banque de virement et de banque de prêt (Phillips 1995, pp. 68-72)[45]. Le mémorandum rencontra également un intérêt parmi les parlementaires, notamment au sein des Républicains progressistes (*ibid.*, p. 72). Parmi ceux-ci, Bronson Cutting, sénateur du Nouveau Mexique, suggéra aux auteurs de Chicago de transcrire leurs idées dans un projet de loi (*ibid.*, pp. 73-74). Simons rencontra Cutting en mars 1934, mais, ne se sentant pas qualifié pour rédiger un projet de loi dans sa globalité, il n'en rédigea qu'une ébauche ; à partir de celle-ci, le projet de loi fut rédigé par Robert H.

[n] "Abolition of private-bank credit as an element in the circulating medium"; "[e]stablishment of a completely homogeneous circulating medium, controlled as to quantity by a governmental agency".

[o] "under precise, mechanical rules prescribed explicitly in legislation".

[44] Douglas, cependant, ne partageait pas cette position, et préférait une règle de stabilisation du niveau des prix (voir Tavlas 2019a, p. 262). À ce sujet, voir également Tavlas (2019b), qui contraste la position des économistes de Chicago avec celle de Fisher.

[45] Ainsi que l'explique Phillips (1995, p. 68) : "In late 1933 and early 1934, the administration debate over the Chicago plan was centered within the Department of Agriculture. This is not surprising given the concern over the debt situation of farmers. Henry Morgenthau was the head of the Farm Credit System, and Rexford Tugwell was Assistant Secretary of Agriculture; both had a strong interest in reform of the financial system."

Hemphill, un expert monétaire et financier qui soutenait lui-même les principes du 100% monnaie depuis plusieurs années (*ibid*, p. 79)[46]. Le projet de loi fut introduit en juin 1934 par Cutting au Sénat, et par Wright Patman, député du Texas, à la Chambre des Représentants (*ibid*, p. 81). Phillips (*ibid.*, p. 81-82) en résume ainsi le contenu :

> [T]he bill proposed to (1) segregate demand from savings deposits; (2) require the banks to keep 100 percent reserves against their demand deposits; (3) require them to keep 5 percent reserves against their savings deposits; (4) set up a Federal Monetary Authority with full control over the supply of currency, the buying and selling of government securities, and the gold price of the dollar; (5) have the FMA take over enough of the bonds of the banks to provide 100 percent reserve against their demand deposits; and (6) have the FMA raise the price level to its 1926 position and keep it there by buying and selling government bonds.

On retrouve ici l'essentiel de la proposition de Chicago, avec deux différences notables cependant : les banques pourraient continuer à exercer leur fonction d'intermédiaire financier à partir de leurs dépôts d'épargne, et le critère de politique monétaire retenu était celui d'une stabilisation du niveau des prix. Sur ces deux points, le projet de loi Cutting se révélait beaucoup plus proche de la version du plan qui allait être développée par Fisher. Phillips (1995, pp. 82-83) note que l'introduction de ce projet de loi ne visait qu'à placer la proposition de 100% de réserves sur l'agenda politique ; il était clair qu'il n'avait à ce moment-là que peu de chances d'être adopté.

Simons soutint encore l'idée de 100% de réserves dans un pamphlet publié en 1934 (Simons [1934] 1948). À partir de janvier 1934, cependant, il allait se montrer de plus en plus préoccupé par une question qui, selon lui, remettait en question l'efficacité d'une telle réforme : celle de la création de substituts à la monnaie, non seulement en tant que moyen de paiement, mais surtout en tant que réserve liquide de valeur[47]. Selon lui, la création (destruction) d'actifs liquides par les institutions financières, via notamment les contrats de dette à court terme qu'elles émettaient, avait pour effet d'accélérer (ralentir) considérablement la vitesse de circulation de la monnaie (V), même si la quantité de moyens de paiement (M)

---

[46] Hemphill (1876-1941) était un auteur financier, qui fut le premier gestionnaire de crédit de la *Federal Reserve Bank* d'Atlanta. Il témoigna en faveur de la réforme 100% monnaie lors des auditions parlementaires sur le *Banking Act* de 1935, et rédigea le "Foreword by a Banker" en ouverture de l'ouvrage *100% Money* de Fisher ([1935] 1945). Ce dernier précisait en préface de son ouvrage : "Robert H. Hemphill . . . has, he tells me, advocated the 100% principle for many years" (Fisher [1935] 1945, p. xii).

[47] Voir par exemple sa correspondance avec Douglas, Fisher ou Hayek, citée par Phillips (1995, pp. 89-92). Sur les échanges entre Simons et Fisher, voir également Barber *et al*. (1997, Vol. 14, pp. 126-29).

restait inchangée[48]. Pour cette raison, à ses yeux, le risque de voir se développer de graves épisodes de booms et de dépressions demeurerait bien réel. Simons allait dès lors se montrer particulièrement réticent à soutenir l'application pratique du plan 100%, tant qu'aucune réponse ne serait apportée à cette question. Se tenant à l'écart des projets de loi, il continuera de soutenir l'idée de 100% monnaie sur un terrain purement académique, insistant qu'une telle réforme devait, pour être véritablement effective, se coupler à l'interdiction de tous types de contrats de dette (Simons 1936, pp. 6-7 ; 1946, p. 89). En parallèle, il abandonnera ses recommandations d'une règle automatique de régulation de la quantité de monnaie (qu'il continuera de considérer comme idéale, mais seulement en théorie), et soutiendra la stabilisation du niveau des prix comme le meilleur objectif de politique monétaire réalisable en pratique (Simons 1936, p. 21).

2.5. Les plans de Currie et Fisher, et la préparation du Banking Act de 1935

Fisher, de son côté, allait rapidement devenir l'un des plus fervents partisans de la réforme 100% monnaie. Ainsi que le note Allen (1993, pp. 707-08) : "By the end of 1933, Fisher had actively entered the lists in support of 100 percent reserves. He helped to spread awareness of the Chicago memoranda, and he repeatedly acknowledged his indebtedness to Simons and to others for his introduction to the general plan." Dès janvier 1934, l'économiste de Yale avait préparé une ébauche de projet de loi visant à instaurer un système de 100% de réserves, ainsi que des notes de discours, pour le député Goldsborough. Ce n'était que le début d'une longue série de travaux sur le sujet : "beginning in 1934 and through the rest of his life, Fisher produced a flood of output . . . and became the central figure in the debate" (Allen 1993, p. 708). Durant l'année 1934, Fisher envoya le manuscrit de son ouvrage *100% Money*, alors en préparation, à plus de 150 destinataires – essentiellement des économistes et des banquiers – afin de récolter un maximum de critiques.

À partir de 1934, un autre auteur allait développer indépendamment l'idée d'un système 100% monnaie. L'économiste Lauchlin Currie, né au Canada, alors professeur assistant à Harvard, publia cette année-là un ouvrage remarqué, *The Supply and Control of Money in the United States*, dans lequel il analysait en détail les défauts du système existant en matière de contrôle monétaire. Il critiquait en particulier « l'élasticité perverse du *Federal Reserve System* », sous lequel « durant la phase ascendante du cycle d'affaires la masse monétaire tend automatiquement à gonfler, et durant la phase descendante à se contracter » (Currie [1934a]

[48] Son analyse différait sur ce point de celle de Fisher, selon qui *V* n'avait tendance à varier fortement que si *M* variait fortement également. Nous traitons de cette question au chapitre 3.

1968, pp. 130-31, ma traduction[p]). Dans un chapitre sur les « conditions idéales de contrôle », il arguait que « le contrôle le plus parfait pourrait être obtenu par une émission directe par l'État de toute la monnaie, à la fois les billets et les dépôts transférables par chèque » (*ibid.*, p. 151, ma traduction[q]), et détaillait ensuite sa propre version de la proposition 100% monnaie[49]. À l'inverse du Plan de Chicago, et à l'instar de Fisher, il proposait 100% de réserves sur les seuls dépôts transférables par chèque, laissant aux banques la liberté d'utiliser des dépôts d'épargne (non transférables) pour financer leurs prêts et investissements (*ibid.*, p 152). Une particularité de sa proposition était de requérir 0% de réserves derrière les dépôts d'épargne (*ibid.* p. 163) ; une autre était d'envisager une autorité monétaire (en l'occurrence, le *Federal Reserve Board*) qui ne serait pas nécessairement indépendante du gouvernement[50]. En juin 1934, Currie fut invité par Jacob Viner – alors assistant spécial du Secrétaire au Trésor Morgenthau – à rejoindre le *"Freshman Brain Trust"* à Washington, où il fut chargé de réfléchir à un système monétaire idéal[51]. En septembre 1934, il soumettra un rapport reprenant et développant sa version du plan 100% (Currie [1934b] 1968), qui, bien que « doucement enterré » par Viner, fera forte impression sur ce dernier (Currie [1953] 2004, p. 202, ma traduction)[52]. En novembre 1934, Currie rejoignit Marriner Eccles au *Federal Reserve Board*, lorsque celui-ci en fut nommé président (Sandilands 2004, p. 175). Ensemble, Currie et Eccles allaient rédiger ce qui deviendra le *Banking Act* de 1935 (Sandilands 1990, pp. 62-66 ; 2004, p. 176-77 ; Phillips 1995, pp. 101-04, 115-17 ; Meltzer 2003, p. 415). À la fin de l'année

---

[p] "The perverse elasticity of the Federal Reserve System"; "on the upswing of the business cycle the supply of money automatically tends to expand, and on the downswing to contract."

[q] "Ideal conditions for control"; "the most perfect control could be achieved by direct government issue of all money, both notes and deposits subject to check".

[49] Currie n'avait pas connaissance alors des mémoranda de Chicago. Il précisait en note de bas de page : "As these pages were going through the press Mr. A. G Hart called my attention to a mimeographed report on Banking and Currency Reform prepared by a group of economists in the University of Chicago" (Currie [1934a] 1968, p. 156n1).

[50] "Personally I feel that no government can delegate to an independent body such a supremely important factor for good or ill as the control of the monetary system" (Currie [1934a] 1968, p. 155).

[51] Currie ([1953] 2004, p. 201) relate ainsi dans ses mémoires : "Secretary Morgenthau suggested to Professor Jacob Viner that he assemble the best young brains he could find in the fields of monetary theory, public finance and banking legislation, give them an absolutely free rein and see what they could come up with. . . . Thus the Freshman Brain Trust of 1934 was born. . . . My assignment, complete liberty to develop the most perfect monetary system in the world, was a challenge to which I responded eagerly. For three months I was completely absorbed in my work elaborating in considerable detail what I called the 100 percent Reserve System, which I had suggested in my book on money". Sur le parcours de Currie, voir notamment Sandilands (1990).

[52] "Although Viner quietly buried my report, he was sufficiently impressed with my work to ask me to remain at the Treasury as his assistant – an opportunity I jumped at" (Currie [1953] 2004, p. 202).

1934, en effet, la réforme du *Federal Reserve System* était devenue une priorité de l'administration Roosevelt (Phillips 1995, p. 93).

Dans ce contexte, Fisher intensifia son lobbying en faveur du plan 100%. En janvier 1935, accompagné de Hemphill, il rencontra Roosevelt à la Maison blanche (Barber *et al*. 1997, Vol. 14, p. 94)[53]. Outre de nombreux discours et articles de presse, il défendit cette idée de réforme lors des auditions parlementaires relatives au *Banking Act* (voir Fisher 1935a). En avril 1935 fut publiée la première édition de l'ouvrage qu'il préparait depuis plus d'un an, dont le titre entier résumait à lui seul les avantages qu'il attribuait à la proposition : *100% Money, Designed to keep checking banks 100% liquid; prevent inflation and deflation; largely to cure or prevent depressions; and to wipe out much of the National Debt*. Fisher insistait beaucoup sur le fait que son plan ne visait pas à nationaliser l'*activité bancaire*, mais la *monnaie* (Fisher [1935] 1945, p. 18). L'ouvrage s'ouvrait par un « Avant-propos par un banquier » (Hemphill) et se concluait par des « Commentaires de deux banquiers » (les président et vice-président de la *Plaza Bank* de St. Louis), tandis que la préface mentionnait de nombreux autres banquiers s'étant prononcés en faveur du plan[54]. Afin d'insister sur le caractère réalisable de celui-ci, Fisher se référait abondamment au *Bank Charter Act* anglais de 1844, qui incarnait à ses yeux les mêmes principes que le 100% monnaie[55]. À l'inverse du Plan de Chicago (mais cette différence ne fut pas soulignée par Fisher), il n'était nullement question pour Fisher de supprimer les banques en tant qu'institutions de prêt, mais plutôt d'établir une séparation nette entre les dépôts remplissant une fonction de moyen de paiement (soumis à 100% de réserves) et ceux remplissant une fonction d'investissement (demeurant couverts de manière seulement fractionnaire par des réserves, mais ne pouvant servir de moyens de paiement) (*ibid.*, pp. 12-13). La monnaie serait créée et régulée par une « Commission monétaire » ("Currency Commission"), indépendante à la fois des banques et du Gouvernement, et soumise à un mandat défini par le Congrès (*ibid.*, pp. 9, 206). Fidèle à son idéal d'un pouvoir d'achat stable du dollar, Fisher avait pour préférence une politique de

[53] Sur les nombreux échanges entre Fisher et Roosevelt durant la période du New Deal, voir Allen (1977) ; sur la campagne de Fisher en faveur du plan 100% monnaie, voir Allen (1993) et Dimand (1993b).

[54] La profession bancaire, en effet, n'était pas systématiquement hostile à la proposition 100% monnaie, comme en témoigne une recension de l'ouvrage de Fisher par le banquier Harvey E. Fisk dans l'*American Economic Review* : "The plan itself is simple, and apparently the mechanics of its operation also is simple; but, after all, it is a radical proposition. However, coming from Fisher after he has discussed it for over a year with economists and bankers of standing, it should not lightly be brushed aside" (Fisk 1935, p. 569).

[55] Nous formulons cependant une critique de cette comparaison au chapitre 2.

stabilisation du niveau général des prix, dont l'exemple récent de la politique menée avec succès par la Suède, insistait-il, démontrait qu'elle était parfaitement réalisable (*ibid.*, p. 86). Tout comme Simons ([1934] 1948, pp. 55-56), Fisher voyait dans la réforme 100% monnaie l'un des meilleurs remparts pour sauvegarder le capitalisme, qui était à l'époque de plus en plus menacé en Occident[56].

2.6. Le passage du Banking Act *de 1935 et l'échec de l'adoption du plan 100% monnaie*

Le projet de loi qui allait devenir le *Banking Act* de 1935 – largement rédigé par Currie avec des apports substantiels d'Eccles (Sandilands 1990, p. 64 ; Phillips 1995, p. 116) – contenait trois titres. Le premier, qui visait à établir une garantie permanente des dépôts, et le troisième, qui contenait des dispositions techniques, ne furent pas particulièrement sujets à controverse. Comme le note Phillips (*ibid.*, p. 119) : "The debate over the bill centered on Title II which sought to give greater powers to a revised Federal Reserve Board whose members would be appointed by the president". Pour les partisans de la réforme 100% monnaie, la Section 209 du Titre 2, en particulier, revêtait une importance singulière. Il y était stipulé la clause suivante (citée par Phillips 1995, pp. 116-17) :

> "[T]he Federal Reserve Board, in order to prevent injurious credit expansion or contraction, may by regulation change the requirements as to reserves to be maintained against demand or time deposits or both by member banks in any or all Federal Reserve districts and/or any or all of the three classes of cities referred to above".

Ainsi que le précise Sandilands (1990, p. 66) : "It had been Currie's intention to give the Board unlimited powers to alter reserve requirements, with a view eventually to achieving the 100 percent reserve system". Une version révisée du projet de loi – mais contenant cette Section 209 inchangée – fut adoptée par la Chambre des Représentants le 9 mai. Mais au Sénat, le Titre II du projet, dans son ensemble, rencontra la farouche opposition de Glass, « violemment opposé aux changements législatifs qui révisaient le système qu'il avait mis en place en 1913 » (Sandilands 1990, p. 64, ma traduction[r]). Surtout, Glass avait été fort vexé de ne pas avoir été consulté par Roosevelt pour la nomination d'Eccles à la tête du *Federal*

---

[56] "I am convinced that, without stable money, the private profit system will some day go. This means that the bankers, as long as they insist on operating or are permitted to operate, their 10% system, will be playing with fire. The best available safeguard against the overthrow of capitalism is the 100% system, combined with money management, to give us a stable dollar. Of all people, bankers should, therefore, favor this proposal if only in self-defense. Otherwise, by the irony of fate, they may some day be the ones to upset capitalism" (Fisher [1935] 1945, p. 219).

[r] "violently opposed to the legislative changes which overhauled the system he had put in place in 1913."

Reserve Board (Sandilands 1990, p. 64), ainsi que de ne pas avoir eu le projet de loi entre les mains avant son introduction au Congrès (Phillips 1995, p. 120). Il fit tout pour vider le Titre II de sa substance. L'addition suivante fut ainsi apportée à la Section 209, concernant la possibilité pour le *Board* de modifier les contraintes de réserves :

> "but the amount of the reserves required to be maintained by any such member bank as a result of any such change shall not be less than the amount of the reserves required by law to be maintained by such bank on the date of enactment of the Banking Act of 1935 nor more than twice such amount" (quoted by Phillips 1995, pp. 126-27).

Comme le note Phillips (*ibid.*, p. 127) : "This effectively prohibited any move to raise reserve requirements to 100 percent"[57]. Entre-temps, le sénateur Cutting avait réintroduit son projet de loi (visant à créer une Autorité monétaire fédérale et instaurer 100% de réserves) le 4 mars, mais il mourut tragiquement dans un accident d'avion le 6 mai (*ibid.*, pp. 122, 125). Une dernière proposition d'amendement visant à introduire une clause de 100% de réserves dans le *Banking Act* de 1935 fut rejetée en juillet (*ibid.*, p. 126).

Les efforts des partisans d'une réforme 100% monnaie de transcrire leur proposition dans le *Banking Act* de 1935 furent donc vains. Phillips (*ibid.*, p. 134) avance au moins quatre raisons permettant d'expliquer cet échec : "(1) administration blunders in the handling of the banking legislation; (2) an ill-informed public; (3) the death of Senator Bronson Cutting; and (4) a belief that the Banking Act of 1935 would not be the final New Deal banking legislation". La première de ces raisons renvoie au fait que l'administration ait omis de consulter Glass. La seconde, précise Phillips (*ibid.*),

> was a misunderstanding of the implications of the 100 percent reserve plan. Despite the efforts of Irving Fisher to educate the public, there was a characterization of the plan as one to end private banking (Allen 1993). This view was fueled by articles such

[57] La possibilité offerte par le *Banking Act* de 1935 de doubler les contraintes de réserves fut cependant saluée par Fisher, dans la préface de la seconde édition de son ouvrage parue en 1936, comme « un pas dans la direction de l'idée 100% » (Fisher [1935] 1945, p. vii, ma traduction ["a step in the direction of the 100% idea"]). Le *Federal Reserve Board* utilisera ce nouveau pouvoir dès juillet 1936, doublant en l'espace de quelques mois le ratio de réserves requises (Meltzer 2003, pp. 502-09). Cette décision allait être interprétée par certains (notamment Friedman et Schwartz 1963, pp. 517-34) comme ayant causé la récession de 1937-38, tandis qu'Eccles et Currie attribuèrent plutôt cette dernière au resserrement concomitant de la politique budgétaire (voir Currie [1938] 1980 ; Friedman and Schwartz 1963, p. 534 ; Sandilands 2004, pp. 178-85). Toujours est-il que ce type d'action – "increasing reserve requirements *without* provision of additional reserves" (Dimand 1993b, p. 73, italiques ajoutées) – ne saurait être assimilé à une mise œuvre, même partielle, du plan 100% monnaie, qui consisterait au contraire en une hausse du ratio de réserves derrière les comptes courants *avec* fourniture des réserves requises supplémentaires. Quoi qu'il en soit, comme le note Dimand (*ibid.*) : "[t]his episode did nothing to foster confidence in higher reserve requirements as an aid to macroeconomic stability".

> as that written by Bronson Cutting titled "Is Private Banking Doomed?"—which he answers with a resounding "yes".

Il semblait en effet y avoir un écart important entre, d'un côté, les discours de Cutting, et, de l'autre, le projet de loi porté par celui-ci – qui, rappelons-le, fut rédigé par Hemphill à partir d'une ébauche de Simons. La proposition incarnée dans le projet de loi Cutting visait à instaurer un système 100% monnaie – qui avait été conçu, par ses théoriciens, comme la meilleure alternative à la nationalisation des banques[58]. Dans ses interventions publiques, par contre, Cutting tenait un discours totalement à l'opposé de cette position :

> Cutting thought that bankers were responsible for the severity of the depression . . . and lamented FDR's failure to nationalize the banks in March 1933. . . . On May 19, 1934, [he] gave a speech to the People's Lobby in which he announced his intention to introduce a bill to create a national bank that would have a monopoly of credit and consequently prohibit private bankers from making profits through lending activities. (Phillips 1995, pp. 80-81)

D'une manière plus générale, Phillips (1995, pp. 77-78, 118) note que les débats, à la fois au Congrès et dans la presse, témoignaient souvent d'une grande confusion entre monnaie et crédit, et se méprenaient fréquemment sur les intentions du plan 100% monnaie.

Quoi qu'il en soit, l'échec de ses tentatives d'adoption au moment du *Banking Act* de 1935 ne marqua pas, loin s'en faut, la fin des discussions de la proposition 100% monnaie, « qui commença vraiment à susciter un large intérêt dans la sphère académique après 1935 » (Phillips 1995, p. 136, ma traduction[s]) – comme nous le verrons dans la section suivante. Il ne marqua pas non plus la fin des efforts visant à l'adoption du plan. Currie – qui resta conseiller d'Eccles à la Réserve fédérale de 1934 à 1939, avant de servir comme assistant du président Roosevelt aux affaires économiques de 1939 à 1945 (Sandilands 1990 ; 2004, p. 187) – proposa une nouvelle version de son plan 100% dans un mémorandum d'août 1938 (Currie [1938] 2004) ; mais, comme il commentera plus tard : "The Plan was greeted within the Reserve System with thunderous silence. It was recognized that the Plan would have no chance of adoption, which is perhaps the reason why nobody bothered to criticize or even discuss it" (Currie [1953] 2004, p. 207). Fisher, de son côté, continua à travailler sur des projets de loi pour une réforme 100% monnaie avec les députés démocrates Charles G. Binderup du Nebraska et Wright Patman du Texas en 1937 et 1938 (Barber *et al*. 1997, vol. 14, p. 171), puis, à partir de 1939, avec Jerry Voorhis, député démocrate de Californie. Il

[58] Ainsi, selon Fisher ([1935] 1945, p. 203) : "So far from nationalizing the banks, the 100% system might afford the banks the only escape from nationalization". Voir également Simons ([1934] 1948, pp. 319-20n6) ou Currie ([1934b] 1968, p. 198).

[s] "which really began to generate widespread academic interest after 1935".

cherchera jusqu'au bout à convaincre Roosevelt de l'intérêt du plan, comme en attestent ses nombreuses lettres adressées au président (voir Allen 1977, 1993 ; Barber *et al.* 1997, Vol. 14). À partir de 1939, il inscrivit ses efforts dans des démarches plus collectives, collaborant à la rédaction d'un mémorandum ("A Program for Monetary Reform") avec cinq autres économistes – Paul H. Douglas de l'Université de Chicago, Frank D. Graham de l'Université de Princeton, Earl J. Hamilton de l'Université de Duke, Willford I. King de l'Université de New York, et Charles R. Whittlesey de l'Université de Princeton[59]. Ce programme, d'inspiration très « fishérienne », fut envoyé à un millier d'économistes en février 1939. En mars 1939, Fisher affirmait avoir déjà reçu l'approbation générale de 150 d'entre eux (Barber *et al.* 1997, Vol. 14, p. 195). Le même mois, le Programme fut envoyé à Roosevelt (*ibid.*, p. 197). Une version révisée, incluant la signature additionnelle de John R. Commons de l'Université du Wisconsin[60], fut adressée au Congrès en août 1940, et à Roosevelt en janvier 1941 ; il y était mentionné que le programme était maintenant soutenu par près de 400 économistes (Fisher *et al.* 1940 ; voir aussi Barber *et al.* 1997, Vol. 14, p. 206). En 1944, Fisher chercha à rallier Keynes à sa cause. Dans une lettre félicitant ce dernier pour son discours de Bretton Woods, il ajoutait, en référence au plan 100% :

> If you are familiar enough with this plan to favor it and later to press for it in England, I think it quite possible it could, after the war, be put over for America and other countries, as the best *national* plan to interlock with the *international* plan you are now trying to put over. We could then avoid great inflation and deflation in future over a wide area. (Lettre de Fisher à Keynes en date du 4 juillet 1944, reproduite dans Barber *et al.* 1997, Vol. 14, p. 218, italiques dans l'original)

Keynes, cependant, n'était pas convaincu :

> On the matter of 100 per cent money I have, however, as you know, some considerable reservations. Possibly they may relate more to British conditions than they would to American conditions; but however that may be it prevents me from coming forward as an advocate. . . . I am afraid of your formula because I think it would, certainly in England, have a highly deflationary suggestion to a great many people. Apart from that, I am satisfied that in British conditions anyhow there are means by which we can obtain complete control over the quantity of money by means much less capable of exciting unfavourable comment and opposition. . . . (Lettre de Keynes à Fisher en date du 7 juillet 1944, reproduite dans Barber *et al.* 1997, Vol. 14, pp. 218-19)

---

[59] La version initiale de ce mémorandum, datant de février 1939, est reproduite dans la postface éditoriale de Barber *et al.* (1997, Vol. 11, pp. 301-06). Il en existe également une version allongée et beaucoup plus détaillée, en date de juillet 1939 (Fisher *et al.* 1939).

[60] Pour comprendre comment la proposition 100% monnaie s'articule avec l'institutionnalisme de Commons, voir Dutraive et Théret (2017) et Théret (2018).

Fisher fut loin d'abandonner ses efforts pour autant, bien au contraire. En juillet 1945, il sollicita les membres de l'*American Economic Association* au sujet du "Program for Monetary Reform", affirmant peu après avoir récolté 496 approbations sur 695 réponses reçues (Barber *et al*. 1997, Vol. 14, p. 239). En décembre 1946, il dénombrait environ 1200 approbations reçues (*ibid.*, p. 240). Il travaillait en parallèle à un nouveau projet de loi avec le député Voorhis[61]. Entre-temps, une troisième édition de *100% Money* parut en 1945 (une reproduction exacte de la seconde édition – épuisée – plus une nouvelle préface et un addendum), tandis que Fisher avait en tête le projet d'une quatrième édition révisée[62]. Comme le note Allen (1993, p. 715) :

> His prodigious efforts continued almost to the moment of his death on April 29, 1947—while in a terminal stay in a hospital, he wrote a long letter to President Harry S. Truman on March 27 urging "a law which will sever the tie that now binds bank loans to the volume of checkbook money".

2.7. Les débats académiques des années 1930-40 autour de la proposition 100% monnaie

Les débats sur la proposition 100% monnaie au sein des journaux académiques, comme nous l'avons mentionné, ne démarrèrent qu'en 1935. Ils furent notamment lancés par un article d'Albert G. Hart (1935) sur "The 'Chicago Plan' of Banking Reform", paru dans *The Review of Economic Studies* en février, complété par un article dans le même numéro de Charles H. Walker (1935) sur l'opportunité d'appliquer un tel plan de réforme en Angleterre. Hart – lui-même l'un des co-auteurs du Plan de Chicago – résumait les principaux avantages de la proposition de 100% de réserves, en comparait les différentes versions existantes, et en fournissait une discussion critique. La parution en avril de la même année de l'ouvrage de Fisher, *100% Money*, allait fournir une impulsion supplémentaire aux discussions[63]. En novembre, un long article de James W. Angell (1935) de l'Université Columbia, dans *The Quarterly Journal of Economics*, commentait la proposition de 100% de réserves, critiquant notamment les dispositions de mise en œuvre du plan tel que proposé par Fisher. Mais Angell – qui, rappelons-le, avait rejeté l'idée du plan en 1927 dans sa recension de l'ouvrage de

---

[61] À cette occasion, il publia une brochure "Answers to Objections to the 100% Plan" (Fisher 1946), également reproduite dans la postface éditoriale de Barber *et al*. 1997, Vol. 11, pp. 308-11.

[62] Comme en attestent ses instructions de révision de l'ouvrage, laissées à un collaborateur peu de temps avant sa mort (Lettre de Fisher à Allen K. Deeds, 19 mars 1947, Fisher Papers, Yale University Library).

[63] En 1935, la proposition 100% monnaie fut également préconisée par Paul H. Douglas de l'Université de Chicago dans son ouvrage *Controlling Depressions* (1935, pp. 184-88), ainsi que par Charles R. Whittlesey (1935) et Richard A. Lester (1935 ; voir aussi 1939, pp. 291-92, 298 ; 1941, p. 260), tous deux de l'Université de Princeton.

Soddy – fut cette fois convaincu par l'idée générale de la proposition (Angell 1935, p. 29), et offrit lui-même des suggestions pour en améliorer la mise en application[64].

Frank D. Graham, de l'Université de Princeton, soutint à son tour la proposition 100% monnaie dans un article de l'*American Economic Review* de septembre 1936. Il insistait notamment sur le caractère monétaire des dépôts à vue (Graham 1936, pp. 431-33), et sur le fait que l'émission de monnaie, ne serait-ce qu'en vertu du profit de seigneuriage auquel elle donnait droit, devait relever d'un monopole de l'État (*ibid*., pp. 430-31, 434). Les dépôts à terme, par contre, n'étant pas de la monnaie, n'avaient pas à être concernés par cette contrainte, mais il importait d'interdire légalement leur utilisation comme moyen de paiement – interdiction qui, selon Graham, suffirait à prévenir le développement de substituts monétaires dans les transactions (*ibid.*, pp. 435n12, 438). Au sein de la même revue, en mars 1937, un article de Lin Lin de l'Université de l'État d'Ohio remettait en cause la différence de nature établie par certains auteurs (Currie et Fisher notamment) entre dépôts à vue et dépôts à terme, ainsi que l'idée que la monnaie pouvait être définie comme un synonyme de moyen de paiement (Lin Lin 1937)[65].

En Angleterre, le *Journal of the Royal Statistical Society* offrit l'occasion d'un bref échange de vues entre Ralph G. Hawtrey et Fisher. Hawtrey (1936, p. 389), recensant l'ouvrage *100% Money*, pointait notamment du doigt les limites des opérations d'*open market*, qui, dans la proposition de Fisher, serviraient de principal instrument à la Commission monétaire[66]. Il leur préférait les opérations de réescompte, offrant selon lui une meilleure élasticité, mais incompatibles avec le système proposé. Fisher, dans sa note de réponse, ignora cependant cette critique, se concentrant sur une erreur d'interprétation de la part d'Hawtrey : celle de supposer que l'« objectif premier » du plan 100% était « de protéger les déposants, et ainsi de se prémunir contre les paniques » (Fisher 1937b, p. 296, ma traduction[t]). Selon Fisher, « si ce n'était que cela, le plan 100% ne vaudrait guère la peine que

[64] Cela conduira Fisher à reproduire tout un extrait de l'article d'Angell en annexe de la seconde édition de *100% Money* (voir Fisher [1935] 1945, pp. 238-46).

[65] Les termes « dépôts à vue » et « dépôts à terme », bien qu'ils ne doivent pas être entendus comme des synonymes, respectivement, de « dépôts transférables par chèque » et « dépôts d'épargne », étaient malheureusement souvent employés indifféremment dans les discussions, tant par les « auteurs 100% » que par leurs critiques. Nous abordons la question de la définition de la monnaie au chapitre 3, section 3.

[66] D'autres modes d'injection monétaire plus directs (via par exemple des dépenses publiques, ou des crédits d'impôt) étaient cependant considérés, tant par Fisher ([1935] 1945, pp. 208-09) que par les auteurs de Chicago (Simons *et al*. [1933] 1994, p. 38).

[t] "The reviewer says, 'The primary purpose is to safeguard the depositors, and so to guard against panics'."

l'on écrive à son sujet, d'autant plus qu'aujourd'hui les dépôts sont protégés d'autres manières » (*ibid.*, ma traduction[u]). Ce qui était « de loin » l'avantage le plus important du plan, à ses yeux, était « la cessation de l'inflation et de la déflation de notre moyen d'échange, et ainsi la mitigation des booms et dépressions » (*ibid.*, ma traduction[v]).

Cet argument principal en faveur du système 100% allait justement être débattu dans une série d'articles de l'*American Economic Review* au début des années 1940, suscitée par le "Program for Monetary Reform" que Fisher et ses cinq co-auteurs faisaient alors circuler (Barber *et al*. 1997, Vol. 11, p. 306). À la fois Harry Gunnison Brown (1940, pp. 312-14) de l'Université du Missouri[67], Rollin G. Thomas (1940, pp. 317-20) de l'Université de Purdue, et Benjamin Higgins (1941, pp. 92-93) de Harvard, pointèrent du doigt le fait que l'imposition de 100% de réserves derrière les seuls comptes courant ne mettrait pas fin au système de réserves fractionnaires pour les dépôts d'épargne, que ceux-ci demeureraient soumis au risque de ruées, et que les mouvements de thésaurisation ou de déthésaurisation, affectant ces dépôts, continueraient d'avoir des conséquences déflationnistes ou inflationnistes[68]. Thomas (*ibid.*, pp. 317, 319-23), dans la veine de Simons, considérait pour cette raison que, pour être effective, la réforme 100% monnaie devait s'accompagner d'une abolition des dépôts d'épargne, et même de toute forme de contrats de dette à court terme. Frank D. Graham, répondant à ces critiques dans la même revue, concéda que « le système de 100% de réserves ne [pouvait] impacter la vitesse de circulation monétaire qu'à travers le volume », tout en précisant qu'il était justement conçu « pour empêcher ces expansions et contractions perverses du volume qui aujourd'hui intensifient grandement l'influence de la thésaurisation et déthésaurisation » (Graham 1941, p. 339, ma traduction[w]). Ses interlocuteurs avaient

---

[u] "If that were all, the 100 per cent. plan would scarcely be worth writing about, especially as to-day deposits are safeguarded in other ways".

[v] "by far"; "the cessation of inflation and deflation of our circulating medium, and so the mitigation of booms and depressions."

[67] Brown présentait dans son article une virulente critique du plan 100% monnaie, ce qui pouvait paraître quelque peu surprenant au regard du fait qu'il avait été l'un des rares étudiants à effectuer sa thèse de doctorat sous la direction de Fisher à Yale, et avait notamment assisté celui-ci dans la rédaction de *The Purchasing Power of Money* (Fisher [1911] 1913). Voir Dimand (1993b, p. 71).

[68] Cette question, comme nous l'avons déjà mentionné, était une source de préoccupation majeure pour Simons, et constituait un point de divergence entre ce dernier et Fisher – comme nous le verrons plus en détail au chapitre 3. Brown, cependant (au contraire de Thomas), ne fit aucune référence à Simons.

[w] "The 100 per cent reserve system can affect monetary velocity only through volume and is designed . . . to prevent those perverse expansions or contractions of volume which today greatly intensify the influence of hoarding and dishoarding."

cependant tendance à considérer que, même pour contrôler le volume de monnaie, le système 100% ne serait pas plus efficace que le système existant[69].

Friedrich A. von Hayek, alors à la *London School of Economics*, commenta brièvement la proposition 100% monnaie dans son livre *Monetary Nationalism and International Stability* (1937). Se référant plus particulièrement à la version du plan proposée par Simons, Hayek considérait qu'il s'agissait de « la suggestion de réforme bancaire la plus intéressante qui ait été avancée ces dernières années » (Hayek 1937, p. 81, ma traduction[x]). Une telle réforme, affirmait-il, « éliminerait de manière effective la caractéristique la plus pernicieuse de notre système actuel : à savoir qu'un mouvement vers des types de monnaie plus liquides cause dans les faits une diminution de la masse monétaire totale, et *vice versa* » (*ibid.*, p. 82, ma traduction[y]). Mais la principale limite de cette réforme, ajoutait-il, était qu'elle ne pourrait empêcher le développement de « nouvelles formes de substituts monétaires » qui la rendraient caduque (*ibid.*, p. 83, ma traduction[z]). Il avait surtout en tête, semble-t-il, le développement de substituts à la monnaie en tant que réserve de valeur : "can we even to-day draw a sharp line between what is money and what is not? Are there not already all sorts of 'near-moneys' . . . which satisfy at any rate the demand for liquid reserves nearly as well as money?" (*ibid.*, p. 83). Sur ces questions, Hayek partageait en grande partie l'analyse de Simons, faisant de nombreuses fois référence à un article de celui-ci (Simons 1936)[70]. De manière quelque peu surprenante, par contre, à aucun moment Hayek ne semble avoir discuté des implications de la proposition 100% monnaie – qui obligerait l'investissement à être financé par une épargne préalable – pour sa propre théorie des cycles, justement basée sur l'excès de l'investissement

[69] Ils n'étaient pas d'accord entre eux cependant. Brown (1940) ne reconnaissait aucun mérite au plan 100%. Thomas (1940, p. 321, ma traduction) considérait que « le plan 100 pour cent n'offre que peu ou pas d'amélioration pour limiter l'expansion du crédit en période de boom […]. Son seul argument valide […] réside dans la possibilité qu'il offrirait un moyen d'éviter une contraction déflationniste du volume de monnaie durant les dépressions » ["the 100 per cent plan offers little or no improvement in limiting credit expansion in boom times . . . Its only valid claim . . . lies in the possibility that it will afford a means of avoiding deflationary shrinkage in the volume of money during depressions"]. Higgins (1941, pp. 93, 96, ma traduction) soutint, à l'inverse, que le plan 100% « ne [pouvait] pas stimuler l'expansion lors d'une dépression » mais qu'« il aider[ait] significativement à contrôler les booms » ["It cannot stimulate expansion in depression. . . [but] [i]t will aid materially in the control of booms"].

[x] "the most interesting suggestion on Banking Reform which has been advanced in recent years".

[y] "it would do away effectively with that most pernicious feature of our present system: namely that a movement towards more liquid types of money causes an actual decrease in the total supply of money and *vice versa*."

[z] "new forms of money substitutes".

[70] Phillips (1995, p. 91) fournit d'ailleurs plusieurs citations d'un échange de lettres entre Hayek et Simons datant de décembre 1934, illustrant la proximité de vue entre ces deux auteurs.

par rapport à l'épargne, causé par la création monétaire des banques[71]. Sur cette question, il se distançait visiblement de Mises (voir plus haut).

Les discussions académiques inclurent également des échanges entre Currie (1935) et Benjamin M. Anderson (1935a ; 1935b), économiste en chef de la *Chase National Bank*, ainsi qu'entre Fisher (1936d) et Fritz Lehmann (1936a ; 1936b) de la *New School for Social Research* ; un pamphlet de Walter E. Spahr (1938) de l'Université de New York[72] ; une étude détaillée de la proposition par Leonard L. Watkins (1938) de l'Université du Michigan ; des articles de George B. Robinson (1937) et Andrew M. Neuman (1937), ainsi que de nombreuses recensions des ouvrages de Currie et de Fisher[73]. À l'instar d'Hayek, un certain nombre d'économistes de l'époque commentèrent la proposition 100% monnaie au sein d'ouvrages divers[74].

L'attention accordée par les économistes à la proposition 100% monnaie, cependant, allait être de relativement courte durée. Comme le note Dimand (1993b, pp. 72-73) :

> Above all, the attention of the economics profession was diverted by two events: the publication of Keynes's 'General Theory' . . . and the outbreak of the Second World

---

[71] Cette connexion sera pourtant soulignée par Higgins (1941, p. 91), par exemple : "it is my opinion that the chief argument in favor of the 100 per cent plan rests upon the monetary theory of the trade cycle, and that the peculiar feature of the scheme is that it appears to provide an automatic check to investment in excess of voluntary savings", ajoutant qu'il avait à l'esprit "the sort of theory that traces depression to over-expansion of credit in the boom, with accompanying over-investment and distortion of the capital structure. Perhaps the best known presentations of this theory are by Hayek . . . and Robbins".

[72] Spahr condamnait surtout le fait que la proposition 100% monnaie s'affranchirait de l'étalon-or. Notons à cet égard qu'une proposition de 100% de réserves en or fut formulée, en 1934, par Elgin Groseclose (1934, p. 273) (voir Rothbard 1962a, p. 130).

[73] Une grande partie des réactions critiques que suscita l'ouvrage de Fisher *100% Money* a été rassemblée dans Dimand (ed.) 2007, Vol. 3.

[74] Alvin H. Hansen (1938, pp. 113-16), de l'Université d'Harvard, considérait le plan 100% monnaie comme découlant de l'idéal d'une « monnaie neutre », qu'il réprouvait. Il rejetait en particulier les versions du plan couplées à la préconisation d'une masse monétaire fixe ou automatiquement régulée – telles que formulées par Simons et Angell notamment – qui conduiraient selon lui à « placer la communauté dans une camisole de force monétaire » (*ibid.*, pp. 115-16, ma traduction ["would place the community in a monetary strait jacket"]). L'économiste autrichien Fritz Machlup, dans un ouvrage paru en 1931, avait expliqué qu'il faudrait soumettre les dépôts à vue à une réserve marginale de 100% pour empêcher toute expansion inflationniste de crédit bancaire. Il précisa cependant, dans la traduction anglaise de cet ouvrage, que cela ne faisait pas de lui un partisan de la réforme 100% monnaie, qu'il jugeait, pour différentes raisons, radicale et impraticable (Machlup [1931] 1940, p. 240n6). Willford I. King, de l'Université de New York, jugeait au contraire que les inconvénients liés à la mise en place du plan 100% étaient « un très faible prix à payer » en comparaison des avantages qu'il offrait (King [1938] 1941, pp. 293-94, ma traduction ["a very small price to pay"]). Notons également qu'en Allemagne, une réforme 100% monnaie sera préconisée dans un ouvrage de Friedrich Lutz (1936, p. 31) de l'Université de Fribourg (voir Bernholz 1989, p. 200).

> War . . . Insulation of the medium of exchange from the risks and fluctuations inherent in financial intermediation vanished from the economics literature. . .

Allen (1993, p. 716) partage cette observation : “At the time, what most caught the fancy of politicians and professors was not seemingly arcane monetary analyses and banking proposals but the income analyses and fiscal proposals associated mainly with J. M. Keynes”. Les débats sur la proposition 100% monnaie ne furent donc pas poursuivis à l’époque[75].

Que peut-on conclure de ces débats ? D’une manière générale, parmi les opinions exprimées au sein de journaux académiques, il semble qu’une large minorité était franchement enthousiaste à l’idée du plan, qu’une autre minorité, sûrement moins large, y était farouchement opposée, tandis qu’un large groupe était partagé entre intérêt et scepticisme[76]. Une grande partie des commentateurs, tout en reconnaissant des mérites au plan, s’interrogeait sur les possibilités de sa mise en pratique. La question de la manière de rémunérer le service de conservation et de transfert des dépôts de transaction, par exemple, revenait régulièrement dans les discussions. Surtout, les débats révélaient un besoin de clarification sur un grand nombre de sujets. Il y avait, bien entendu, des désaccords sur la manière de définir la monnaie, et sur le type d’actifs à inclure ou non dans la masse monétaire. Ces désaccords n’étaient cependant pas toujours clairement identifiés, ce qui induisait une certaine confusion dans les discussions, au sujet du risque de voir émerger des substituts monétaires notamment[77]. Il y avait aussi de nombreuses ambiguïtés quant aux implications de la réforme 100% pour la sphère bancaire : il n’était pas clair, par exemple, si l’objet du plan était (ou devait être) de mettre fin au principe des réserves fractionnaires en général (empêchant de fait toute activité de prêt à partir de dépôts) ou seulement à l’application de ce principe pour les dépôts transférables par chèque[78]. Par ailleurs, beaucoup d’auteurs faisaient valoir que le maintien de réserves fractionnaires derrière les dépôts d’épargne (non couverts par la réforme 100%), amplifiant les mouvements de thésaurisation ou de déthésaurisation de la monnaie, demeurerait une source de risque déflationniste ou

[75] Même si celle-ci fut encore occasionnellement commentée : voir par exemple Reeve (1943, pp. 317-25) ou Hart (1948, pp. 447-49).

[76] Nous n’allons pas cependant jusqu’à partager l’avis de Phillips, selon qui « les discussions étaient pour la plus grande part sympathiques à l’égard du plan » (1995, p. 151, ma traduction [“the discussions were for the most part sympathetic to the plan”]).

[77] En effet, la question des substituts à la monnaie en tant que moyen de paiement ne doit pas être confondue avec celle des substituts à la monnaie en tant que réserve de valeur. Cette distinction, que nous abordons dans le chapitre 3, n’apparaissait que trop rarement dans les débats.

[78] Comme nous le verrons au chapitre 3, la réponse à cette question variait en fait selon la version du plan que l’on prenait en considération. Les « auteurs 100% » eux-mêmes étaient responsables d’une confusion certaine sur ce point.

inflationniste. Ils en concluaient, pour cette raison, que l'imposition de 100% de réserves derrière les seuls dépôts transférables serait insuffisante pour prévenir (ou même atténuer) les booms et dépressions. Cela revenait à poser la question de savoir si, dans l'équation des échanges, *V* pourrait être soumis à d'importantes fluctuations tandis que *M* resterait stable – mais la question était rarement posée en ces termes, ce qui aurait pourtant facilité les discussions. Il y avait également, parfois, une certaine ambiguïté quant aux objectifs principaux du plan, comme révélé par la réponse de Fisher à Hawtrey mentionnée précédemment. Beaucoup de ces questions sont restées non clarifiées, ce qui, comme nous l'avons vu, constitue l'une des principales motivations de la présente thèse.

3. La proposition 100% monnaie de la Seconde Guerre mondiale à la fin du XXe siècle

Bien que les débats académiques sur le plan 100% monnaie se soient largement estompés avec la Seconde Guerre mondiale, la proposition continua cependant d'être soutenue par une minorité d'économistes. Maurice Allais (1911-2010), professeur à l'École des Mines de Paris et futur « Prix Nobel » d'Économie en 1988, allait préconiser cette idée de manière récurrente dans ses écrits, de 1946 jusqu'à la fin de sa carrière[79]. Dans son ouvrage *Économie et Intérêt* (Allais 1947)[80] – qu'il dédia à Irving Fisher –, il développait une théorie des cycles économiques basée sur deux causes essentielles : « la possibilité pour les banques d'émettre de la monnaie scripturale à découvert et la possibilité pour les agents économiques de thésauriser la monnaie » (Allais 1947, p. 365). Comme les auteurs des années 1930, il insistait sur le fait que, dans un système de création monétaire par les banques, il existait « une double liaison de cause à effet entre les dépôts et le volume des effets escomptés » qui aboutissait « à leur détermination réciproque », source d'enchaînements cumulatifs (*ibid.*, p. 279). Contrairement à ces auteurs, il mettait en avant dans ses explications la distinction entre le taux d'intérêt pur sur le marché financier (i_F) et celui sur le marché monétaire (i_M), et prenait comme hypothèse de déclenchement du cycle l'apparition d'une disparité entre ces deux taux (i_F - i_M), source d'une hausse de l'investissement, des dépenses et du niveau des prix (*ibid.*, pp. 359-60). Mais son explication du développement du cycle, une fois cette cause initiale enclenchée, était la même que chez ses prédécesseurs : toute hausse du niveau des prix allait entraîner une hausse des prêts bancaires, synonyme d'une hausse des dépôts et donc du

[79] Voir par exemple Allais (1947 ; 1967a ; 1967b ; 1975 ; [1977] 1989 ; 1987 ; 1999).

[80] L'essentiel de cet ouvrage avait initialement été publié dans les numéros de mars à novembre 1946 des *Annales des Mines et des Carburants* (selon Allais 1947, p. 3n1).

volume de monnaie, entraînant à son tour une nouvelle hausse des prix, et ainsi de suite, tandis que la remise en circulation des espèces thésaurisées aggravait le processus (*ibid.*, p. 360). Ainsi, notait Allais (*ibid.*, p. 361), « la disparité initiale (i_F - i_M) loin de diminuer ne fait que croître », jusqu'à ce que le boom s'arrête et que s'amorce la dépression. Soulignant ensuite les limites de la politique de réescompte dans de telles conditions (*ibid.* pp. 402-04), il concluait (*ibid.*, p. 404) :

> La véritable solution serait, à notre avis, l'interdiction absolue de l'émission de monnaie scripturale à découvert par les banques, le 100% Money déjà préconisé par I. Fisher. Une telle politique, si elle était appliquée, n'empêcherait en aucune façon l'escompte des effets de commerce et de crédit, mais ces opérations seraient faites avec des capitaux remis aux banques, soit par leurs actionnaires, soit par leurs prêteurs, à ces fins.

Une particularité de la proposition soutenue par Allais, telle qu'il allait notamment la développer dans ses écrits ultérieurs, était d'ajouter, à l'imposition de 100% de réserves derrière les comptes courants, une interdiction pour les banques de prêt de pratiquer la transformation des maturités : « Les banques de prêts assureraient comme aujourd'hui le négoce des promesses de payer, mais la règle de leur gestion […] serait que tout prêt d'un terme donné devrait être financé à partir d'un emprunt de terme au moins aussi long » (Allais 1975, p. 139). Il insistait aussi sur le fait qu'une réforme 100% monnaie permettrait « de faire bénéficier l'ensemble des citoyens des avantages correspondant à la création de monnaie, au lieu de dispenser ces avantages à une minorité seulement » (Allais 1967a, p. 24).

Peu de temps après Allais, un autre futur « Prix Nobel » d'Économie, Milton Friedman (1912-2006) de l'Université de Chicago, allait lui aussi soutenir la proposition 100% monnaie, dès 1948 et à de multiples reprises durant sa carrière[81]. S'inscrivant dans la filiation de Simons et Mints[82], Friedman reprenait à son compte le Plan de Chicago initial, à un détail

---

[81] Friedman soutiendra notamment la proposition 100% monnaie dans des articles de 1948 et 1951 (Friedman 1948, p. 47 ; 1951, pp. 211-13), ainsi que dans une conférence donnée dans le cadre des *Millar Lectures* de l'Université de Fordham en 1959, dont le contenu sera publié dans *A Program for Monetary Stability* ([1960] 1992, voir pp. 65-76). Il soutenait toujours cette idée dans une nouvelle préface à la dixième impression de cet ouvrage, rédigée en 1992 : "Had it been adopted, the savings and loan crisis and the crisis threatening the FDIC could not have arisen. Unfortunately, the proposal was completely neglected for decades. More recently, it has been revived under a new name, narrow banking . . . I very much fear that the revived version is no more likely to be adopted than the earlier" (Friedman [1960] 1992, p. x). Il exprima son soutien au plan 100% à diverses autres reprises (voir par exemple Friedman 1967, pp. 3-4 ; 1976, pp. 2156-57).

[82] "As a student of Henry Simons and Lloyd Mints, I am naturally inclined to take the fractional reserve character of our commercial banking system as the focal point in a discussion of banking reform. I shall follow them also in recommending that the present system be replaced by one in which 100% reserves are required" (Friedman [1960] 1992, p. 65).

technique près : “I shall urge that interest be paid on the 100% reserves. This step will . . . render the system less subject to the difficulties of avoidance that were the bug-a-boo of the earlier proposals” (Friedman [1960] 1992, p. 66). Il attribuait deux défauts principaux au système existant :

> Our present fractional reserve banking system has two major defects. First, it involves extensive governmental intervention into lending and investing activities that should preferably be left to the market. Second, decisions by holders of money about the form in which they want to hold money and by banks about the structure of their assets tend to affect the amount available to be held. This has often been referred to as the “inherent instability” of a fractional reserve system. (Friedman [1960] 1992, p. 66 ; voir aussi Friedman 1951, p. 212)

Ces deux défauts avaient été pointés du doigt par les auteurs des années 1930. Mais concernant l’« instabilité inhérente » du système à réserves fractionnaires, la critique de Friedman était d’une portée beaucoup plus limitée que celle de ses prédécesseurs. Friedman n’attribuait qu’une seule cause d’instabilité à ce système : celle liée au fait que les choix des agents quant à la *forme* de détention de leur encaisse monétaire entraînerait des changements non souhaités dans le volume total de monnaie[83]. Les auteurs des années 1930, tout en soulignant ce point, allaient bien au-delà : la principale cause d’instabilité du système existant, selon eux, était qu’il donnait lieu à des *interactions cumulatives* entre niveau des prix (et des profits), volume des prêts bancaires, et circulation monétaire[84]. C’est avant tout pour mettre fin à ces enchaînements cumulatifs qu’ils réclamaient que la création de monnaie soit séparée des prêts de monnaie. Or, on ne trouve aucune trace d’un tel argument chez Friedman[85]. Si l’instabilité du système pouvait s’expliquer par les seules différences de ratios de réserve

[83] “[A] decision by a holder of money to convert deposits into currency tends to produce a decline in the total stock of money; a decision to convert currency into deposits, a rise. . . The same problem arises with respect to shifts among categories of deposits having different reserve requirements . . . Similarly, a change on the part of banks in the fraction of their assets they wish to hold in the form of high-powered money affects the number of dollars of deposit money per dollar of high-powered money and so alters the total stock of money. These effects on the amount of money are unintended and incidental to the aims of the holders of money or the individual banker” (Friedman [1960] 1992, p. 67 ; voir aussi 1951, p. 212).

[84] C’est ce que nous appelons le « triangle dette-monnaie-prix » dans le chapitre 4. Voir également à ce sujet le chapitre 3, section 4.

[85] Friedman (1967), discutant de la théorie des cycles de Simons, était notamment en désaccord avec ce dernier sur l’idée de vouloir simplifier et restreindre la gamme des instruments financiers (Friedman 1967, p. 4), ainsi que sur le rôle attribué aux variations de *V* par rapport à celles de *M* (*ibid.*, p. 12). Sur ces deux points, il aurait sûrement été davantage en accord avec Fisher. Cependant, comme nous le remarquons au chapitre 3 (section 4), il ne reprit pas plus à son compte la théorie des cycles de Fisher que celle de Simons. En matière de politique monétaire, Friedman (*ibid.*, pp. 3, 13) reprochait également à Simons d’avoir abandonné ses préconisations initiales d’une règle définie en termes de quantité de monnaie, au profit d’une règle définie en termes d’un indice de prix.

s'appliquant aux diverses formes de monnaie, alors une solution alternative, radicalement opposée au 100% monnaie, pouvait également être envisagée – celle de permettre aux banques d'émettre tout aussi bien des billets que des dépôts :

> To keep changes in the form in which the public holds its cash balances from affecting the amount there is to be held, the conditions of issue must be made the same for currency and deposits. This can be done by assimilating either the conditions for issuing currency to those that now prevail for deposits, or, conversely, the conditions for issuing deposits to those that now prevail for currency. The first solution would involve permitting banks to issue currency as well as deposits subject to the same fractional reserve requirements . . . The alternative, which seems far preferable, is to assimilate the issue of deposits to that of currency. . . . that is, to have 100% reserves. (Friedman [1960] 1992, pp. 68-89 ; voir aussi 1951, p. 213)

De plus, si le problème de l'« instabilité inhérente » du système à réserves fractionnaires pouvait être jugé secondaire par rapport au premier problème – celui de l'intrusion de l'État dans la sphère financière –, alors une troisième solution devenait également envisageable :

> An alternative way to eliminate governmental intervention that Gary Becker has persuaded me has merit is to move in the opposite direction, to keep currency issue as a governmental monopoly, but to permit "free" deposit banking, without any requirements about reserves. . . Such a system . . . would not, however, solve the problem of "inherent instability". (Friedman [1960] 1992, p. 108n10)

Cette dernière idée, tout autant radicalement opposée au principe du 100% monnaie, allait être occasionnellement soutenue par Friedman par la suite[86]. Interrogé sur l'existence d'une possible contradiction à ce sujet, il répondra :

> [L]et me clear up my position on one-hundred reserves and zero percent reserves. . . . In my opinion, either extreme is acceptable. I have not given up advocacy of one-hundred percent reserves. I would prefer one-hundred percent reserves to the alternative I set forth. However, I believe that getting the government out of the business altogether or zero percent reserves also makes sense. The virtue of either one is that it eliminates government meddling in the lending and investing activities of the financial markets. . . . (Friedman, lettre à John Hotson en date du 3 février 1986, citée par Phillips 1995, p. 174)

En tout état de cause, il est évident que la préconisation de la réforme 100% monnaie par Friedman constitue un cas très particulier dans l'histoire du plan, et ne saurait être considérée comme représentative de l'argumentation générale en sa faveur.

---

[86] Voir par exemple Friedman (1985, p. 10), qui préconisait tout à la fois l'autorisation d'émission de billets par les banques et la suppression de toute contrainte de réserves : "first, freeze high-powered money; then, after a period, eliminate reserve requirements and other remaining regulations, including the prohibition on the issuance of hand-to-hand currency by private institutions." Il précisait dans le même article : "I approve of Professor Hayek's proposal to remove restrictions on the issuance of private moneys to compete with government moneys" (*ibid.*, p. 9 ; voir également Friedman 1984, pp. 43, 46).

La proposition 100% monnaie continuera d'être occasionnellement débattue. Elle figura par exemple parmi les idées de réforme étudiées lors d'une série de conférences organisées au *Thomas Jefferson Center for Studies in Political Economy* de l'Université de Virginie en 1960, dont les contributions allaient être regroupées dans l'ouvrage *In Search of a Monetary Constitution* édité par Leland B. Yeager (1962a). George S. Tolley, un économiste agricole du *North Carolina State College*, réexamina à cette occasion la proposition 100% monnaie. Il listait quatre avantages attribués au plan : celui de réduire le risque de faillites bancaires, celui d'éviter que les décisions des agents quant à la proportion de leurs encaisses détenues sous forme d'espèces ne changeassent le volume total de monnaie[87], celui de rendre plus direct le contrôle de la masse monétaire, et celui de permettre une réduction de la dette publique (Tolley 1962 pp. 278-79). Tout comme chez Friedman, cependant, l'argument central des auteurs des années 1930 – celui de mettre fin aux interactions cumulatives entre prêts, monnaie et prix – était perdu de vue. Tolley défendait néanmoins le bien-fondé de cette proposition, et ajoutait une suggestion : celle d'inscrire l'ensemble des dépôts transférables directement sur les comptes de la banque centrale, afin de supprimer la distinction entre *réserves* et *dépôts couverts à 100% par des réserves*[88].

Au sein de la même série de conférences, Murray N. Rothbard, économiste de tradition autrichienne, défendit quant à lui la proposition d'un « dollar 100% or » (Rothbard 1962a, p. 94, ma traduction ["a 100 per cent gold dollar"]). Il considérait le système à réserves fractionnaires comme étant non seulement source d'instabilité économique, mais également condamnable d'un point de vue légal et moral : toute émission de promesses de payer à vue non couvertes par 100% de réserves équivalait, selon lui, à de la « contrefaçon légalisée » (Rothbard 1962a, p. 114, ma traduction ["legalized counterfeiting"]). Sa proposition d'une réserve entièrement métallique, contrairement aux plans des années 1930, visait à exclure

[87] Tolley (1962, p. 279) semblait considérer qu'il s'agissait là de la seule source d'instabilité cyclique : "with deposit insurance there would be little reason for cyclical shifts between deposits and paper money". Fisher (1937b, p. 296), dans sa réponse à Hawtrey, avait pourtant insisté sur le fait que *même avec la suppression du risque de ruées* permise par l'assurance des dépôts, la dépendance de la monnaie envers les prêts resterait source d'instabilité : "Even without such withdrawals or deposits of cash, the total volume of deposits is subject to great fluctuations owing to the fluctuations in loans and investments".

[88] "Let the deposit liabilities of the commercial banks be transferred to the Federal Reserve banks. If 'reserves' are defined in the usual way, as Federal Reserve liabilities connected with deposit money, there would be 100 per cent reserves in the sense that deposit money and reserves would be identical. The physical arrangements in the use of money could be continued as at present, located in the commercial banks with servicing expenses paid for on a contract basis by the Federal Reserve banks" (Tolley 1962, pp. 299-300).

définitivement toute intervention de l'État dans le système monétaire[89]. Ce type de réforme continuera d'être soutenu à la fois par Rothbard et par d'autres économistes s'inscrivant dans la même tradition[90].

Dans les années 1970-80, l'idée d'un coefficient de réserves de 100% sera occasionnellement évoquée dans le cadre de réflexions sur l'amélioration du contrôle monétaire (voir, par exemple, Poole 1976 ; Kaminow 1977 ; Sherman *et al.* 1979 ; Baltensperger 1982). Baltensperger (1982, p. 205) résume ainsi ces travaux : "In all of these studies, the focus is almost exclusively on money stock control. Generally speaking, their results support the 100 percent reserves idea, though such a scheme is usually seen as infeasible for political or institutional reasons, leading to recommendations to set requirements as high as possible against deposits included in the money stock, subject to whatever constraints of this nature are perceived." On y retrouve également, parfois encore, l'idée que le développement de substituts monétaires serait fatal à une réforme 100% monnaie[91].

Peu de temps après, dans le contexte de la déréglementation financière des années 1980 aux États-Unis, une autre idée de réforme présentant certaines similarités avec la proposition 100% monnaie allait faire sa réapparition : celle du *narrow banking* (« banque étroite »), visant à compartimenter les banques et à imposer que les éléments de leur passif servant de moyens de paiement soient intégralement couverts par des actifs sûrs[92]. Une telle réforme fut préconisée, par exemple, par Henry Wallich de l'Université de Yale (1984 ; il était alors membre du *Federal Reserve Board*), James Tobin, également de Yale et futur « Prix Nobel » d'Économie (1985 ; 1987a ; 1987b, p. 3484), John H. Kareken de l'Université du Minnesota (1986) ou Robert E. Litan de la *Brookings Institution* (1987)[93]. L'objectif principal du *narrow*

---

[89] Il insistait sur cette importante différence : "I advocate 100 per cent reserves in gold or silver, in contrast to the 100 percent fiat paper standard of the Chicago School. One-hundred per cent gold, rather than making the monetary system more readily manageable by government, would completely expunge government intervention from the monetary system" (Rothbard 1962a, p. 114n19).

[90] Les principaux travaux de Rothbard sur le sujet, ainsi que ceux d'autres auteurs partageant la même idée de réforme (tels que Hans-Hermann Hoppe, Joseph T. Salerno, Walter Block ou Mark Skousen) sont référencés par Jesús Huerta de Soto ([1998] 2012, p. 728n15), qui lui-même préconise un système de 100% de réserves en or (*ibid.*, p. 739).

[91] Ainsi, selon Poole (1976, p. 137), "banks or bank-like firms would likely be successful in inventing deposit-like liabilities that would effectively destroy a 100 percent required reserves system".

[92] Si l'appellation *narrow banking* était nouvelle, l'idée ne l'était pas. On la trouve notamment exprimée chez certains auteurs écrivant dans les années 1930, par exemple Ernst Wagemann (1932, pp. 26-27) de l'Institut allemand de la Recherche économique.

[93] Phillips (1995, pp. 175-80) discute de cette proposition et mentionne d'autres contributeurs.

banking était de sécuriser le système de paiement, dans un contexte où le principe de l'assurance des dépôts était de plus en plus remis en question. Occasionnellement, il était mentionné qu'une telle réforme aiderait au contrôle de la masse monétaire (voir par exemple Tobin 1985, p. 19). Mais on ne trouve aucune trace chez ces auteurs de l'argument central du 100% monnaie : celui de mettre fin, en coupant le lien entre monnaie et prêts, au comportement procyclique de la masse monétaire. Le *narrow banking* ne vise d'ailleurs pas spécifiquement à divorcer la monnaie des prêts, mais plutôt à mettre la monnaie à l'abri des prêts *risqués*. Il est parfois mentionné que les dépôts servant de moyens de paiement seraient soumis à « 100% de réserves » (Kareken 1986, pp. 39-40) ; mais il s'agit alors de réserves en *actifs sûrs*, typiquement des bons du Trésor, et non nécessairement de réserves en monnaie centrale[94]. Il ne serait donc pas mis fin à la création ou destruction de moyens de paiement par les banques.

Dans les années 1990, la proposition 100% monnaie réapparaîtra sous une plume quelque peu inattendue : celle d'Hyman P. Minsky (1919-1996), alors chercheur au *Jerome Levy Economics Institute* du *Bard College*, où Phillips conduisait ses recherches sur l'histoire du Plan de Chicago. Ancien élève de Simons, Minsky avait toujours reconnu l'influence de ce dernier – couplée à celles de Keynes et Fisher – sur sa propre théorie de l'instabilité financière[95]. Pourtant, comme le note Phillips (1995 pp. 171, 208), Minsky n'allait pas jusqu'à suivre Simons et Fisher dans leur préconisation de 100% de réserves, prônant d'autres types de réformes à la place (basées notamment sur la fenêtre d'escompte et la mise en place de ratios de fonds propres). Dans l'avant-propos (daté de juin 1994) qu'il rédigea pour l'ouvrage de Phillips, Minsky (in Phillips 1995, pp. xi-xiv) marquait un intérêt pour la proposition, sans la soutenir pour autant. Il allait cependant franchir le pas peu de temps après, dans une série de *working papers* consacrés au besoin de réforme du système bancaire (voir notamment Minsky 1994, pp. 18-21 ; 1995, pp. 10-13), déclarant par exemple :

---

[94] Tobin (1985, p. 25) propose bien de mettre en place un type de dépôts qui seraient apparemment couverts par 100% de réserves en monnaie centrale uniquement (qu'il appelle *deposited currency*), mais de tels dépôts ne seraient pas les seuls à servir de moyens de paiement : d'autres types de fonds compartimentés, investis dans des bons du Trésor notamment, pourraient également remplir cette fonction (*ibid.*, pp. 27-28). On retrouve cependant chez Tobin l'idée qu'« il nous faut […] maintenir le pouvoir souverain et la responsabilité du gouvernement fédéral, d'après la Constitution, de 'frapper la monnaie et d'en réguler la valeur' » (Tobin 1987a, p. 168, ma traduction ["We need to . . . maintain the sovereign power and responsibility of the federal government, under the Constitution, to 'coin money and regulate the value thereof'"]).

[95] "The fundamentals of a theory of financial instability can be derived from Keynes's *General Theory*, Irving Fisher's description of a debt deflation, and the writings of Henry Simons" (Minsky 1986, p. 192 ; voir aussi p. 10n7). Sur la connexion Minsky-Simons, voir notamment Whalen (1994) et Toporowski (2010).

> Thus, as the 21st century is about to be ushered in, an idea which was on the table during the 1930's discussion of reform can once again be on the table. One virtue of the 100% money scheme is that it separates the two functions that the monetary and banking system has to perform: the provision of a safe and secure means of payments, and the capital development of the economy. (Minsky 1994, pp. 20-21)[96]

À l'inverse des partisans du *narrow banking* susmentionnés, Minsky se référait explicitement aux écrits de Fisher et Simons. Tout comme eux, cependant, il semblait soutenir ce type de réforme avec le seul objectif de sécuriser le système de paiement, et, sûrement pour cette raison, avait également tendance à proposer que les dépôts transférables soient couverts par 100% de réserves en monnaie centrale *ou en titres de dette publique* (Minsky 1995, pp. 8-11) – ce qui, bien que protégeant la masse monétaire des risques de faillites bancaires, n'éliminerait pas toute possibilité de fluctuation du volume de monnaie liée aux prêts et investissements.

La proposition 100% monnaie sera encore soutenue par divers auteurs dans la dernière partie du XXe siècle et au tout début du XXIe[97]. C'est essentiellement suite à la crise financière mondiale de 2008, cependant, qu'elle allait connaître un véritable regain d'intérêt.

4. Le regain d'intérêt pour la proposition 100% monnaie suite à la crise de 2008

Certains des acteurs participant au regain d'intérêt pour la proposition 100% monnaie suite à la crise de 2008 appelaient déjà à la mise en place d'une telle réforme à la fin du XXe siècle. En Angleterre, la *New Economics Foundation* (NEF), un think thank créé en 1986 par les chefs de file du mouvement *The Other Economic Summit* (TOES) – un contre-sommet alternatif au G7 – avait publié en 2000 un ouvrage appelant à une réforme du type 100% monnaie, co-écrit par Joseph Huber, professeur de Sociologie économique et environnementale à l'Université Martin Luther de Halle-Wittenberg en Allemagne, et James

[96] Jan Kregel, commentant la préconisation par Minsky d'une réforme 100% monnaie (ou *narrow banking*, sans établir de distinction entre ces deux concepts), affirmait que ce dernier avait « finalement abandonné son soutien » pour ce type de réforme (Kregel 2012, p. 7, ma traduction ["Minsky eventually gave up his support for narrow banking"]). Aucune trace d'un tel changement d'opinion n'apparaît pourtant dans les textes de Minsky. Contacté à ce sujet, Kregel nous a expliqué, par correspondance, que ce n'était pas tant que Minsky ait jamais explicitement renié cette idée de réforme, mais plutôt que l'évolution de sa pensée, des années 1980 aux années 1990, témoignait par elle-même d'un éloignement des propositions de *narrow banks*. Ronnie J. Phillips, également interrogé à ce sujet, nous a répondu qu'il ne pensait pas, pour sa part, que Minsky ait jamais vraiment changé d'avis sur la question, même s'il ne considérait certainement pas pour autant le 100% monnaie comme une panacée.

[97] Voir, par exemple, Pahlke (1970, selon Huber 1999, p. 31), Gocht (1975, idem), Chuilon (1981 ; 1987), Hotson (1987 ; 1994), Schemmann (1991), Huber (1998 ; 1999), Huber et Robertson (2000), Zarlenga (2002, pp. 671-74).

Robertson, écrivain britannique indépendant et cofondateur de la NEF (Huber et Robertson 2000). Huber (1998) avait déjà appelé à une telle réforme dans un ouvrage intitulé *Vollgeld* (littéralement « monnaie pleine » en allemand), qui, comme nous le verrons plus loin, donnera son nom à une initiative de réforme monétaire en Suisse une quinzaine d'années plus tard[98]. En juin 2010, le gouvernement britannique lançait une commission indépendante chargée d'étudier des pistes de réforme du secteur bancaire suite à la crise de 2007-08. S'appuyant sur l'ouvrage d'Huber et Robertson, une proposition appelant à instaurer un système de *"full-reserve banking"* fut conjointement adressée à cette commission par la NEF, l'association *Positive Money*[99] et Richard A. Werner, professeur de Finance internationale enseignant alors à l'Université de Southampton[100] (Dyson *et al*. 2011). Cette proposition allait être davantage détaillée dans un ouvrage publié en 2013 par deux membres de *Positive Money* (Jackson et Dyson 2013), introduit par un avant-propos d'Herman E. Daly qui y rappelait que l'idée était ancienne : "The main ideas go back to the leading economic thinkers of 50 to 75 years ago, including Irving Fisher, Frank Knight and Frederick Soddy" (*ibid.*, p. 11)[101]. En Islande, une proposition essentiellement similaire, inspirée des travaux d'Huber et Robertson (2000) et de Jackson et Dyson (2013), allait être préconisée dans un rapport commandé par le Premier ministre islandais (Sigurjónsson 2015, avec un avant-propos d'Adair Turner). En France également, la proposition 100% monnaie sera remise au goût du jour par divers auteurs, incluant Christian Gomez (2010), un économiste et banquier ancien élève de Maurice Allais –

[98] Voir Huber (1999) pour un résumé de cet ouvrage en anglais. Voir également Robertson (2012) et Huber (2017) pour des reformulations plus récentes de cette idée de réforme par ces auteurs.

[99] Créée en 2010, *Positive Money* est une association britannique ayant pour but d'éclairer les politiciens, les médias et le grand public sur le fonctionnement du système monétaire à réserves fractionnaires.

[100] Économiste de nationalité allemande, Werner est notamment connu pour avoir forgé l'expression *"quantitative easing"* en 1995, à l'époque où il travaillait sur l'économie japonaise.

[101] Cependant, à la fois Huber (1999, pp. 27-28), Huber et Robertson (2000, pp. 22-23) et Jackson et Dyson (2013, pp. 24-25), bien qu'incluant certaines références à la proposition 100% monnaie des années 1930, prétendent s'en démarquer significativement pour un motif bien résumé par Dittmer (2015, p. 9n2, italiques originales) : "Some present-day authors reject this design [of the old 100% reserve proposals] as 'backward-looking, actually conserving the obsolete reserve system' with its distinction between commercial bank money and central bank money, and propose instead a system in which deposit banks would only be agents of the central bank, managing people's accounts *held at the central bank* (Huber and Robertson, 2000: 23). Rather than a full-reserve system, this is labeled a 'plain money' or 'sovereign money' system, in which there is 'just one integrated quantity of money circulating among banks and non-banks alike' (Jackson, 2013)". Comme nous l'avons vu, une telle idée avait déjà été avancée par Tolley (1962, pp. 299-300). Et, comme l'ont fait remarquer Wolf (2014b) et Dittmer (2015, p. 9n2), cette distinction, bien qu'elle ait son importance, ne saurait constituer une différence fondamentale avec la proposition des années 1930 pour autant.

qui lui-même, rappelons-le, prônait encore cette idée de réforme à la fin des années 1990 (Allais 1999)[102].

De manière générale, l'ensemble de ces propositions sont soutenues au motif qu'elles sécuriseraient le système de paiement, mettraient fin au caractère procyclique de la création monétaire – et notamment à son rôle dans l'alimentation des bulles immobilières et financières[103] –, et rendraient à l'État le plein bénéfice du seigneuriage. Du point de vue de l'intermédiation financière, les propositions que nous venons de citer s'inscrivent plutôt dans la lignée du plan tel que proposé par Currie ou Fisher : seuls les dépôts de transaction seraient intégralement couverts par des réserves en monnaie légale (ou seraient remplacés par de la monnaie scripturale directement inscrite sur les comptes de la banque centrale), tandis que les banques pourraient toujours utiliser des dépôts d'épargne pour financer leurs prêts et investissements.

Des propositions se situant davantage dans l'approche du Plan de Chicago sur ce point ont également été mises sur la table. Laurence J. Kotlikoff (2010, pp. 123-54), économiste à l'Université de Boston, prône par exemple ce qu'il appelle le *limited purpose banking* : un système monétaire et financier dans lequel les moyens de paiement seraient couverts à 100% par des réserves en monnaie de base, tandis que le financement de l'économie serait assuré exclusivement par des fonds mutuels, faisant reposer l'intégralité des risques sur les détenteurs de parts[104]. Une proposition essentiellement similaire a été formulée par Adam J. Levitin (2016), professeur de droit à l'Université de Georgetown. John H. Cochrane (2014), chercheur à la *Hoover Institution* de l'Université de Stanford, préconise lui aussi une telle réforme, à ceci près que tous les placements à valeur fixe soumis à un risque de ruées (tels que les dépôts bancaires ou les *money market funds*) seraient intégralement investis non en monnaie de base, mais en bons du Trésor à court terme : on retrouve ici l'une des

[102] Voir également Gabriel Galand (2012), Gaël Giraud (2012) et André Grjebine (2015).

[103] Il s'agit là d'une différence de focus par rapport aux auteurs des années 1930, qui se concentraient essentiellement sur l'instabilité des prix de gros et de détail. Les auteurs plus récents insistent davantage sur l'instabilité des prix d'actifs immobiliers et financiers, arguant que la création monétaire s'effectue aujourd'hui pour une large part sur ces marchés. Pour une critique en ce sens du système existant, voir également Turner (2015, pp. 61-73).

[104] Notons cependant que la proposition de Kotlikoff (comme celle de Cochrane que nous mentionnons plus loin) n'est motivée que par des considérations de stabilité bancaire et financière, et non de stabilité monétaire. L'ordre des priorités est clairement inversé par rapport aux tenants traditionnels du 100% monnaie, comme en témoigne cette citation: "A by-product of 100 percent-reserved checking accounts is that the government would gain full control of the M1 money supply" (Kotlikoff 2010, p. 134). Kotlikoff (*ibid.*, p. 135) rejette d'ailleurs explicitement l'interprétation monétaire de la Grande Dépression telle qu'avancée par Friedman et Schwartz (1963).

caractéristiques de l'idée de *narrow banking*, qui est elle aussi remise en avant, par exemple par John Kay (2009).

En 2012, deux économistes du Fonds monétaire international, Jaromir Benes et Michael Kumhof, ont publié un rapport très remarqué, *The Chicago Plan Revisited*, dans lequel ils proposent de tester les hypothèses du « Plan de Chicago » (appellation par laquelle ils désignent le plan 100% monnaie en général) à l'aide d'un modèle DSGE (Benes et Kumhof [2012] 2013). Bien que riche en références historiques, leur papier est également riche en confusion[105]. Ils basent notamment leur simulation DSGE sur un système institutionnel très éloigné de ce que proposaient généralement les « auteurs 100% ». Du côté monétaire, les dépôts transférables seraient intégralement couverts par des réserves : on retrouve bien là le cœur du plan 100% monnaie. Mais du côté financier, les institutions de financement seraient exclusivement financées (outre leurs fonds propres) par des prêts octroyés par l'État ("full government funding of credit", *ibid.*, p. 30). Ils affirment (*ibid.*, p. 29) : "This option is considered in the government versions of the plan formulated by Means (1933) and Currie (1934[b]), and also in the academic proposal by Angell (1935)". Ils font là probablement référence au fait que Currie et Angell (parmi d'autres) aient préconisé que l'autorité monétaire prête aux banques les réserves requises pour amener le taux de couverture de leurs comptes courants à 100%. Mais un tel prêt (éventuellement non remboursable) n'aurait constitué qu'une mesure unique et transitoire, liée à la mise en place du nouveau système. En aucun cas il n'était question, pour les auteurs des années 1930, d'imaginer un système où l'État assurerait le financement des banques de prêt : l'un des arguments du plan était précisément, tout au contraire, d'offrir une alternative à l'intervention de l'État dans le secteur financier ! Le seul à avoir considéré une réforme se rapprochant de ce concept était le troisième auteur cité, Means, assistant de Tugwell au sein du Département d'Agriculture, dans un mémorandum interne de 1933 qui ne fut jamais publié (Means 1933, discuté par Phillips 1995, pp. 69-70). Les auteurs du FMI s'inspirent, par ailleurs, d'une préconisation propre à Simons (telle que celui-ci la développa dans ses écrits individuels à partir de 1934) : celle de considérablement réduire (voire d'éliminer) l'offre de prêts de court terme. Dans leur

[105] On peut y lire, par exemple, que Simons et Fisher « préconisaient davantage de contrôle étatique sur le processus de création de monnaie *via davantage de contrôle sur les prêts bancaires* » ["advocated more governmental control over the money creation process *via more control over bank lending*"], que tous deux « préconisaient une règle de croissance monétaire fixe » ["advocated a fixed money growth rule"], et qu'ils prônaient un système « limitant et régulant le financement par endettement privé (mais non le financement par fonds propres) » des institutions de prêts ["limiting and regulating private debt funding (but not equity funding)"] (Benes et Kumhof [2012] 2013, p. 32, italiques ajoutées, ma traduction). Toutes ces assertions sont fausses concernant Fisher, tandis que seule la dernière (et dans une moindre mesure la seconde) peut s'appliquer à Simons.

système, les institutions de prêt ne pourraient apparemment financer que des investissements productifs de long terme, ce qu'ils justifient ainsi :

> In another respect our proposal remains very close to Simons: . . . credit to households can in net aggregate terms be completely eliminated, as can short-term working capital credit to firms. This is because credit is no longer needed to create the economy's money supply, with both households and firms replacing debt-based private money with debt-free government-issued money. The only credit that remains is lending for productive investment purposes. (Benes and Kumhof [2012] 2013, p. 31)

Leur simulation DSGE, basée sur l'application de telles hypothèses à l'économie états-unienne, les mène à la conclusion que l'adoption du Plan de Chicago aurait d'importants effets positifs[106].

L'ensemble de ces propositions formulées suite à la crise de 2008, comme nous pouvons le constater, sont loin d'être homogènes : elles divergent parfois quant aux objectifs poursuivis, et souvent quant à leurs implications pour l'intermédiation financière. Ces différences n'étant généralement pas clairement distinguées par les auteurs eux-mêmes, il en résulte une certaine confusion inévitable, qui se retrouve dans nombre de discussions des idées de réforme en question[107]. La proposition 100% monnaie – souvent exagérément assimilée au « Plan de Chicago », ou désignée par l'appellation ambiguë de *"full-reserve banking"* – a en effet été discutée par un grand nombre de commentateurs de la crise mondiale de 2008. En Angleterre, à la fois Martin Wolf, éditeur en chef du *Financial Times*, Adair Turner, président de la *Financial Services Authority* de 2008 à 2013, et Mervyn King, gouverneur de la Banque d'Angleterre de 2003 à 2013, ont manifesté un intérêt marqué pour cette idée (voir notamment Wolf 2014a, pp. 209-13, 234-37, 348-51 ; Turner 2015, pp. 187-90 ; King 2016, pp. 261-68). On retrouve malheureusement dans leurs ouvrages une grande confusion – probablement causée en partie par le rapport du FMI, auquel chacun d'entre eux se réfère – sur les

[106] "The Chicago Plan could significantly reduce business cycle volatility caused by rapid changes in banks' attitudes towards credit risk, it would eliminate bank runs, and it would lead to an instantaneous and large reduction in the levels of both government and private debt. It would accomplish the latter by making government-issued money, which represents equity in the commonwealth rather than debt, the central liquid asset of the economy . . . One additional advantage is large steady state output gains due to the removal or reduction of multiple distortions, including interest rate risk spreads, distortionary taxes, and costly monitoring of macroeconomically unnecessary credit risks. Another advantage is the ability to drive steady state inflation to zero in an environment where liquidity traps do not exist . . ." (Benes and Kumhof [2012] 2013, p. 68).

[107] Une tentative de distinction conceptuelle entre ces différents types de plan a été réalisée par Patrizio Lainà (2015) de l'Université d'Helsinki, qui offre un compte-rendu historique de l'ensemble des propositions 100% monnaie (ou autres propositions y ressemblant) « depuis David Ricardo jusqu'à Martin Wolf » ["from David Ricardo to Martin Wolf"]. Sa classification n'est cependant pas irréprochable : il range par exemple Irving Fisher parmi les auteurs préconisant que les banques ne puissent plus prêter à partir de leurs dépôts (Lainà 2015, p. 3).

conséquences du plan pour la sphère financière : le 100% monnaie est considéré comme interdisant nécessairement toute activité de prêts à partir des dépôts bancaires. Wolf (2014a, p. 210) se demande ainsi : “If reserves backed deposits 100 per cent, what would finance lending to the economy?” King (2016, p. 262) pose la même question : “So far, so good. But who would perform the many functions that banks carry out today, especially lending to businesses and households, so enabling them to build factories and purchase homes?” Quant à Turner (2015, p. 187), il résume le 100% monnaie par le slogan “Abolishing banks”[108]. Il n’est donc guère surprenant que Turner et King, bien qu’intéressés, émettent de grandes réserves sur cette idée de réforme[109], même si Wolf (2014a, p. 237, voir aussi p. 350) trouve pour sa part qu’il serait « fascinant » [“fascinating”] qu’elle puisse être expérimentée. Cette volonté d’expérimenter le 100% monnaie a justement conduit, en Suisse, à une initiative populaire intitulée « Pour une monnaie à l’abri des crises : émission monétaire uniquement par la Banque nationale ! (Initiative Monnaie pleine) » (en allemand *Vollgeld Initiative*), lancée en 2014 par Modernisation monétaire (MoMo), une association appuyée d’un conseil scientifique composé d’une vingtaine de personnalités[110]. Cette initiative a débouché sur un référendum organisé le 10 juin 2018 lors duquel, sans surprise, le « non » l’a emporté à 75,7%. L’adoption d’une réforme 100% monnaie continue néanmoins d’être réclamée par plusieurs associations dans un grand nombre de pays.

La proposition 100% monnaie suscite également un regain d’intérêt au sein des journaux académiques. Dans le *Journal of Economic Behavior & Organization*, Carl Chiarella *et al.*[111] (2012, p. 410, ma traduction) ont étudié l’idée de coupler « un ratio de 100 pour cent de réserve fisherien pour les dépôts transférables » avec « l’interdiction pour les banques

---

[108] Dow *et al.* (2015, p. 17) considèrent également que cette proposition reviendrait à « éliminer l’activité bancaire » (“eliminate banking”).

[109] On trouve également, dans leurs commentaires, l’idée que le 100% monnaie serait dirigé contre les banques. King (2016, p. 262) observe ainsi, au sujet des « auteurs 100% » : “Interestingly, John Maynard Keynes was not part of this group”, ajoutant : “Keynes was nevertheless scathing about bankers” (*ibid.*, p. 262n15). Mais les auteurs du 100% monnaie, bien que dénonçant la dépendance du système monétaire envers l’activité bancaire, étaient loin de tenir un discours « anti-banquiers » pour autant. Fisher (1936e) affirmait par exemple : “I would be the last to question these good intentions [of the bankers]. . . . Individually they are above the average citizen in integrity . . . [I]t is the banking system as a whole which is at fault”. Ce type de discernement, que l’on trouve déjà chez Carroll ([1858a] 1964, p. 94), était commun chez ces auteurs.

[110] On trouve parmi celles-ci Joseph Huber, Christian Gomez, Josh Ryan-Collins (NEF), Sergio Rossi (Université de Fribourg) ou encore Steve Keen (Kingston University). Voir notamment Huber (2014) pour une description argumentée de la réforme Monnaie pleine.

[111] Carl Chiarella de l’Université de Technologie de Sydney (Australie), Peter Flaschel de l’Université de Bielefeld (Allemagne), Florian Hartmann de l’Université d’Osnabrück (Allemagne), et Christian R. Proaño de la *New School for Social Research* (USA).

commerciales d'acheter ou vendre des actions et autres actifs financiers »[112], tandis que Robert E. Krainer (2013) de l'Université du Wisconsin a pour sa part préconisé de combiner la proposition 100% monnaie de Milton Friedman avec l'instauration de contrôles sélectifs du crédit sur divers marchés. Dans le *Journal of Monetary Economics*, V.V. Chari et Christopher Phelan (2014, p. 1), de l'Université du Minnesota et de la *Federal Reserve Bank* de Minneapolis, ont argué qu'en raison des ruées bancaires, les coûts du système à réserves fractionnaires excédaient ses bénéfices, et qu'un ratio de 100% de réserves serait optimal. Ed Nosal (2014), de la *Federal Reserve Bank* de Chicago, leur a adressé un commentaire critique dans le même journal. Au sein du *Cambridge Journal of Economics*, la proposition 100% monnaie a été l'objet d'un débat opposant les membres de l'association *Positive Money* (Dyson *et al*. 2016) à plusieurs économistes post-keynésiens (Fontana et Sawyer 2016 ; 2017 ; Nersisyan et Wray 2016 ; 2017), tandis que Lainà (2019) y a récemment fait part de ses résultats de recherche. Le *Journal of Economic Issues* a également publié un article critique de la proposition (von der Becke et Sornette 2017). Même le journal *Ecological Economics* a consacré un article au sujet, Kristofer Dittmer (2015), de l'Université autonome de Barcelone, y critiquant les arguments environnementaux avancés en faveur du plan 100% par Daly et Farley ([2003] 2010, pp. 285-98) notamment. Dans le *Cato Journal*, James M. Buchanan (2010a, p. 255), de l'Université George Mason, a appellé à mettre fin à la création ou destruction de monnaie par les banques, devenant ainsi le quatrième « Prix Nobel » d'Économie à soutenir cette proposition[113]. Dans le journal *Economic Thought*, enfin, l'article de Lainà (2015) – dont nous avons déjà parlé – a été suivi d'un commentaire critique par Meinhard A. Jensen de l'Université de Copenhague et Charles A. E. Goodhart de la London School of Economics, qui voient dans le regain d'intérêt pour le 100% monnaie une résurgence des idées de la *Currency School* (Goodhart et Jensen 2015). Il ne fait guère de doute que la proposition n'a pas finie d'être débattue.

[112] "We . . . consider a narrow banking system defined by a Fisherian 100 percent reserve ratio for checkable deposits and the ban for commercial banks from trading in stocks and other financial assets."

[113] Voir également l'un de ses discours (Buchanan 2010b), ainsi qu'un article de Scott Burns (2016) qui discute du lien entre le Plan de Chicago des années 1930 et la préconisation d'une « monnaie constitutionnelle » par Buchanan.

PARTIE 1 – LA PROPOSITION 100% MONNAIE : CLARIFICATION CONCEPTUELLE

Chapter 2 – The 100% money proposal of the 1930s: an avatar of the Currency School reform ideas?*

Chapter's abstract

Since the 2008 global financial crisis, discussions have re-emerged about the '100% money' reform idea proposed in the 1930s by such authors as Henry Simons of the University of Chicago, Lauchlin Currie of Harvard, and Irving Fisher of Yale. This proposal rested on the argument that the intermingling of the money-issuing and money-lending functions, through the creation of chequable deposits by banks, was a major cause of monetary instability. The solution, therefore, was to divorce these two functions, by subjecting deposits subject to cheque to a 100% reserve requirement. This idea was reminiscent, of course, of the English Bank Charter Act of 1844, which, following the Currency School doctrines, had separated the issuing of notes by the Bank of England from its lending activity, by dividing the Bank into two departments. Although the resemblance between these two proposals has been duly highlighted, both by the 100% money authors themselves and their critics, no detailed comparative analysis seems to exist in the literature. This paper aims to fill this gap.

Introduction

The 2008 global financial crisis has given rise to renewed concerns about the stability of monetary systems and financial institutions. In this context, discussions have re-emerged about the '100% money' reform idea proposed in the 1930s by such authors as Henry Simons of the University of Chicago (the main designer of the 'Chicago Plan' of banking reform), Lauchlin Currie of Harvard, and Irving Fisher of Yale[1]. The 100% money proposal mainly

* Une version initiale de ce chapitre a fait l'objet d'une soumission à une revue en septembre 2019 (suite à laquelle aucun rapport n'a encore été reçu à ce jour). Ce papier avait auparavant été présenté lors de la 23e Conférence annuelle de l'*European Society for the History of Economic Thought* (ESHET), en mai 2019 à l'Université de Lille (Demeulemeester 2019b) ; nous remercions Bruna Ingrao pour ses commentaires adressés à cette occasion. Le papier a par ailleurs grandement bénéficié de commentaires de Laurent Le Maux, que nous tenons également à remercier. Nous insistons cependant sur le fait que les vues exprimées dans cet article nous sont propres, et que toute erreur d'interprétation nous est entièrement imputable.

[1] The Chicago Plan was first presented in a series of memoranda privately circulated in 1933 by a group of University of Chicago economists including Garfield V. Cox, Aaron Director, Paul H. Douglas, Frank H. Knight, Albert G. Hart, Lloyd W. Mints, Henry Schultz and Henry C. Simons (see especially Knight *et al*. [1933] 1995, and Simons *et al*. [1933] 1994), and appeared again in several works by Simons in particular. Currie's plan was presented in a book chapter (Currie ([1934a] 1968, pp. 151-156) and several memoranda. Fisher's plan was detailed in his book *100% Money* ([1935] 1945) and other papers; see also the (very Fisherian-like) 'Program for Monetary Reform' which he co-authored with Paul H. Douglas, Frank D. Graham, Willford I. King, Earl J. Hamilton and Charles R. Whittlesey (Fisher *et al*. 1939; a 1940 version further included John R. Commons among the signatories). Yet another proponent was James Angell (1935). Phillips (1995) provides a historical

rested on the argument that the money supply's dependence on bank loans was a cause of cumulative variations of deposit currency, largely responsible for the severity of booms and depressions. The solution was therefore to divorce the process of creating and destroying money from the expansion and contraction of bank loans. To this end, the power of money creation would rest exclusively with an independent monetary authority, issuing lawful money against the purchase of Government bonds, in accordance with a policy objective to be decided by Congress (such as, for example, stabilising the price-level). Under most versions of the plan, commercial banks would be divided into two departments: a cheque department, dealing with (transferable) chequing deposits fully covered by reserves in lawful money, and a loan department, dealing with (non-transferable) savings deposits only fractionally covered by reserves[2].

Of course, this idea of separating the issuing of money from the lending of money is reminiscent of the English Bank Charter Act of 1844, which, following the Currency School's recommendations, had divided the Bank of England into an Issue Department, responsible for the issuance of notes, and a Banking Department, dealing with the Bank's lending activities[3]. This resemblance has been duly stressed in the literature, first and foremost by the 100% money authors themselves. According to Fisher *et al*. (1939, p. 34), for instance: "The splitting of the two functions of lending and the creation of money supply would be much like that of 1844 in the Bank of England which separated the Issue Department from the Banking Department"[4]. Some of these authors explicitly traced the origin of their reform idea to reflections about the English precedent[5]. However, despite numerous references to the Act of

---

account of the 100% plan. For other relevant references in the secondary literature, see Demeulemeester (2018, p. 358n4) [Chapter 3 of this thesis, Section 1, note 4].

[2] Under the Chicago Plan, however, the banks' loan departments would be replaced by investment trusts.

[3] The Currency School included a large group of authors, particularly Robert Torrens, Samuel Jones Loyd (who in 1850 became Lord Overstone) and George Warde Norman (a director of the Bank of England). The Banking School, to which they were opposed, included Thomas Tooke, John Fullarton and John Stuart Mill. For general discussions of the controversy between the two schools, one can refer in particular to Gregory (1928), Viner (1937), Rist ([1938] 1951), Wood (1939), Mints (1945), Fetter (1965), O'Brien (1994a, 1994b) or Arnon (2011). The present paper does not discuss this controversy; only occasional references will be made to the Banking School writings.

[4] See also, for example, Fisher ([1935] 1945, pp. 19, 27, 29; 1936a, p. 412; 1937a, pp. 6-7; 1937b, p. 298) or Graham (1936, p. 431). As Allen noted, "Fisher was to allude many times to the English precedent, partly to emphasize that 'the 100 per cent proposal is the opposite of radical'" (Allen 1993, p. 706, quoting Fisher 1934b, p. 160).

[5] Simons thus made the following comment in a letter to Fisher: "Your remark about the Bank of England reminds me that I got started toward this scheme of ours about ten years ago, by trying to figure out the possibilities of applying the principle of the English Act of 1844 to the deposits as well

1844 itself, none made any reference to the Currency School writings[6]. This similarity has also been stressed in the secondary literature on the 100% money proposal[7], including the most recent—Goodhart and Jensen (2015, p. 20), for example, interpreted the post-2008 renewal of interest in the 100% scheme as the sign of an "ongoing confrontation" between the Currency and Banking schools. Beyond this resemblance, however, the Currency School proposals of the 19th century (embodied in the English Bank Charter Act of 1844) and the 100% money proposals of the 1930s (which have never been implemented) appear to be far from identical, and actually present significant differences. Because no detailed comparative analysis of these two sets of proposals can be found in the literature[8], this paper aims to fill this gap.

This paper is organised as follows. Section 1 stresses the major point of agreement between the Currency School writers and 100% money authors, on the need to divorce the issuing of money from the lending of money. Section 2 covers an initial important difference between them, in relation to monetary policy: while the 'currency principle' was an essential part of the Currency School proposals, the 100% scheme was devised independently of any policy prescription whatsoever. Section 3 highlights a second major difference, relating to the scope of their respective reform plans: the Currency School's proposals only applied to the issuing of bank notes, while the 100% money proposals considered the circulating medium as a whole. Section 4 deals with the question of central banking and its place in a system of separate monetary and banking functions, discussing how this issue was addressed by the two groups of authors.

---

as to the notes of private banks. This Act would have been an almost perfect solution to the banking problem, if bank issue could have been confined to notes" (Simons to Fisher, 19 January 1934, Fisher Papers, Yale University Library).

[6] Currie ([1931] 2004, pp. 235-238) had briefly discussed the Currency School-Banking School controversy in the first chapter of his PhD thesis, but he did not refer to it in his advocacy of the 100% plan.

[7] See, for example, Hayek (1937, pp. 81-83), Hansen (1938, p. 112), Watkins (1938, p. 16), Schumpeter (1954, p. 694), Allen (1993, pp. 704-706) or Phillips (1995, p. 3).

[8] With the exception, to some extent, of a book chapter by Sylvie Diatkine (2002, pp. 133-153), which focuses on their similarity in particular.

1. Divorcing the issuing of money from the lending of money: a point of agreement between the Currency School and the 100% money authors

The Currency School generally ascribed monetary instability to two causes: the first related to the intermingling of the money-issuing and money-lending functions (which is the main focus of this section), the other to the level of discretion granted to the monetary authority in the absence of an automatic rule of action (which we will deal with in Section 2)[9]. As far as the first of these questions is concerned, a definite similarity with the views of the 100% money authors must be stressed. Both groups held a *monetary* interpretation of business fluctuations, in which the circulation of money played a key role in exacerbating (however *not* as causing) booms and depressions of trade, and both regarded the linking of the money-issuing and money-lending functions as the key explanatory factor in this connection[10]. The extent of this similarity is limited, of course, by the fact that they disagreed about the scope of the 'money' aggregate: while the 100% money authors would include under this term all that constituted the circulating medium[11], the Currency School writers restricted it to include only coins and notes (as we will see in Section 3). This major difference notwithstanding, each group argued that the issuance of what they respectively called 'money' should be divorced from bank-lending activities.

---

[9] Loyd (1840a, p. 85) actually distinguished three causes, the first two of which referred to the dependence of note circulation on the bank-lending activity (source of a perverse causality running from prices to money), and the third to the absence of a strict policy rule: "The improper fluctuations in the amount of the paper currency of England arise from three circumstances. First, That currency is issued under the influence of competition, which necessarily tends to produce excess. Second, It is issued in the form of advances for commercial purposes. A rise of prices is therefore accompanied by an increase of issues, and a fall of prices by a diminution of issues; and thus greater fluctuations take place than would occur with a metallic currency. Third, The issuers generally are not placed under a direct obligation to provide themselves with the gold requisite to meet the demands upon them, and therefore have no sufficient inducement to look to the state of the exchanges in regulating the amount of their issues."

[10] Neither the Currency School nor the 100% money authors claimed that their respective proposals would do away with trade (or business) cycles altogether; they only claimed that such cycles would no longer be aggravated by the over-expansions or contractions of bank-created money. Loyd ([1840a] 1857, p. 167) put much emphasis on this point: "Fluctuations in the amount of the currency are seldom, if ever, the original and exciting cause of fluctuations in prices and in the state of trade. . . . The management of the currency is a subordinate agent; it seldom originates, but it may, and often does, exert a considerable influence in restraining or augmenting the violence of commercial oscillations". Norman (1838, pp. 39-40) shared this view. See also the comments by Schumpeter (1954, pp. 745-746) and O'Brien (1994a, p. xxiv). Fisher ([1935] 1945, p. 134) also conceded that his proposed plan would only make booms and depressions "vastly less severe".

[11] Some 100% money writers, like Mints and Simons in particular, even extended the 'money' concept to include liquid assets not usable as means of payment, such as non-transferable savings deposits. See Demeulemeester (2018, pp. 364-365) [Chapter 3 of this thesis, Section 3.2].

For the Currency School, this referred to the issuing of bank notes, which they regarded as problematic not only when exercised by the country banks (and Scottish banks), but also by the Bank of England itself, insofar as it was conducting a profit-oriented banking business. They drew a sharp distinction between the *monetary* and *banking* functions exercised by these institutions. The *issuing* of money, on the one hand, was viewed as a non-profit oriented function to be performed by a dedicated body—that of providing the economic community with the means of payment needed to perform its transactions:

> A Bank of Issue is entrusted with the *creation* of the circulating medium. . . . [Its] sole duty . . . is to take efficient means for issuing its paper money upon good security, and regulating the amount of it by one fixed rule. (Loyd 1837, p. 43, italics in original)

The *lending* of money, on the other hand, was viewed as a profit-oriented activity to be performed by private banking businesses—that of serving as intermediary between savers-lenders and enterprisers-borrowers:

> A Bank of Deposit and Discount is concerned only with the *use*, *distribution*, or *application* of that circulating medium. . . . [Its] principal object and business . . . is to obtain the command of as large a proportion as possible of the existing circulating medium, and to distribute it in such manner as shall combine security for repayment with the highest rate of profit. (Loyd 1837, p. 43, italics in original)

Echoing a famous statement made by David Ricardo in his *Plan for the Establishment of a National Bank*[12], Loyd (1837, p. 43) argued that these two functions were "perfectly separate and distinct" and that there was "no connexion between them which render[ed] it necessary that they should be administered by the same parties". Whereas Ricardo sought to make the state the sole beneficiary of the seigniorage profit stemming from paper money issuance, Loyd (1837, p. 44) insisted that the issuing and the lending of notes were "conflicting duties" leading to monetary instability. A banker himself, he held that the banks *could not help*, even if they wanted to, issuing notes when prices and profits were rising, and destroying notes when they were falling—thereby feeding the trade cycle. After summarizing the cyclical stages of the state of trade—"quiescence, — next improvement, — growing confidence, — prosperity, — excitement, — overtrading, — convulsion, — pressure, — stagnation, — distress, — ending again in quiescence" (Loyd 1837, p. 44)—, he thus explained:

> Now during the progress of trade through this circular course, what is the necessary situation and the inevitable conduct of the Banker? . . . When confidence is increasing, . . . when prices are rising, profits increasing, and every merchant or

[12] "The Bank of England performs two operations of banking, which are quite distinct, and have no necessary connection with each other: it issues a paper currency as a substitute for a metallic one; and it advances money in the way of loan, to merchants and others" (Ricardo [1824] 1951, Vol. 4, p. 276).

> tradesman . . . is desirous of extending his operations,—the Banker is looked to by his customers to act in concert with them . . . It would be difficult to show that it is not his duty, properly understood, to obey this call, and to assist the expanding energies of trade; at all events it would be practically impossible for him to act otherwise . . . A Banker cannot contract his accommodation at a period when the whole trading and mercantile world are acting under one common impetus of expansion. If under these circumstances the Banker, in addition to what may be properly called his ordinary and legitimate resources, is also entrusted with the power of issuing paper-money *ad libitum*; is it not inevitable that he should abuse that power? (Loyd 1837, pp. 44-46)[13]

He concluded:

> The effect, of course, of such an application by the Banker of his power to issue will be to give a further stimulus to the existing tendencies of the trading world, and ultimately to aggravate the convulsion to which they must lead. Such we conceive to be the inevitable consequence of combining the issue of paper money with ordinary banking functions; and probably much of the intensity which characterises the commercial convulsions of this country may be justly attributed to this cause. (Loyd 1837, pp. 46-47)

Norman (1841, pp. 30-31) argued, along the same lines, that such perverse expansions or contractions of the circulating medium were bound to continue as long as the issuing of money (supposed to follow "currency principles") was linked to the lending of money (supposed to follow "banking" principles)[14].

Loyd and Norman's analysis rested on the fact that, from the moment that money was issued through loans, the causality running from money to prices would be coupled with a reverse causality running from prices to bank-created money, conferring upon the latter a perverse pro-cyclical behaviour[15]. One reason for separating money-issuing from banking was thus to prevent this feedback loop from occurring. As Loyd ([1840b] 1857) put it:

---

[13] To compare with Fisher ([1935] 1945, p. 78, italics in original): "And the banks cannot help it. The public is quite wrong when, in the depression, they blame the individual bankers. It is the banking system—the 10% system—which is at fault. *Under this system, the bankers cannot help destroying money when it should be created, namely in a depression; while in a boom they create money when it should be destroyed.*"

[14] See also Norman (1841, pp. 29-30, 71-72). Of course, the Currency School writers had one very specific currency principle in mind, which would become known as '*the* currency principle', as we will see in Section 2.

[15] Torrens does not seem to have shared this aspect of Loyd and Norman's analysis. He only ascribed monetary instability to the mismanagement of their issues by the directors of the Bank of England (as has also been noted by Schwartz [1987] 2008, p. 7). As he put it: "When they cease to inflict disease, they will no longer be required to administer remedies" (Torrens 1837, p. 44; see also 1840, p. 31). Loyd and Norman also blamed the Bank directors, of course (as we will see in Section 2), but this was not their sole argument for splitting the Bank into two departments.

> A change in the amount of the circulation must always have a tendency to produce a corresponding effect upon prices . . . (p. 203)
>
> Now this is the vital objection to our country issues, that they expand and contract *with prices*, contrary to what ought to be the result upon sound principles, and would be the result with a metallic circulation. (p. 222, italics added)[16]

The cumulative interplay between bank-created money and prices, already hinted at by Henry Thornton as early as 1802[17], would be more fully described by late 19th and early 20th century neoclassical economists such as Marshall, Wicksell and Fisher (see Laidler 1991)[18]. Contrary to the Currency School, they included chequable bank deposits in their analyses. But, despite the fact that their respective cycle theories all rested on the creation of money through loans, these authors usually did *not* (or did not yet, in Fisher's case) call for a separation between the money-issuing and money-lending functions. An important exception among neoclassical economists, however, was Léon Walras, who insisted that no money should be created out of loans, whether in the form of bank notes ([1879] 1898b, pp. 373-374; [1885] 1898b, pp. 46-48) or chequable deposits ([1898a] 1898b, pp. 378-380)[19]. Then, among Austrian economists, Ludwig von Mises, building upon Wicksell's distinction between the natural and money rates of interest, proposed to extend the provisions of the English Act of 1844 to deposits subject to cheque, particularly so as to prevent this gap between the two rates from appearing (see Mises [1912] 1953, pp. 407-408; [1928] 1978, p. 150). But, apart from these and a few other precursors of the 100% money scheme[20], the idea of such a separation of functions would only re-emerge in the context of the U.S. Great Depression of the 1930s. It was precisely to put an end to the cumulative interplay at work between the volume of loans, the volume and

[16] The only causal relationship from prices to money which the Currency School accepted as natural was that of the price-specie flow mechanism, by which an *increase* in prices led, through an outflow of bullion, to a *decrease* in the money supply, and conversely in the opposite case. This they regarded as an equilibrating, not a perverse, mechanism.

[17] See Thornton ([1802] 1939, pp. 237-238, 256, 336-337, 342), who had also noted the reciprocal causality between bank-created money and prices (*ibid.*, p. 198).

[18] On the evolution of Fisher's analysis in this respect, and how this led him to eventually endorse the 100% money proposal, see Demeulemeester (2019a) [Chapter 4 of this thesis].

[19] Walras argued that "ownership titles to the circulating capital should not serve as money" ([1885] 1898b, p. 47, my translation ["il ne faut pas que les titres de propriété du capital circulant servent de monnaie"]), and condemned the issuing of means of payment out of bank loans, on the ground that it would disturb the ratio between consumer goods and new capital goods, increase the general level of prices, and ultimately bring about monetary and financial crises.

[20] One may in particular mention Charles H. Carroll (1964) in the United States, writing between 1855 and 1879, and Frederick Soddy ([1926] 1933) in England, who directly anticipated the U.S. proposals of the 1930s.

velocity of money, and the levels of prices and profits, that such authors as Simons, Currie and Fisher came to propose divorcing the creation of money from the extension of loans[21].

The 100% money authors thus agreed with the Currency School that, more than *banking practices*, it was above all the *monetary system* (intertwined as it was with the banking system) which was at fault. Both groups therefore called for a separation of the two conflicting functions of issuing and lending money. Their *institutional* reform proposals—to be distinguished from their *policy* reform proposals, which will be covered in Section 2—showed some considerable resemblance.

Insofar as the *issuing function* was concerned, the Currency School proposed, firstly, gradually replacing the note circulation of country banks by Bank of England notes, so as to eventually confer an issuing monopoly to the latter establishment[22]. They also proposed dividing the Bank of England itself into two departments, one of which—the Issue Department—would be exclusively tasked with issuing notes[23]. Both suggestions would be implemented by the Bank Charter Act of 1844 (usually known as Peel's Act), applying to England and Wales, completed by separate Acts of 1845 applying to Scotland and Ireland (see Fetter 1965, pp. 194-197). Under the 100% money proposals, the privilege of issuing money (whatever its form) would lie exclusively with a dedicated state-owned monetary authority (the "Currency Commission" in Fisher's plan), independent both from the banks and from the Government[24].

The *lending function* would, under all proposals, be left to profit-guided businesses. Under the Currency School proposals (and, again, as actually implemented under Peel's Act), a Banking Department, within the Bank of England, would compete with other private banks in providing money-lending services, but without the possibility of issuing *notes* (it could still,

---

[21] See, for example, Simons *et al*. ([1933] 1994, pp. 31, 46-47), Currie ([1934a] 1968, p. 131), or Fisher ([1935] 1945, pp. 78, 181). Their respective analyses of monetary instability, with relevant quotations, are discussed in Demeulemeester (2018, pp. 365-370) [Chapter 3 of this thesis, Section 4].

[22] Torrens (1837, pp. 44-55), however, considered that country bank notes would usually be kept in a fixed ratio to Bank of England notes, making it unnecessary to restrict their issue. On this point he was explicitly refuted by Loyd (1840, pp. 63-69).

[23] The Issue Department, under the Act of 1844, remained part of the privately-owned Bank of England. However, as Fetter (1965) notes, Torrens favoured "a State Bank as the sole note issuer" (p. 157), while Loyd "had no objection to separating the Issue Department from the Bank and making it a State agency. This he felt would make no substantive change as the Issue Department 'is nothing more than a department of the State, worked mechanically and clerically by the clerks of the Bank of England; but it is essentially a department of the State'" (p. 254, quoting Loyd [1857] 1858, p. 13).

[24] The only exception here was Currie ([1934a] 1968, pp. 151-156), who would have entrusted this function to a Government-dependent agency.

however, like other banks, create transferable deposits—as we will see in Section 3). Under the 100% money proposals, private banks would typically offer both deposit-keeping-and-transferring and deposit-lending services to their customers[25], but without the possibility of issuing any kinds of means of payment whatsoever.

To some extent, the Currency School and 100% money authors thus used a similar argument for divorcing money from loans. In the case of the Currency School, however, the separation of functions rested on further grounds: it was also—and perhaps mainly—a precondition for implementing their prescribed policy rule, the 'currency principle'.

2. The 'currency principle' as an automatic policy rule: a specificity of the Currency School

The second major cause of monetary instability for the Currency School related to the conduct of monetary policy. In their view, no adequate regulation of the money supply could possibly be achieved, as long as the Bank of England was left with any kind of discretionary powers in the exercise of its issuing function. To this end, they had a very specific policy rule in mind, as we will now see.

At the time of the Currency School writings, gold (or silver as a possible alternative) was still largely believed to offer the best practical standard for regulating the value of money. Since the crisis of 1825, however—which had followed shortly after the resumption of cash payments by the Bank of England in 1821—, it had become increasingly clear that the simple convertibility of bank money into gold was not a sufficient condition of monetary stability (see Fetter 1965, p. 111). For this reason, many had become convinced of the need to submit the issue of bank money to a definite principle of action. This led to the formulating of the 'currency principle', according to which the total volume of a mixed monetary circulation, comprising both metallic currency and bank money, should behave exactly as a purely

[25] Here, however, the Chicago Plan—reflecting the views of Simons—was a major exception: because the velocity of circulation of money (*V*) was regarded as an independent factor of instability, and because the very existence of fractional-reserve banking (even if conducted with non-transferable savings deposits) was viewed as exacerbating the variations in *V*, the lending function would be entirely taken away from the banks, and performed instead by investment trusts, working with their own capital exclusively. See Demeulemeester (2018) [Chapter 3 of this thesis].

metallic circulation under similar circumstances would, expanding or contracting to the same extent as the monetary metal would flow into or out of the country[26].

A first attempt at implementing this principle was made with the 'Palmer rule', adopted by the Bank of England in 1827, and first explained by its governor, John Horsley Palmer, in 1832 (see Viner 1937, p. 224; Fetter 1965, p. 132). This rule, according to Fetter (1965, pp. 132-133), "was that the Bank, when the circulation was 'full'—that is, when the exchanges were just on the point of becoming unfavorable—should have a specie reserve equal to about one third of notes and deposits", and "starting from this situation all fluctuations in the Bank's notes and deposits should, 'excepting under special conditions', be equal to the changes in the Bank's holding of specie". In other words, this amounted to subjecting both the notes *and* deposits of the Bank of England to a marginal 100% reserve requirement. If applied to *all* deposits of the Bank, however, the Palmer rule would have placed a drastic restriction not only upon its money-issuing, but also upon its money-lending activity. Probably for this reason, the rule was never really followed in practice. And, also for this reason—as we will see in Section 3—the Currency School authors rejected it.

They thus proposed applying the 'currency principle' solely to *paper* money[27]. Loyd (1844, pp. 20-21) insisted that following this rule was a condition of monetary stability:

> Without this rule, all must be left to the irregularity and uncertainty of individual discretion. The manager of the circulation must undertake to foresee and to anticipate events, instead of merely making his measures conform to a self-acting test.
>
> In the exercise of such a discretion, the manager of the circulation . . . will, in nine cases out of ten, fall into error; whilst the interests of the whole community, and the fate of all mercantile calculations, will be dependent upon the sound or unsound discretion of some individual or body; instead of depending upon their own prudence and judgment, exercised under the operation of a fixed and invariable law, the nature and provisions of which are equally known to every body.

The desire to suppress all discretion in regard to note-issues was thus a *further* reason why the Currency School wanted to divide the Bank of England into two departments. While the first

[26] The 'currency principle' can be found in the writings of Thomas Joplin (1823, p. 264), Henry Drummond (1826, p. 47) and James Pennington (see his 1827 memorandum to Huskisson, reprinted in Pennington 1840, pp. 85-88). Pennington, who is usually considered the first to have stated this principle in a clear and organised manner (see Fetter 1965, p. 130, and O'Brien 1994a, p. xxi), would have applied it to all bank liabilities, comprising both notes and deposits (see Viner 1937, p. 226). As we will see, this was similar to the Palmer rule, which, according to Viner (1937, p. 224), was adopted "[a]t the same time, although apparently wholly independently".

[27] The soundness of the 'currency principle' as a proper guide for monetary policy was, of course, at the heart of the Banking School-Currency School controversy, which does not fall within this paper's scope of discussion.

reason—putting an end to the inherently pro-cyclical behaviour of bank-created money (see Section 1)—called for a division of functions as an end in itself, the separation, this time, was viewed as an institutional prerequisite to a specific policy objective: putting the 'currency principle' effectively into practice. The Currency School tended to treat these two issues as joint matters, as did the Bank Charter Act of 1844: on the one hand, the Bank of England was divided in two departments (Title 1 of the Act), and, on the other, the Issue Department was subjected to a strict policy rule, aiming to apply the 'currency principle' to bank notes (Title 2). It was stipulated that, beyond a fixed fiduciary issue of notes of £14 million, made against the purchase of Government debt, all additional note issues should be made only against the receipt or purchase of bullion—which effectively amounted to a 100% marginal reserve requirement for notes[28].

In contrast, the 100% money authors would treat the questions related to the monetary *system* and to monetary *policy* as separate rather than joint matters. As Fisher ([1935] 1945, p. 96) stated, "the 100% system is, theoretically, entirely independent of any particular monetary policy". The adoption of a monetary policy criterion, under all 100% plans, was to be decided by Congress independently from the proposed institutional reform. This, in itself, was a major difference with the English Act of 1844, which had jointly enacted both an institutional reform and a specific policy rule.

For sure, this did not prevent the 100% money authors from expressing their own preferences regarding monetary policy objectives. In this respect, it is of course largely irrelevant to compare their views with those of the Currency School writers, considering how much the state of monetary economics had evolved between the two periods. Advances had been made, for example, in credit cycle analysis, in "the refinement of the quantity theory" (Laidler 1991, p. 2) and in the practice of measuring the purchasing power of money through index numbers of prices (see Laidler 1991, pp. 172-178). These, combined with historical events which had allowed new experiences of inconvertible currencies to take place, had led

[28] This 100% marginal reserve requirement applying to the note issues of the Issue Department, however, should not be likened to the 100% reserve requirement applying, under the 100% money proposal, to the cheque departments of commercial banks. In the latter case, the 100% reserve requirement aims at making *the cheque departments of the banks* (which, as appears in Appendix 1, had no equivalent under the 1844 reform) mere 'warehouses' for depositors' money, but the monetary authority itself would be subjected to no kind of reserve requirement at all. In the former case, in contrast, the marginal reserve requirement aimed to constrain *the monetary authority itself* (the Issue Department) in its issuing activity. Confusion between these two kinds of reserve requirements seems to explain why the 100% money system is sometimes mistakenly likened to a 'currency board' (see, for example, Diatkine 2002, p. 151). Fisher himself undeniably caused confusion by over-emphasising the resemblance between the Act of 1844 and his own reform plan.

to the "eventual destruction" of the gold standard and the increased acceptance of "the notion of a managed money . . . capable of producing a better economic environment than one tied to gold" (Laidler 1991, p. 20). By the 1930s, more and more economists—and this was clearly the case of the 100% money authors—held that priority should be given to the internal stabilisation of money in terms of domestic purchasing power, over the "minor problem" (Fisher 1934a, p. 396) of its external stabilisation in terms of foreign exchange. This was of course at odds with any gold-based rule such as the 'currency principle'[29].

Beyond this general consensus, however, the 100% authors differed as to which specific criterion, or criteria, they personally favoured. Some of them shared the Currency School's preference for an automatic rule leaving no place for discretion whatsoever. This was the case, in particular, of Henry Simons. The early versions of the Chicago Plan, written under his leadership, agreed that the criterion of price-level stabilisation should be retained "as a short-run expedient" (Knight *et al*., [1995] 1933, pp. 197-198), but favoured a more automatic rule—such as fixing the money supply—for the long run (Simons *et al*., [1933] 1994, p. 37)[30]. However, there was no consensus among the Chicago economists on this point[31]. As for Fisher, his own preference was for a stable price-level objective, although he considered other possible criteria as well (Fisher [1935] 1945, pp. 26-27, 96-99; see also Fisher *et al*. 1939, pp. 10-16)[32]. Simons (1936, p. 21) himself would later come to recommend price-level

[29] As Robbins (1958, p. 252n1, italics in original) commented: "It is perhaps tempting to see in the Currency School the forerunners of the talented advocates in our own day of 100 per cent. money. But the likeness does not go very far. . . . The Currency School were concerned to preserve convertibility by maintaining *external* equilibrium. The advocates of 100 per cent money are hardly concerned with external equilibrium at all. Their main object is to prevent the annihilation or creation of internal purchasing power by internal banking operations. In so far as they have interested themselves in considerations of external balance they have tended to recommend equilibration by means of a floating rate—which . . . is a very long way from the position of the Currency School." Robbins, however, might have somewhat underestimated the similarity between the two groups of authors, as at no point did he discuss Loyd and Norman's analysis of the pro-cyclical behaviour of bank-created money, which we discussed in Section 1. This might be explained by the fact that his own study focused on Torrens, who, as we already noted, held no such argumentation.

[30] Angell (1935, p. 26) also argued that the quantity of money should be held "substantially constant". Hansen (1938, p. 115) would severely criticise Simons' and Angell's proposals on the ground that they would "place the community in a monetary strait jacket".

[31] Douglas (1935, p. 208), for example, favoured the criterion of a stable general price level. On this point, see Tavlas (2019a, p. 262). See also Tavlas (2019b) for a discussion of the views respectively held by the Chicago economists and Fisher in regard to policy rules.

[32] Fisher ([1935] 1945, pp. 24, 100-101, 177-181, 186, 214), in contrast to Simons, repeatedly insisted on the need for active monetary management and elasticity. Referring to the automatic policy rule "proposed by these economists at Chicago", he commented: "Personally, I would prefer to have some discretion enter in order to get a higher degree of stabilization. This is like running your automobile with a robot instead of with a chauffeur. I would rather have a chauffeur and give him a little discretion, although he would be told where he is to go" (Fisher 1935a, p. 542).

stabilisation as the best feasible (although not ideal) monetary policy objective. As for Currie ([1934a] 1968, p. 154), he did not specify what kind of policy he would have favoured, but price-level stabilisation was clearly a consideration. The proponents of price-level stabilisation sometimes stressed the distinction between the *ends* of monetary policy, to be guided by a specific criterion, and its *means* of implementation, for which some discretion was deemed necessary[33]. In any case, for most 100% money writers, their reform scheme was meant to *serve* monetary management, rather than to prevent any such kind of management from taking place at all[34]. This, again, was a major difference with the Currency School. In this regard, Fisher (1937b, p. 298) clearly forced the resemblance between his own proposal and the English reform, when arguing that "[t]he 100 per cent. plan would do for deposits, or cheque-book money, exactly what the Bank Act of 1844 did for Bank of England notes, pocket-book money". He overlooked the fact that the Act of 1844 was not only about institutional reform, but further contained, with the 'currency principle', an automatic policy rule clearly at odds with his own policy preferences.

Let us now turn to yet another point of divergence between the Currency School and 100% money writers, relating to the scope of their respective separation plans.

3. Applying the separation of functions to the circulating medium as a whole: a specificity of the 100% money proposal

The Currency School only sought to insulate *part* of the circulating medium—bank notes—from the money-lending business. They were of course perfectly aware that bank deposits, as well as other credit instruments such as cheques or bills of exchange, insofar as

[33] See, in particular, Fisher *et al*. (1939, p. 18, italics in original): "The Monetary Authority should, of course, have the widest possible discretion with respect to the *methods* it might find most suitable for attaining the objectives laid down in the mandate. That is, it should be absolutely free to use any or all of its powers over money and the banks according to its own best judgment; but, as has been stressed before, the Monetary Authority should not be free to deviate from the mandate given to it by Congress." Their position was somewhat similar to that of Ricardo ([1824] 1951, Vol. 4), whose chosen policy objective (in his case, stabilising the price of gold) also required active monetary management on the part of commissioners left with operational discretion. The same went for Walras, who advocated stabilising a multiple price index (such as proposed by Jevons), and insisted, for this reason, that money should not be made automatic (see Walras [1884] 1898b, pp. 3-11; [1886] 1898b, p. 125).

[34] This difference with the English Act of 1844 has been duly noted by Hart (1935, p. 104n3) and Watkins (1938, p. 16). This, of course, would not prevent other authors, such as Friedman ([1960] 1992), from proposing combining the 100% money system with an automatic policy rule, precisely to do away with any kind of monetary management whatsoever.

they were endorsable, could also serve as means of payment for the settlement of transactions. But, for different reasons, they refused to treat them in the same way as notes.

Loyd and Norman, on the one hand, forcefully denied such instruments the qualification of money. In a somewhat contradictory manner, they argued at the same time that deposits were an "auxiliary currency" (Loyd [1840b] 1857, p. 201) performing "monetary functions" (Norman 1841, pp. 51, 67), but that they should only be regarded as "banking expedients for economizing currency" (Norman 1841, p. 47; see also Loyd 1840b, p. 281). According to Loyd ([1840b] 1857, p. 201):

> Deposits, debts owing, indeed Credit in any form, may be made the means of purchasing and paying, of adjusting transactions; and they may therefore, in one sense, be considered as forming a part of what has been called "Auxiliary Currency". But the whole superstructure of "Auxiliary Currency" forms a subject, distinct from that of the management of the circulation.

Asked by a parliamentary committee why he did not include deposits in his definition of the circulation, Loyd started to explain why he regarded bank notes as money:

> The precious metals, converted into coin, constitute the money of each country. That coin circulates sometimes in kind; but in highly advanced countries it is *represented*, to a certain extent, by paper notes, promising to pay the coin to bearer on demand; *those notes being of such a nature, in principle, that the increase of them supplants coin to an equal amount*. Where those notes are in use, the metallic coin, together with those notes, constitutes the money or currency of that country. (Loyd 1840b, p. 212, italics added)

He then added:

> Now, I conceive, that neither deposits nor bills of exchange in any way whatever possess [the] qualities [of money]. In the first place, the amount of them is not determined by the laws which determine the amount of the precious metals in each country; in the second place, they will in no respect serve as a common measure of value, or a standard by reference to which we can measure the relative values of all other things; and in the next place, they do not possess that power of universal exchangeability which belongs to the money of the country. (Loyd 1840b, p. 212)

He thus seemed to hold the view that bank notes were to serve as certificates of deposits, representing coins kept in custody and circulating in their place, rather than as credit instruments, used to acknowledge receipt of savings intended to finance loans and investments. Only under such conditions could notes be regarded as obeying the same laws as precious metals. But this, of course, was a prescriptive approach indicating what bank notes *should be*, not a descriptive one indicating what they actually were. The very same point could have been made in regard to deposit balances, which in practice served similar functions to notes. Loyd's last argument—that deposits, contrary to notes, were not

universally accepted as a means of payment—was not very convincing either. Norman (1840, p. 143), asked a similar question by the same committee, provided a similar answer (see also Norman 1841, pp. 35, 54, 58). These explanations didn't weigh much in face of the Banking School's argument that, because bank deposits (and bills of exchange) performed essentially the same functions as bank notes, there was no justification for treating them any differently (see for example Tooke 1844, pp. 17-33).

Torrens (1837, pp. 6-12), on the other hand, insisted that bank deposits subject to cheque *were* money[35]. He also argued, at some point, that these deposits could be subject to unwanted expansions or contractions[36]. But then, in the rest of his work, for some reason, he seemed to suppose the existence of a fixed reserve-deposit ratio (just like he also supposed, as we saw, the existence of a fixed ratio between Bank of England notes and country bank notes)[37]. In his view, therefore, any given variation in the monetary base (made of metallic and paper money) would normally produce an exactly proportional variation in the volume of bank deposits, making it unnecessary to include them in the separation plan. Torrens thus focused his criticism on the mismanagement of Bank of England notes exclusively. Only in his later writings would he fully acknowledge the inherent instability of the reserve-deposit ratio (Torrens 1858, pp. 267, 271-276); however, at the same time, yielding to Loyd's insistence, he now refused to regard deposits as money (Torrens 1858, pp. 264-266)[38]. This in fact prevented him from having to recognise that the 'money' supply remained subject to sharp fluctuations under the workings of the Bank Charter Act.

The Currency School, as a matter of fact, was at a loss to explain why deposits should be treated any differently than bank notes. It appears that the only alternative they contemplated was either to include *all* bank deposits in the reform, or to include *none* of them at all—the

---

[35] "To a merchant who has, in a solvent bank, a deposit against which he can draw his checks, that deposit is *money*" (Torrens 1837, p. 7, italics in original).

[36] "In periods of confidence and high commercial credit, a small amount in coin and bank notes, may serve as the basis of a large amount of bank deposits. It follows, that in such periods, the circulating medium may expand, without any increase in the amount, either of coin or of bank notes; and that, while the amount of coin and notes remains undiminished, the circulating medium may suffer contraction" (Torrens 1837, pp. 11-12).

[37] See, for example, Torrens (1837, pp. 19-21), and the comments by O'Brien (1994a, p. ix). James Pennington (in Tooke 1838, p. 369) pointed out this flaw in Torrens' analysis: "It never occurred to me, as appears to have been supposed by Colonel Torrens, that every million of notes issued by the Bank of England forms the basis of five millions of deposits; and that every million withdrawn from circulation, by the Bank, occasions a five-fold diminution of those deposits. . . . Colonel Torrens . . . appears to have fallen into some misapprehension on this head."

[38] On Loyd's influence on Torrens on this matter, see O'Brien (1994a, pp. viii-ix).

latter option being of course much more preferable and also more applicable than the former. To prevent the banks, already deprived of the right to issue notes, from issuing liabilities in the form of deposits, would have meant nothing less than the end of banking[39]. This is precisely the reason why Loyd rejected the Palmer rule. This rule, as we saw, would have severely restricted the Bank of England's ability to issue promises to pay both in the form of notes *and* deposits. Loyd, who argued that the issuing of notes should be divorced from banking and submitted to the 'currency principle', strongly opposed any similar treatment for deposits:

> But when the same rule is further applied to the regulation of its conduct as a banking concern, it is necessarily found to be wholly impracticable. It is in the nature of banking business that the amount of its deposits should vary with a variety of circumstances; and as its amount of deposits varies, the amount of that in which those deposits are invested (viz. the securities) must vary also. It is therefore quite absurd to talk of the Bank, in its character of a banking concern, keeping the amount of its securities invariable. The reverse must necessarily be the case. (Loyd 1837, p. 11)

The 100% money authors of the 1930s would find another way to deal with these difficulties. They proposed to fully differentiate between two kinds of deposits: *(transferable) chequing deposits*, fulfilling a payment function, and *(non-transferable) savings deposits*, fulfilling an investment function[40]. Only chequing deposits would be separated from bank-lending activities: they would be fully covered by reserves in lawful money, so that only the monetary authority would be allowed to increase or decrease the circulating medium in amount. However, under most proposals, savings deposits could still be freely multiplied by the banks in the process of collecting savings and making loans, as long as they could not be used as means of payment[41]. To this end, in addition to separating the issuing of money (entrusted

[39] As Robbins (1958, p. 141) commented, "an extension of the Currency principle from notes to deposits—i.e. what has come to be called 100 per cent banking" would be in fact "the extinction of banking as we know it". He was certainly right in this assertion, but wrong, however, if by "100 per cent banking" he meant to refer to the 100% money proposal—as we will see.

[40] The distinction between transferable and non-transferable deposits is, of course, not the same as the distinction between demand deposits (payable immediately) and time deposits (payable at a later date, or after notice). Some deposits may be convertible 'on demand' without being, at the same time, transferable by cheque. The 100% money authors were aware that the two distinctions did not necessarily overlap (see, for instance, Currie [1934a] 1968, p. 14). However, they unfortunately showed a lack of rigor in the terminology they employed, sometimes speaking of *demand* and *time* deposits when they obviously meant to distinguish between *chequing* and *savings* deposits. This, of course, inevitably led to some confusion.

[41] Again, the specific Chicago Plan proposal must here be mentioned as a major exception. As already explained, it would put an end to the very practice of lending from deposits, and turn lending banks into investment trusts. However, this was not due to a failure to distinguish between transferable and non-transferable deposits, but rather to the very specific interpretation of monetary instability held by Simons in particular (see Demeulemeester 2018 [Chapter 3 of this thesis]).

with an independent monetary authority) from the lending of money (left with the banks), the 100% money authors proposed a further separation, within the banks, between a *cheque department* dealing with the keeping and transferring of chequing deposits (subject to a 100% reserve requirement), and a *loan department* dealing with the collecting and lending out of savings deposits (only fractionally covered by reserves). Such a separation had no equivalent in the Currency School reform proposals[42].

Possibly because they never came up with a similar distinction, the Currency School writers were not able to solve the delicate question of bank deposits, and chose not to include them within the scope of their separation plan at all[43]. As such, under the Act of 1844, the Issue Department of the Bank of England was only vested with the privilege of issuing notes; no such provision was made for the issuing of deposits subject to cheque. This Act therefore rendered *paper money* independent of the bank-lending activity, and fully secured its convertibility into gold. But, because other means of payment were left out of the reform, the Act did not put an end to the dependence of the circulating medium *as a whole* upon banking activity[44]. This flaw would only be addressed, as we have seen, by the 100% money proposal. And, because the circulating medium at large, under the 1844 system, still largely depended upon banks, it was all the more important that banking activities remain regulated in some way. This now leads us to the question of central banking.

---

[42] A comparative presentation, including balance sheets, of the monetary and banking systems under the respective Currency School and 100% money proposals (exemplified by Fisher's plan), is provided in Appendix 1.

[43] Fisher, observing that the Act of 1844 "overlooked the fact that bank deposits could be used as money" (1936a, p. 412), argued that the 100% plan was "merely to finish the job undertaken by Sir Robert Peel" (1937a, p. 293). At no point did he notice, however, that the distinction between chequing deposits and savings deposits, which was so central to his own proposal (and so obvious to him), needed to be established first, if the provisions of the Act of 1844 were to be extended to deposit currency. Only a few British writers of the time seem to have come up with a distinction of this kind, such as Gilbart (1841, p. 100), who held: "Those deposits only are thus transferred which are payable on demand. This class of deposits, therefore, can only be considered as currency".

[44] Pennington (1840, p. 211)—described by O'Brien (1994a, p. xxiii) as "a 'semi-detached member' of the Currency School"—, at least, was aware of this limitation: "But in all this, the operation and influence on the prices of commodities, and on the foreign exchange, of that medium of interchange – call it credit, auxiliary currency, or by any other name – which is so largely employed in this country, in addition to bank notes and the coin of the realm, is wholly overlooked. The promissory note circulation may indeed be limited in the way proposed, but such a limitation of the paper would not alone be sufficient to put an end to those alternations of excitement and depression which it is so desirable, if possible, to prevent, or at least mitigate."

4. Central banking's place within a system of separate monetary and banking functions

The Currency School writers, convinced as they were that their reform plan would completely divorce the issuing from the lending of money, argued that lending could—and should—be left "perfectly free" (Norman 1838, p. 34)[45]. However, they went so far as to apply this reasoning to the Banking Department of the Bank of England itself, which they argued was "only an ordinary banking concern on a large scale; its business must be conducted and regulated upon ordinary banking principles" (Loyd [1857] 1858, p. 219)[46]. They did recognise that part of the "true business of a banker" was to keep "a fund ultimately available in cases of unusual emergency", and that "[i]f this [was] the case with respect to bankers generally, it [was] so in a much greater degree with regard to the Bank of England" (Loyd [1840b] 1857, p. 225)[47]. But this did not seem to imply that the Bank should keep more than ordinary reserves:

> One difficulty will probably be anticipated as likely to arise from the diminished power which the Bank under this arrangement will possess of relieving commercial pressure and extending support to public credit. This evil, however, will probably prove to be much less than many persons apprehend. . . . We may further observe that the banking resources of the Bank will remain unimpaired and unfettered; and the only respect in which the Bank will be restricted . . . will be in the exercise of her improper and dangerous power of creating money beyond the amount which ought to exist. (Loyd 1840a, pp. 113-114)

They did anticipate that, should such reserves prove insufficient, the note-issuing restrictions applying to the Issue Department could be temporarily suspended, allowing it to come to the Banking Department's rescue[48]. However, convinced as they were that their reform plan

---

[45] One would usually find the same argument expressed by the 100% money authors. See, for example, Fisher (1936a, p. 412, italics in original): "The Government should take away from the banks all control over *money*, but should leave the *lending* of money to bankers. We could leave the banks free, or at any rate far freer than they are now, to lend money as they please, provided we no longer allowed them to manufacture the money which they lend." See also Fisher ([1935] 1945, p. 171).

[46] References to this and other similar statements by Loyd and Norman are provided by Le Maux (2018, p. 552n9). The 100% money writers would not go this far. According to Fisher ([1935] 1945, p. 159): "Any private-profit motive in central banking is always a source of danger. This is especially true under a 10% system. A central bank, in order to serve other banks, must often take a course exactly opposite to that which would be the most profitable one for itself. The private-profit motive of central banks has, consequently, become subordinate, even in the Bank of England, which ostensibly has always been a private bank entitled to private profits."

[47] See also Torrens ([1848] 1857, pp. 77-78).

[48] According to Fetter (1965, p. 276), "Norman had suggested a provision, rejected by Peel, that on the authority of three ministers the [Issue Department] could exceed the fiduciary issue set in the act." See also Loyd (1844, p. 53), who recognised that emergency would justify the Government "exercising special interference" in that regard.

would efficiently put an end to monetary and banking instability, they did *not* develop any theory of central banking, by which the Banking Department could be made to behave as a *non-profit oriented* lender of last resort[49].

Not surprisingly, after the Act of 1844 was passed, the Banking Department, relieved from any duty in respect to note-issues, was to behave as if it no longer bore any public responsibility whatsoever[50]. The crisis of 1847 that followed soon after was so severe that the provision of the Act of 1844 had to be suspended. As Fetter (1965, p. 201) notes: "However, the developments that culminated in that crisis had their origin not in any specific provision of the act of 1844, but in the apparent belief of the Bank management that the act had freed them from certain restrictions which public opinion had previously imposed on them". He further commented: "The Bank of England certainly was less a central bank in 1845 than it had been in 1825, and probably less than it had been in 1793" (Fetter 1965, p. 258). The Act would again have to be suspended during the crises of 1857 and 1866[51]. It is true, as some commentators have noted, that "the freedom which the Act left to the Bank in the conduct of its banking business included the freedom to conduct it as a central bank", as it had sometime done in the past (Whale 1944, p. 109; see also Viner 1937, pp. 263-264, and Fetter 1965, p. 205.). But for the Banking Department to fully accept lender of last resort responsibility, one

[49] According to Fetter (1965, p. 205): "The supporters of the act in large part had disposed of the problem of the Bank's responsibility by assuming that it would no longer arise under the new legislative dispensation". This confidence clearly appeared, for example, in Torrens' *Letter to Thomas Tooke* (Torrens 1840, p. 10): "The difference between us is this: you contend that the proposed separation of the business of the Bank into two distinct departments, would check overtrading in the department of issue, but would not check overtrading in the department of deposit; while I maintain, on the contrary, that the proposed separation would check overtrading in both departments." Torrens (1858, pp. 275-281), however, would hold a diametrically opposed position many years later, after the Act of 1844 had to be suspended for a second time in 1857. But, by that time, as we mentioned already, he had ceased to regard deposits as money.

[50] According to Viner (1937, p. 255): "When the Act of 1844 came into effect, the Bank at once proceeded to act as if the freedom from external control which the act left to the banking department had also rendered unnecessary any internal control". On the consequences of the Act of 1844 for the money market and the financial sphere, see Le Maux (2018).

[51] Fisher (1937a, p. 294) would provide the following interpretation of the suspension procedure: "[T]he deposit currency, wholly overlooked in the law of 1844, soon began to make trouble. In 1847 . . . the 'Banking Department' . . . was confronted with a run . . . With the approval of the Government . . . it borrowed cash of the Issue Department. This cash was new money, specially manufactured for the purpose . . . This 'Suspension of the Bank Act' as it is misleadingly called . . . has been followed in subsequent crises. Its success has been so invariable that its essential nature has been little analyzed. It is a further step toward the 100% plan. Both the permanent set-up of the Issue Department and the emergency set-up of the Banking Department are plans to strengthen reserves, one reserve being gold (now Government paper) behind the Bank's note liabilities, the other reserve being notes behind the Bank's deposit liabilities." See also Fisher *et al.* (1939, pp. 34-36).

would have to wait for the "victory of the Bagehot principle" in the 1870s (Fetter 1965, p. 257). As Laidler (1991, p. 36) commented:

> [T]he 1850s and 1860s saw the slow but sure re-establishment of the predominance of the Banking School view that the Bank of England had a special position in the monetary system; and the publication of Bagehot's *Lombard Street* in 1873 completed the edifice of classical monetary economics with a theory of central banking.

However, if the *banking* functions exerted by the Banking Department now included *central banking* responsibilities, the dividing line with the *monetary functions* exerted by the Issue Department was maintained[52]. Or, to put it perhaps more appropriately, the division was maintained between the explicit and acknowledged money-issuing function performed by the Issue Department (insofar as paper money was concerned) and the implicit and less acknowledged money-issuing function still performed by the banking sector at large (insofar as cheque-book money was concerned), the latter being increasingly placed under the responsibility of the Banking Department, acting therefore in the dual role of (explicit) central bank and (implicit) monetary authority[53]. Despite the three temporary suspensions of the Act, at no point was the monetary system inherited from 1844 brought into question, nor was its obvious inconsistency resolved: the note-issuing monopoly of the Issue Department was *not* to be extended to the circulating medium as a whole. As Fetter (1965, p. 212) commented:

> From the point of view of modern banking theory and practice the case for treating all of the Bank's liabilities alike . . . is so strong that it is hard, without sensing the crosscurrents of opinion of the time, to understand why no change was made.[54]

He further added (*ibid.*, p. 224):

> The apparent understanding . . . that the question of the control of deposit banking was taboo resulted in a theoretical sterility in much of the discussion. The more firmly the

[52] As Diatkine and De Boyer (2008, p. 205) explain: "According to Bagehot, it was the Bank of England's Banking Department that was the lender of last resort, not its Issue Department. The lender of last resort would lend money exogenous to it – a loan of last resort did not equate to an issue of money". This, of course, did not preclude the important (but not always recognised) fact that, besides lending these exogenous notes, the Banking Department could also—like any other bank—issue monetary liabilities in the form of its own deposit balances (*ibid.*, p. 206).

[53] It should also be noted that, while the Issue Department remained tied to the 'currency principle' as a policy rule, the Banking Department remained free to use discretion in its operations. Laidler (1988, p. 98) specifies that "by the 1870s, it was accepted that suitable discretionary conduct on the part of the Bank of England, within the institutional framework created by that Act, was required to deal with cyclical problems".

[54] As Laidler (1988, p. 100n28) also commented: "Though the suppression of a competitive note issue, along with the maintenance of competition in deposit banking made sense in terms of Currency School doctrine, which attached undue significance to notes *per se*, it is hard to defend those writers such as Jevons who supported the Bank of England's note issue monopoly while simultaneously recognising the importance of competitively provided deposits in the circulating medium."

> Government stated the principle of the absolute right of the State over the note issue, the more completely it seemed to abdicate any claim to regulate, or even to ask for information about, deposits.

One possible answer to this puzzle, as we have suggested already, was the lack, in 19th century British discussions, of any conceptual distinction between deposits fulfilling a monetary function as compared with those fulfilling an investment function, a distinction which, as we saw, would be central to the 100% money proposals of the 1930s.

What was less clear with the 100% money proposals, however, was how this division of functions would result, at the top, in a distinction between the functions of a *monetary authority*, in charge of issuing money and regulating its supply, and those of a *central bank*, in charge of providing centralising and rediscounting facilities to the banks' *loan* departments and assisting them in case of emergency. Even if the total separation between the issuing and the lending of money were to result in greater stability, this would not necessarily do away with the case for centralising reserves—if only for consideration of economies of scale[55]—, nor would it necessarily obviate the need for a lender of last resort in case of runs on savings accounts. Fisher showed awareness of the latter consideration. Under his proposed plan, while the Currency Commission would be vested with a total money-issuing monopoly, the twelve U.S. Federal Reserve Banks would be maintained as *non-issuing* central banks—comparable, in some respect, to the 'post-Bagehot' Banking Department of the Bank of England. On the one hand, these Reserve Banks would serve as an intermediary between the Currency Commission and the banks' cheque departments for the administering of chequing accounts (Fisher [1935] 1945, pp. 61-65); on the other hand, they would provide the banks' loan departments with rediscounting facilities (Fisher [1935] 1945, pp. pp. 82-89, 141-142). And so could, possibly, the Currency Commission itself, even though it would, "if rediscounting were allowed at all, function chiefly as a safety valve in cases in which the banks could not themselves readily afford accommodation in sufficient volume or with sufficient promptness" (*ibid.*, p. 88, see also p. 202)[56]. Apart from Fisher, however, none of the other 100% money

[55] This aspect of the reasoning for a central bank, according to Laidler (1991, pp. 184-185), was missing from Bagehot's analysis, which gap was to be filled by Edgeworth's 'Mathematical theory of banking' (1888).

[56] Fisher ([1935] 1945, p. 89), however, preferred to have the monetary authority resort to open-market operations rather than rediscounting: "For myself, I would prefer not to endow the Currency Commission with any rediscount power whatever. We could accomplish substantially the same purpose simply by buying and selling Government bonds". He also made it clear that such central banking operations needed not interfere with monetary considerations. As he specified with respect to rediscounting: "evidently this would not necessarily require any increase in circulating medium; for as fast as the Currency Commission rediscounted, i.e. bought promissory notes, it could, if it wished, sell bonds. The buying of one and the selling of the other would offset each other so far as affecting the

authors offered any discussion of central banking functions as distinct from monetary authority functions[57].

Conclusion

The 19th century Currency School writers and the 100% money authors of the 1930s agreed on one major point: that the intermingling of the issuing of money and the lending of money was a major source of instability, imparting on bank-created money an inherently pro-cyclical behaviour (explained by the reciprocal causality, under such system, between bank money and prices). In their views, this required a separation of these two functions. The similarity between the two groups, however, does not go much further. The separation plan of the Currency School was motivated by an additional reason, entirely extraneous to the 100% plan *per se*: that of putting a specific policy rule, the 'currency principle', effectively into practice, by subjecting the monetary authority *itself* to a 100% marginal reserve requirement. The 100% money scheme, on the contrary, was put forward only as an *institutional* reform plan, independently from any specific *policy* consideration, and would *not* have required any kind of reserve requirement for the monetary authority itself. As a matter of fact, the 100% plan was primarily designed to *serve* monetary management, whatever monetary policy objective might be decided by Congress. Another major difference related to the scope of the respective reform plans: while the Currency School only sought to insulate the issuing of *bank notes* from the lending of money, the 100% money authors sought to insulate the circulating medium *as a whole* from loans. The 100% plan, however, did not consist in extending the separation of functions to 'deposits' in general. Its main innovation, in this regard, was to offer a distinction between two kinds of deposits: *chequing deposits*, serving as a means of payment, and *savings deposits*, serving as credit instruments. Only the former would be

---

volume of money is concerned. Thus, the compulsory exercise of its rediscount function need not interfere with its function of controlling the volume of money" (Fisher ([1935] 1945, p. 203n1). Obviously, a simpler solution than such sterilization operations would have been to split the Currency Commission itself into an Issue Department and a Lending (or Central Banking) Department; but Fisher did not make any such suggestion.

[57] Under the Chicago Plan, the Reserve Banks would be nationalised and charged, under supervision of the Federal Reserve Board, of the issuing of money (Simons *et al*. [1933] 1994, pp. 32-33)—thus fulfilling the role ascribed to the Currency Commission in Fisher's plan. Moreover, there would be no lending banks in their scheme (these being replaced, as we already mentioned, with investment trusts). Possibly for this reason, there was no discussion of central banking functions as distinct from monetary authority functions in their writings. Nor was there any such discussion by Currie, who further assumed (somewhat unrealistically) that no reserve would need to be kept behind savings deposits at all (see Currie [1934b] 1968, p. 199; [1938] 2004, pp. 360-361).

placed under the issuing monopoly of the monetary authority, while the latter would remain (except in the specific case of the Chicago Plan) at the free disposal of the banks. The lack of any similar distinction in the Currency School writings might help explain why these authors were never able to suggest any adequate treatment of deposits. The English Act of 1844 only dealt with bank notes, leaving deposit currency entirely dependent upon the banking business. It was thus all the more important that the Bank of England remain ready to exert central banking responsibility when needed, a role it would come to fully endorse by the 1870s. In contrast, under a 100% money system, the banks would be left with no money-issuing power whatsoever, and the central bank (as distinct from the monetary authority), would therefore exert no monetary (as distinct from banking) responsibility. All these reasons lead us to conclude that the 100% money proposal of the 1930s *cannot* simply be regarded as an avatar, extended to deposits, of the Currency School reform proposals as embodied in the English Act of 1844. Nor should the recently renewed interest in the 100% money idea merely be read, in our view, as a revival of the confrontation between the Currency School and the Banking School. It rather partakes to a reflection, not only on the causes of monetary and banking instability, but also on the ways in which the monetary system, whatever policy objective is to be pursued, could best be designed to serve monetary management.

Appendix 1. The monetary and banking systems under the respective Currency School and 100% money proposals

Figure 1. The English system under the Bank Charter Act of 1844 (embodying the Currency School proposals):

Royal Mint:

Free coinage of **metallic currency**

Issue Department of the Bank of England (BoE):

Assets	Liabilities
Government securities (in fixed amount) 100% marginal metallic reserve	**Bank notes**, to be *automatically regulated* by the variations in the metallic reserve ('currency principle')

Banks (including the Banking Department of the BoE):

Assets	Liabilities
(Fractional) reserves	Equity
Loans & investments	Deposits (including **transferable deposits**)[1]

The items underlined in bold indicate the locations of the power of creating means of payment. Under the English Act of 1844 (Figure 1), this power was shared between the Mint, the Issue Department of the Bank of England, and the banks (including the Banking Department of the Bank of England). Under Fisher's 100% money proposal (Figure 2), on the other hand, this power would be fully concentrated in the hands of the Currency Commission.

[1] To be more complete, Figure 1 should also include country bank notes, which, although increasingly restricted by legislation, still formed part of the monetary circulation at the time—as did bills of exchange and cheques, to the extent that they circulated by endorsement.

Figure 2. The proposed U.S. system according to Fisher's version of the 100% money proposal[2]:

Currency Commission (CC):

Assets	Liabilities
Government bonds	**Lawful money** (CC notes & deposits), to be *managed* according to a policy criterion (to be decided by Congress)

Banks[3]

Cheque department: Lawful money in custody		*Loan department:* Assets	*Loan department:* Liabilities
100% reserves in lawful money	Transferable ('chequing') deposits	(Fractional) reserves Loans & investments	Equity Non-transferable ('savings') deposits

[2] These balance sheets are adapted from the ones presented in Fisher's book (see Fisher [1935] 1945, pp. 63-67).

[3] Very similar balance sheets would apply to the twelve Federal Reserve Banks (FRBs), although Fisher did not specify whether they would themselves be divided into two departments. In his balance sheet illustration, "member bank deposits in Federal Reserve Banks" and "Federal Reserve notes" would be fully covered by reserves (implying that the former would consist in chequing deposits only), while the FRBs' other assets ("U.S. Securities", "Etc.") would be matched by "Capital, etc." (Fisher [1935] 1945, p. 63).

Chapter 3 – The 100% money proposal and its implications for banking: The Currie-Fisher approach versus the Chicago Plan approach*

Chapter's abstract

The literature on the 100% money proposal often reveals some confusion when it comes to its implications for the banking sphere. We argue that this can be partly explained by a failure to have distinguished between two divergent approaches to the proposal: the 'Currie-Fisher' (or 'transaction') approach, on the one hand, which would preserve banking; and the 'Chicago Plan' (or 'liquidity') approach, on the other hand, which would abolish banking. This division among 100% money proponents stemmed, in particular, from different definitions of money, and different explanations of monetary instability. The present paper attempts to clarify this divergence of views.

1. Introduction

The 100% money proposal has aroused renewed interest, following the 2007-8 global financial crisis and ensuing recession, as a potential solution to improve monetary control and stabilize the economy. Its advocates, viewing money creation out of bank loans as a major source of instability, would make all issuance of money (including chequing deposits) a monopoly privilege of the state. This proposal was first widely discussed in the context of the Great Depression of the 1930s, when it was supported by different authors, in various versions[1]. One was embodied in the so-called 'Chicago Plan' for banking reform, exposed in

* Ce chapitre a fait l'objet d'une publication sous forme d'article dans la revue *The European Journal of the History of Economic Thought*, 2018, 25:2, pp. 357-387 (Demeulemeester 2018) ; nous tenons à remercier les deux rapporteurs anonymes pour leurs commentaires adressés à cette occasion. Le papier avait auparavant été présenté, sous forme de versions préliminaires, lors de la 44e Conférence annuelle de l'*History of Economics Society*, en juin 2017 à l'Université de Toronto (Canada), ainsi que lors de la 6e Conférence bi-annuelle de l'*Asociación Latinoamericana de Historia del Pensamiento Económico* (ALAHPE), en novembre 2017 à l'Université *Los Andes* de Bogotá ; nous remercions Juan Carlos Acosta pour ses commentaires adressés à cette dernière occasion. Le papier a également bénéficié de commentaires (ou de discussions) de la part de Robert W. Dimand, Rebeca Gomez Betancourt, Laurent Le Maux, Ronnie J. Phillips, Roger Sandilands, et Adrien Vila ; nous tenons à remercier chacun d'eux. Toute erreur que contiendrait cet article nous est évidemment entièrement imputable.

[1] The idea that private banks should be prevented from creating money can be found in the writings of David Ricardo already, as well as in the Currency School arguments which led to the adoption of the English Bank Charter Act of 1844. All those writers, however, focused on the issuance of bank notes, without considering transferable bank deposits as money. The proposal for a 100% reserve requirement behind checking deposits appeared in the United States, in the mid-19th century, with

a series of memoranda co-authored by a group of Chicago economists in 1933[2] and, subsequently, in the writings of Henry Simons (from 1934). Other versions were designed, at that time, by Lauchlin Currie (from 1934), Irving Fisher (from 1935), or James Angell (1935), while several bills calling for a 100% money reform were introduced in the U.S. Congress in the 1930s and 1940s. The proposal was later advocated by Maurice Allais (from 1947), Milton Friedman (from 1948), James Tobin (from 1985) and Hyman Minsky (from 1994), and has kept appearing in new versions up till today[3]. The history of all these reform plans has been well documented, particularly in a book by Ronnie J. Phillips (1995)[4]. The concept of 100% money, however, still requires clarification, especially when it comes to its implications for the banking sphere—as was revealed, for example, by a review of Phillips's book by Schiming (1996, p. 265). The recent literature on the subject, in particular, shows a great deal of confusion in that respect. We argue that this is partly due to a failure to have distinguished between two divergent approaches to the proposal, insofar as banking activity—defined here as the activity of financing loans and investments out of collected deposits[5]—was concerned. Two groups of authors can indeed be distinguished, who, beyond their points of agreement, adopted opposite conclusions on this specific issue. The first group, following the views of Lauchlin Currie and Irving Fisher, supported a 100% money proposal which would leave the proper banking sphere largely untouched—banks would remain free to perform financial

---

authors such as Charles H. Carroll (see Mints 1945, pp. 154-6). Léon Walras, in 1898, also suggested that all checking accounts be kept in a central "Transfer Bank" ["*Banque de virements*"], with 100% reserves behind them, so that "monetary circulation would not be disturbed by the arrangements of credit" [*"que la circulation monétaire ne soit pas troublée par les combinaisons du crédit"*] (Walras [1898a] 1898b, pp. 376, 395, my translation). Early 20th century advocates of 100% reserves included Frederick Soddy ([1926] 1933, pp. 229-31), whose proposal, based on a 'fiat' currency, might have influenced the Chicago Plan directly (Phillips 1995, p. 46).

[2] This group included Garfield Cox, Aaron Director, Paul Douglas, Frank Knight, Albert G. Hart, Lloyd Mints, Henry Schultz, and Henry Simons. They circulated three memoranda in 1933 (see Phillips 1995, pp. 47-68): the first in March (Knight *et al.* [1933] 1995), the second—a revised version of the first by Simons—in April (unpublished), and the third—mainly the work of Simons—in November (Simons *et al.* [1933] 1994). As noted by David Laidler (1999, p. 231), the term 'Chicago Plan' was coined by Hart (1935), whereas '100% money' was Fisher's phrasing.

[3] See, for example, Huber and Robertson (2000), Kotlikoff (2010), Benes and Kumhof (2012), Jackson and Dyson (2013), Sigurjónsson (2015), Levitin (2016), or Huber (2017). Patrizio Lainà (2015) has recently provided a historical overview of what he terms "full-reserve banking proposals".

[4] One can also refer to Phillips (1988) and Whalen (1994) for discussions about the Chicago Plan; to Sandilands (2004) about Currie's plan; and to Allen (1993), Dimand (1993b) and Barber et al. (1997, Vol. 11, editorial content) about Fisher's plan.

[5] 'Banking' could be more properly defined as consisting of two sets of activities, one related to the administration of the payment system (deposit-keeping and transferring), the other to the intermediation between savers-depositors and investors-borrowers (deposit-lending). In this paper, however, we tend to use the term to refer to this latter activity specifically.

intermediation by collecting and lending out savings deposits. The second group, following the views of the Chicago Plan, called for a drastic transformation, if not the complete abolition, of banking—banks would be replaced, in their intermediation function, by equity-financed institutions such as investment trusts. These diverging attitudes, as we will see, mainly stemmed from different definitions of money and different explanations of monetary instability. The conflict between the two approaches, however, has not been clearly identified and discussed in the literature. Although Phillips was aware of these differences, he chose not to look into them in his book:

> Though both Fisher and the Chicago economists would be classified as adherents to the Quantity Theory of Money (QTM), they had differences of interpretation. A careful analysis of the respective interpretations would undoubtedly provide insight into their differences over stabilization schemes. Because it goes beyond the intent of the present study, comparisons of their views will be restricted to correspondence between Fisher and Simons . . ., and no attempt to compare and contrast their somewhat different versions of the QTM will be attempted. (Phillips, 1995, p. 206)

The purpose of the present paper is precisely to take over Phillips's work on this question, and elucidate the confrontation between those two approaches to the 100% money proposal—which we call the 'Currie-Fisher approach' (or 'transaction approach') on the one hand, and the 'Chicago Plan approach' (or 'liquidity approach') on the other hand. To this end, after having presented the common features of the two approaches, we will study their divergences on three different levels: the definition of money, the explanation of monetary instability, and the treatment of banking[6]. Finally, we will see how the lack of distinction between the two approaches in the literature has led to recurrent misconceptions about the 100% money proposal, including in the most recent and still ongoing discussions of the idea[7].

2. Common features of the two approaches

2.1. The creation of means of payment out of banking activity viewed as a major factor of economic instability

All 100% money proponents shared a major criticism of the existing monetary system, in which bank promises to pay (deposits), covered only fractionally by reserves in lawful money, were used as means of payment. Such a system, they said, was inherently unstable:

[6] One can refer to Table 5, in the concluding section, for a summary of these divergences.

[7] These divergences between the 'transaction' and 'liquidity' approaches can also be found in the proposals for 'narrow banking' which appeared in the 1980s (see, for example, Litan 1987).

the expansion of bank loans would lead to excessive money creation in the upswing phase of business, producing a boom, while their contraction would lead to excessive money destruction in the downswing phase, producing a depression. The situation could then be further aggravated by bank failures, as the great monetary contraction of 1929-33 illustrated. Of course, as those authors generally conceded, booms and depressions could theoretically be prevented if adequate countercyclical action was taken by the monetary authority. But such action, in the existing system, was particularly uneasy as it always had to be exercised 'against the wind'. Moreover, even if successful, it would come at the price of a manipulation of the rate of interest by the central bank, which, it was argued, could cause severe market disturbances. For these reasons, the 100% money proponents recommended a drastic change of the monetary system.

2.2 A 100% reserve requirement on bank deposits subject to check

As summarized by Fisher ([1935] 1945, p. xvii[8]), "[t]he essence of the 100% plan is to make money independent of loans; that is, to divorce the process of creating and destroying money from the business of banking". The core of the reform, common to both approaches, was to require the banks to keep 100% reserves in lawful money behind their deposits subject to check, fulfilling a payment function. These transferable deposits would be kept in a check department, or check bank, which would act as a mere 'warehouse' for funds, providing their depositors with payment facilities. In no case could these funds be used by the bank to finance loans or investments. This provision, beyond allowing direct control over the volume of checking deposits by the monetary authority, would offer the additional advantage of securing the payment system from bank runs. As to the question of how the administration of checking accounts should be remunerated, various options were suggested, such as applying service charges to account holders, subsidizing the banks, or transferring this activity to public agencies, like the postal savings system or even the central bank itself[9]. But apart from these technical (though important) considerations, all versions of the proposal agreed on the treatment to be given to checking deposits. They disagreed sharply, however, on the treatment to be given to savings deposits, fulfilling an investment function—as we will see in section 5.

[8] The page numbers of the original edition are reproduced at the top of the pages of the 1997 re-edition by Barber et al. (1997, Vol. 11).

[9] For discussions regarding the implementation of the 100% money proposal under its various versions, one can refer, for example, to Hart (1935), Watkins (1938) or G.R. Barber (1973).

At any rate, financial intermediation would remain a prerogative of the private sphere, as avoiding the nationalization of banks was a motivation common to all versions of the plan[10].

2.3 A monetary authority responsible for all money issuance

Under all 100% (fiat) money proposals[11], the function of creating or destroying money would become an exclusive privilege of the state[12]. This would apply to all means of payment, including checking deposits, as the latter would be fully covered by reserves in lawful money. The money supply, under most proposals, would be regulated by an independent monetary authority, subject to a rule of objective to be adopted by Congress (such as a price-level stabilization rule). Some proposals would submit the monetary authority not only to a rule of objective, but also to an automatic rule of action, while others insisted that it should be awarded discretionary powers of implementation. Discussing these questions of monetary policy, however, is beyond the scope of this paper. As for the practical modalities of money injection, most proposals recommended that the monetary authority regulate the volume of money exclusively by buying or selling government securities in the open market. These securities could be either existing bonds, or new bonds issued by the Treasury[13]. In the latter case, the new money might be spent directly by the government, credited to taxpayer accounts, or even distributed to citizens in the form of a social dividend. Under most plans, the discount window would be abolished. Again, discussing these modalities is beyond the scope of our present study.

---

[10] For Fisher (as for Simons), the stakes were even higher: "[t]he best available safeguard against the overthrow of capitalism is the 100% system, combined with money management, to give us a stable dollar. Of all people, bankers should, therefore, favor this proposal if only in self-defense. Otherwise, by the irony of fate, they may someday be the ones to upset capitalism" (Fisher [1935] 1945, p. 219).

[11] Those should be distinguished, however, from the 100% gold reserve proposals, which have been developed by economists of the Austrian school in particular—see, for example, Ludwig von Mises ([1912] 1953, p. 408) or Murray Rothbard (1962a). One can refer to Jesús Huerta de Soto ([1998] 2012, pp. 715-35) for a historical overview of the 100% gold reserve theory—which, although its analysis of economic instability is most interesting, falls outside the scope of this paper.

[12] The 100% money idea should not, either, be confused with the 'modern monetary theory' (MMT) expounded by authors such as L. Randall Wray ([2012] 2015). Indeed, while stressing the monetary role played by the state, MMT insists that the banks should remain involved in money creation too.

[13] Because the state, via its monetary authority, would be buying its own bonds, it was usually argued that the public debt would not be aggravated—and could even be reduced—by money injections.

3. Divergences about the definition of money

3.1 The Currie-Fisher approach: Money as means of payment, and only means of payment

The first point of divergence among the authors discussed in this paper concerns the very concept of money itself. Currie and Fisher, in their advocacy of the 100% money proposal, used a strict definition of money, the perimeter of which was clearly delimited. They basically included in the money supply *all* means of payment, and *only* means of payment.

These two authors first questioned the narrow perimeter of the traditional definition, limited to "what is generally acceptable for goods", as Fisher himself used to describe money in earlier writings ([1911] 1913, p. 8). Under the new definition he provided, the adjective 'generally' was replaced by 'commonly':

> Money is any form of property which is commonly used as a means of exchange for other forms of property—in short, as a means of payment. It includes the ordinary "pocket-book money" and also what may be called "check-book money". (Fisher, 1947, p. 1)[14]

Currie, dedicating a whole book chapter to defining the concept of money, argued in the same direction: "[t]he words 'generally acceptable' exclude any instruments acceptable only in particular circumstances, such as debt due an individual by a banker which may be transferred by order of the individual" (Currie [1934a] 1968, p. 10). He thus proposed to widen the meaning of the term, "so as to make it synonymous with means of payment" (*ibid.*). He went on to stress the character of money as a debt-paying instrument:

> [T]he distinguishing characteristic of money [is] the power of settling transactions. . . . Our definition of money, then, is those instruments possessed by the public by delivery of which debt contracts and price contracts are discharged. (Currie [1934a] 1968, p. 11)

As for the cash and the central bank deposits that were held by the banks, Currie noted that, "strictly speaking", they "constitute[d] means of payment" (*ibid.*, p. 13). However, insofar as they were used as reserves behind checking deposits, they should be excluded from the money supply compilation, because including both those deposits and the reserves backing them "would obviously involve double counting" (*ibid.*, p. 12). Hence, if we extrapolate from

[14] This definition was implicitly contained, but not explicitly formulated, in his book *100% Money*.

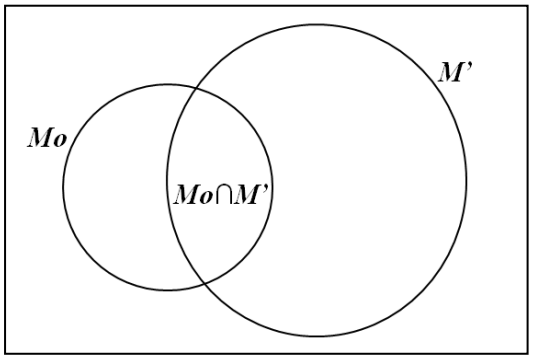
Currie's logic, the total money supply (M) could be regarded as the union of two sets of means of payment, lawful (or 'base') money (Mo) and bank money (M')[15], such as:

$$M = Mo \cup M' \tag{1}$$

This is illustrated in Figure 1. The intersection of the two sets ($Mo \cap M'$) would represent the part of bank money covered by reserves in lawful money[16]. Those units should only be counted once in the money supply, to avoid double counting. The total number of monetary units would thus be equal to:

$$|M| = |Mo \cup M'| = |Mo| + |M'| - |Mo \cap M'| \tag{2}$$

Figure 1 The total volume of means of payment under the fractional-reserve money system



However, although they virtually included all means of payment in their definition of money, Currie and Fisher categorically refused to include assets that could not directly fulfil this payment function, even those presenting the highest level of liquidity. Savings deposits, in particular, even if available 'on demand', were not regarded as money. According to Currie:

> It is claimed, and quite rightly, that banks practically never invoke the privilege of postponing payment of time deposits and that therefore they are, in effect, actually payable on demand. From this fact certain writers have been led to the conclusion that time deposits, from the point of view of their owners, may be regarded as the equivalent of cash. There is, however, an important distinction between means of payment and what may be regarded by individuals as *equivalent* to means of payment. Time deposits, in this respect, do not differ essentially from holdings of government securities, call loans, or, indeed, any property possessing good marketability which by sale can be converted into means of payment. (Currie [1934a] 1968, p. 14, original italics)

[15] For the sake of simplification, we limit our analysis here to those two kinds of money. Historically, however, other instruments have been used as means of payment, such as various kinds of commodities, commercial paper, shares of money market mutual funds, or, more recently, cryptocurrencies.

[16] This quantity of reserves used by the banks to cover their checking deposits (equal to $Mo \cap M'$), however, does not represent the totality of bank reserves, insofar as part of those are kept for other purposes—for example, as reserves behind savings deposits, or for the banks' own transaction needs.

He went on:

> If we are to include with means of payment all factors which contribute to economy of means of payment, it is difficult to see where we should stop, and the concept of money would become so broad as to be useless. (*ibid.*, p. 18)

Fisher developed a similar analysis:

> It can scarcely be too much emphasized that a savings deposit, without the checking privilege, is vitally different from a checking deposit. . . . A savings deposit ought not to be called a deposit at all. It is not money, and is not ordinarily used as money. It is merely a 'quick asset' like a Liberty Bond which can be more readily sold than ordinary assets. (Fisher [1935] 1945, pp. 168-9)

Both authors, therefore, held a strictly delimited concept of money.

3.2 The Chicago Plan approach: The concept of money extended to liquid assets

In contrast to Currie and Fisher, the authors of the Chicago Plan rejected any definition of money as limited to means of payment. Simons severely criticized Currie on this point, in a review of the latter's book:

> On several crucial points. . . . Dr. Currie's position is, to the reviewer, highly unsatisfactory. He contends that only actually circulating media should be regarded as money. (Simons, 1935, p. 556)

Simons, however, did not provide any alternative definition of his own. He seemed to extend the concept of money to whatever assets that were easily convertible into means of payment, like savings deposits, but with no clear boundary to be drawn:

> At all events, it seems likely that we shall make substantial progress . . . only by facing squarely the task of working with that concept of money which Currie describes as "so broad as to be useless". . . . We must see that there is little significant difference between demand deposits and savings accounts, and that all institutional borrowing and lending at short term presents the same problems and anomalies as does deposit banking. The criterion of "effective circulation", like legal tender and "general acceptability", must not be taken too seriously. (Simons 1935, p. 557)

Other 100% money proponents, such as Angell (1935, p. 2) and Friedman ([1960] 1992, pp. 90-1), also included savings deposits in their broad concept of the money supply. So did Maurice Allais, who held a position close to that of Simons:

> In my view . . . the quantity of money held by an operator is the portion of his assets he rightly or wrongly believes he can use to make his payments immediately and without restriction. (Allais 1987, p. 502; see also 1975, pp. 120-1)

He went on to extend his concept of money to a very wide range of assets:

> Creation of money is not limited to the uncovered portion of demand-deposits; a share of time deposits also enters the process. . . . Similar remarks can, of course, be made about the other assets held by operators, ranging from treasury bills (almost fully liquid) to real estate (perhaps the most

> illiquid form of all). To each may be ascribed a substitutability ratio defining its ability to be considered as potential cash balances. (Allais 1987, pp. 507-8)[17]

Allais recognized, however, that so broad a definition complicated the calculation of the money supply: "From this standpoint the money supply M is largely a *psychological* concept, and, therefore, seems to escape objective evaluation" (*ibid.*, p. 509, original italics). The issue raised by Currie, of deciding where to stop once one started to include liquid assets into the money supply, was thus left unsolved under this approach.

4. Divergences about the leading causes of monetary instability

4.1 The Currie-Fisher approach: The creation of means of payments through banking as the one leading factor of monetary instability

All proponents of the 100% money reform, as we mentioned earlier, viewed the dependence of the medium of exchange upon banking activity as a source of inherent economic instability[18]. Such dependence, they argued, tended to produce either a cumulative expansion or a cumulative contraction of the money supply, which, unless counteracted, would lead to alternations of booms and depressions. Thus, according to the Chicago economists:

> [Such a system] gives us an unreliable and unhomogeneous medium; and it gives us a regulation or manipulation of currency which is totally perverse. Money is created when it should be destroyed, and destroyed when it should be created. (Simons *et al*. [1933] 1994, p. 31)

Fisher described the cumulative processes affecting the money supply in the following terms:

> [The tie between money and debt] causes the banks, by means of business debts, to keep everlastingly tinkering with our currency and so causes unnatural inflations and unnatural

---

[17] Allais thus defined the money supply as: $M(t) = M_1(t)+\int_t^{\theta} \sigma^*(t, \theta)p^*(t, \theta)d\theta + \sum_i \sigma_i(t)q_i(t)$, "where $M_1(t)$ is the volume at time t of the basic money in circulation *outside the banking system* plus demand deposits *held by private individuals*; $p^*(t, \theta)d\theta$ is the volume of time deposits at time t whose term lies between θ and θ+dθ; σ^*(t, θ) is the average of the corresponding substitutability ratio, and the $q_i(t)$ are assets other than deposits at time t with rates of substitutability against cash of $\sigma_i(t)$" (Allais 1987, pp. 508-9, original italics; see also 1975, p. 126).

[18] With the exception, however, of Milton Friedman, whose arguments for 100% reserves fell under neither of the two approaches discussed in this paper. Friedman assigned the "inherent instability" of the fractional-reserve monetary system only to the "decisions by holders of money about the form in which they want[ed] to hold money and by banks about the structure of their assets" ([1960] 1992, p. 66). He further criticised that system for "involv[ing] extensive governmental intervention into lending and investing activities" (*ibid.*). But he was not specifically opposed to the creation of money out of bank loans. Indeed, alternatively to 100% reserves, he was ready to consider completely opposite solutions: either to allow the banks "to issue currency as well as deposits" (*ibid.*, pp. 68-9), or "to permit 'free' deposit banking, without any requirements about reserves" (*ibid.*, p. 108).

> deflations. For, under the 10% system[19] it is true, as we have seen, that an increase in business, by increasing commercial bank loans, and so increasing the circulating medium, tends to raise the price level. And, as soon as the price level rises, profits are increased and so business is expanded further. Thus comes a vicious circle in which business expansion and price expansion act each to boost the other—making a "boom". Reversely if business recedes, loans and prices also recede, which reduces profits and so reduces business volume—again causing a vicious circle, making a "depression". (Fisher [1935] 1945, pp. 180-1)

By calling *P* the general level of prices[20], *D* the volume of bank loans (debt), and *M'* the total of bank money, we could summarize these cumulative processes in the following way:

In the boom phase: $\uparrow P \rightarrow \uparrow D \rightarrow \uparrow M' \rightarrow \uparrow P$, and so on.

In the depression phase: $\downarrow P \rightarrow \downarrow D \rightarrow \downarrow M' \rightarrow \downarrow P$, and so on.

Hence, with such chain reactions, the causality between variations in *M* and variations in *P* appeared to be reciprocal, "with new money raising prices and rising prices conjuring up new money" (Fisher *et al.* 1939, p. 4). It also followed, from this analysis, that the reserve-deposit ratio (and, more generally, the *Mo/M'* ratio[21]) would never be constant; it would tend to decrease in boom phases, and to increase in depression phases. This would make the control of the total money supply by the monetary authority very challenging, as Currie noted:

> [I]t is possible to generalize that on the upswing of the business cycle the supply of money automatically tends to expand, and on the downswing to contract. The automatic forces, in other words, tend on balance to operate against the customary central bank policy, thus rendering the task of control more difficult. In so far as this is true we may say that the supply of money under the Federal Reserve System displays a perverse elasticity. (Currie [1934a] 1968, p. 131)

For all these authors, the problem needed to be tackled at source. The tie between *D* and *M'* had to be severed, so that the chain of reactions described above could no longer develop into cumulative processes. This required divorcing the creation and destruction of checking deposits (*M'*) from the extension and contraction of bank loans (*D*), by subjecting these deposits to a 100% reserve requirement (see section 5). Beyond this point of consensus, however, a divergence would appear among the 100% money proponents. For the Chicago Plan economists, the tie between *D* and *M'* only represented one major factor of instability, but another factor of equal importance—the tie between *D* and *V* (the velocity of 'effective

[19] Fisher referred to the fractional-reserve money system as the '10% system', in contrast with the '100% system' he was calling for.

[20] With *P* here representing *all* prices (including, for example, asset or house prices), although, in practice, Fisher usually recommended the use of "a fixed index of the cost of living" as a criterion of stability (Fisher [1935] 1945, p. 97).

[21] The constant instability of this ratio had been noted by Fisher in 1911 already ([1911] 1913, pp. 55-73).

money')—still had to be dealt with (see section 4.2). For Currie and Fisher, on the contrary, the creation of means of payment through banking represented the one *leading* cause of monetary instability, which alone they endeavoured to tackle.

Of course, both Currie and Fisher were aware that other factors came into play in causing business cycles. Fisher thus listed nine variables explaining booms and depressions, which tended to interact with one another: "debts, the volume of circulating medium, its velocity of circulation, price levels, net worths, profits, trade, business confidence, interest rates" (Fisher [1935] 1945, pp. 121-3). But he assigned a leading role, above all, to the variations of *M'*, insisting that, in the case of a depression, "practically *all the events listed occur[ed] through* a contraction of check-book money" (*ibid.*, p. 123, original italics). In sharp contrast with Simons (see section 4.2), Fisher was not obsessed with the risk of variations in the velocity of money (*V*). He certainly recognized that such variations could be an important factor of disturbances, when large hoarding or dishoarding movements took place. The banking crises of the early 1930s, after all, had largely been the results of runs on savings or time deposits, which were not subject to check (Fisher [1935] 1945, p. 167). But, according to him, "the runs on savings banks usually follow[ed] contraction of the medium of exchange and the appreciation of the dollar", and, "given stability of the dollar, runs on savings banks would be extremely rare" (*ibid.*, pp. 166, 170). In other words, the changes in *V* tended to follow and aggravate the disturbances occasioned by the changes in *M*, rather than to cause those disturbances in the first place[22]. Fisher thus seemed to consider that major banking crises could not happen independently from monetary crises. Of course, sudden shifts in desired money holdings, even if less severe, could still occur under a 100% system. But even in this case, he argued, variations of *V* could always be compensated by adequate variations of *M*:

> [Under the 100% system], the velocity of circulation might still be subject to various untoward disturbances. For instance, after a period of over-indebtedness and speculation, there might still be a stampede of distress selling and therefore increased hoarding; that is, there might be a slowing of

[22] On this point, Fisher's position would find support in empirical works. Clark Warburton, studying velocity changes over the period 1919-47, concluded: "Factual information for the period since 1919 does not support the assumption that variations in monetary velocity are an initial factor in business depression. The data do, however, indicate that in some cases a declining velocity of money has accompanied and in other cases has followed downward deviations from trend in the quantity of money. In fact, after a business recession has run for a time and the quantity of money has been reduced, there is almost uniformly a slowing down in velocity, relative to trend, which is reversed only when the shrinkage in the money supply is known, or believed, to have been stopped. There is no evidence that disturbances to economic equilibrium originate in an erratic rate of use of money, but there is much evidence that such disturbances result in, and are in turn intensified by, variations from trend in the rate of use of money" (Warburton 1949, p. 91). Milton Friedman and Anna Schwartz (1963, p. 682), studying the period 1867-1960, reached convergent conclusions.

> velocity. The effect of this on the price level, however, would be much smaller than if the volume of circulation were also affected; and even the velocity effect on the price level could probably be offset by a suitable increase in volume. (Fisher [1935] 1945, p. 102)

Such "suitable increase in volume", moreover, could be achieved much more easily under the 100% system than under the present bank-money system (*ibid.*, p. 108)[23]. On all these matters, Currie's analysis appeared to be close to Fisher's (see Currie [1934a] 1968, p. 143).

It follows from these authors' viewpoint that, if one could prevent the sharp variations in the volume of checking deposits from happening, then sharp variations in the volume of savings deposits would also, most likely, be prevented. This explains why, as we will see in section 5, savings deposits would not be affected under Currie's and Fisher's reform plans. The full coverage of checking deposits would suffice, by itself, to mitigate—if not to abolish—the "*great* booms and depressions", Fisher argued ([1935] 1945, p. 151, original italics). This conclusion was not shared, however, by the authors of the Chicago Plan.

4.2 The Chicago Plan approach: The creation of liquidity through banking as another leading factor of monetary instability

The Chicago Plan authors, as we have seen, similarly held the view that the creation of means of payment out of bank loans led to cumulative maladjustments in the money supply. Contrary to Currie and Fisher, however, they also attributed a leading role, and not simply an aggravating one, to the variations of the velocity of 'effective money' in causing business cycles. In their November 1933 memorandum, they thus insisted that "monetary changes merely on the velocity side might produce substantial cyclical fluctuations" (Simons *et al.* [1933] 1994, p. 42)[24]. To illustrate this fact, the Chicago economists started their explanation of cumulative processes by focusing solely on the link between debt and velocity:

> [A]ny general change in business earnings will affect promptly the speculative temper of the community. Larger profits breed optimism; they stimulate investment and induce dishoarding . . . Producers will become more anxious to borrow . . . Lenders will have fewer misgivings about the

[23] Fisher insisted that some discretionary powers of action should be left to the monetary authority, allowing it to successfully stabilise the general price level (Fisher [1935] 1945, p. 24). He thus advocated what we would call today a 'constrained discretion' for the Currency Commission.

[24] However, there did not seem to be a complete consensus among the authors on this point, as the following passage indicates: "some of us are inclined to feel that the disturbances occasioned merely by changes of velocity are unlikely to be of serious magnitude" (Simons *et al.* [1933] 1994, p. 42). Friedman (1967, p. 12) would also disagree with Simons on this issue: "The movements in velocity—which Simons took as an independent source of instability—come later than the movements in the quantity of money and are mild when the movements in the quantity of money are mild. They have been sharp only when there have been sharp movements in the quantity of money".

> ability of borrowers to repay. People generally will increase their lending and investment at the expense of their idle reserves of cash. In a word, the velocity of circulation will increase. But this change, in turn, means a larger volume of business and higher product-prices, and thus still larger earnings. The further increase of earnings, moreover, will induce further increase in the velocity of money. And so on and on. . . (Simons *et al.* [1933] 1994, p. 46)

This chain of reactions, involving business earnings (π), debt (D) and the velocity of the circulating media (V), may be summarized in the following way:

In the boom phase: $\uparrow\pi \rightarrow \uparrow D \rightarrow \uparrow V \rightarrow \uparrow\pi$, and so on.

In the depression phase: $\downarrow\pi \rightarrow \downarrow D \rightarrow \downarrow V \rightarrow \downarrow\pi$, and so on.

Hence, according to the Chicago Plan authors, business cycles could develop even without any change in the volume of means of payment: "So far. . . [w]e have impliedly assumed an economy with a fixed (or independently variable) quantity of effective money" (*ibid.*, p. 46). Only then did they introduce the creation and destruction of means of payments through banking in their analysis, describing the following cumulative processes (*ibid.*, p. 47):

In the boom phase: $\uparrow\pi \rightarrow \uparrow D \rightarrow \uparrow M' \rightarrow \uparrow\pi$, and so on.

In the depression phase: $\downarrow\pi \rightarrow \downarrow D \rightarrow \downarrow M' \rightarrow \downarrow\pi$, and so on.

Thus, while in the Currie-Fisher analysis, the link between D and M was given precedence over the link between D and V, the Chicago Plan authors seemed to put both links on the same footing. They turned their attention, therefore, to what they considered a chief cause of exacerbation of the changes in V: the creation of liquid assets (or 'near monies') by the banks, in the form of savings deposits not subject to check. Through the means of saving deposits, indeed, the banks could, at the same time, provide their savers-depositors with assets claimable at short term and at a fixed nominal value, and finance loans and investments of a longer term and a riskier nature. This double transformation of risks and maturities enabled the banks to attract idle savings, thereby increasing V. But this also meant, in return, that V would sharply fall, should these claims be massively exercised at once. This led the Chicago economists, and Simons in particular, to put into question the very essence of banking:

> There is likely to be extreme economic instability under any financial system *where the same funds are made to serve at once as investment funds for industry and trade and as the liquid cash reserves of individuals*. (Simons [1934] 1948, p. 320, original italics)

> What matters is the character of the financial structure which banking creates—and the fact that, in the very nature of the system, banks will flood the economy with money-substitutes during booms and precipitate futile efforts at general liquidation afterward. (Simons 1936, pp. 9-10)

The condemnation of the creation of liquidity by banks, through their performing of risk and maturity transformation, was implicitly contained in all the schemes which called for the "abolition of deposit banking" (Simons *et al.* [1933] 1994, p. 32), and the replacement of banks, as lending institutions, by equity-financed investment trusts (see section 5.2). Such analysis obviously underlay the Chicago Plan memoranda of 1933. Other writers, globally sharing this approach, would condemn more explicitly either the practice of maturity transformation (Allais 1987, p. 508), or of risk transformation (Minsky 1994, p. 20)[25]. In contrast to Currie and Fisher, all those authors held, in common, the view that banking would still represent a source of systemic risk, even though banks' fractionally-covered deposits would be denied the possibility of circulating as means of payment.

From 1934, however, Simons developed a somewhat different explanation of economic instability, which led him to advocate still more radical proposals. While he kept condemning the creation of liquidity by banks working with savings deposits, he now argued that "[a] major source of instability [was] also to be found in the widespread practice of borrowing at short term" (Simons [1934] 1948, p. 320). He further made it clear that, in his view, financial instability did not ensue so much from the practice of maturity transformation (borrowing short and lending long) as it did from the mere short-term duration of debt contracts (borrowing short and/or lending short)[26]:

> Anyone who is not something of an economist can see that banks, acquiring funds subject to call, should lend only upon promise of early repayment; but the notion, while plausible, is entirely spurious. Indeed, the adherence to this cardinal rule of conservative lending serves (would serve), not to mitigate the affliction of banking, but to compound it; for banks thus increase the volume of short-term debts, not merely in acquiring funds, but in lending them as well. (Simons 1936, p. 10)

This analysis, which appeared to be very specific to Simons, eventually led him to suggest the abolition of all kinds of debt contracts, as we will see in section 5.2.

[25] According to Charles J. Whalen (1988, p. 541), "the cycle theories of Minsky and Simons share a number of essential features", even though they are "not identical". One difference is that "[u]nlike Simons, Minsky expresses his analysis without reference to the equation of exchange" (*ibid.*, p. 536).

[26] This evolution of Simons's analysis seems to have escaped Friedman, who regarded "[w]idespread borrowing on short-term in order to finance long-term obligations" as the "key to instability" in Simons's view (Friedman 1967, p. 5).

5. Divergences about banking reform

5.1 The Currie-Fisher approach: Keeping (fractional-reserve) banking

The common denominator of all 100% money proposals, as we saw in section 2.2, was to divorce the creation and destruction of means of payment from the business of banking, by imposing a 100% reserve requirement on bank deposits subject to check. This one measure, it can be argued, would not amount to altering banking practices, but, rather, to changing the *social convention* deciding what was acceptable or not as a medium of exchange. It was proposed that only lawful money, issued and controlled by the state, could be used as means of payment—or banks' promises to pay (deposits), provided that they were fully covered by reserves in lawful money[27]. This is summarized in Table 1.

Table 1 The 100% money reform as a change of the monetary social convention

Existing social convention	Proposed new social convention
Both lawful money and banks' promises to pay (in the form of demand deposits) can be accepted as means of payment	Only lawful money (or banks' promises to pay covered at 100% by lawful money) can be accepted as means of payment

For the Chicago Plan economists, as we will see in section 5.2, such reform would only be a first step to regain control over the whole creation of 'money' as broadly defined. But, for Currie and Fisher, who defined money as synonymous with the means of payment, this change of social convention would be sufficient, by itself, to render the money supply entirely exogenous: the total volume of money (*M*) would become equal to the volume of lawful money (*Mo*), as the part of bank money (*M'*) covered by reserves would be raised to 100%[28].

[27] Of course, there were certainly very good reasons why, historically, promises to pay (issued either by banks or businesses) came to be used as means of payment—if only, to bring elasticity to the volume of money, which a metallic currency was ill-suited to provide. It follows that a major challenge for the monetary authority, under a 100% money system, would be to adjust the money supply flexibly enough to the volume of transactions. Otherwise, economic agents might be pressured to break the law and devise alternative means of payment. Discussing this essential issue, however, is beyond the scope of our present study.

[28] The distinction between *Mo* and *M'* could even completely vanish, if all checking accounts were held on the books of the central bank directly—leaving place to a simple identity: $M \equiv Mo$. This was suggested by George Tolley (1962, pp. 299-300): "Let the deposit liabilities of the commercial banks be transferred to the Federal Reserve banks. If 'reserves' are defined in the usual way, Federal Reserve liabilities connected with deposit money, there would be 100 per cent reserves in the sense that deposit money and reserves would be identical. The physical arrangements in the use of money could be continued as at present, located in the commercial banks with servicing expenses paid for on a contract basis by the Federal Reserve banks." Many of the most recent 100% money proposals have adopted this suggestion, although with differing practical arrangements.

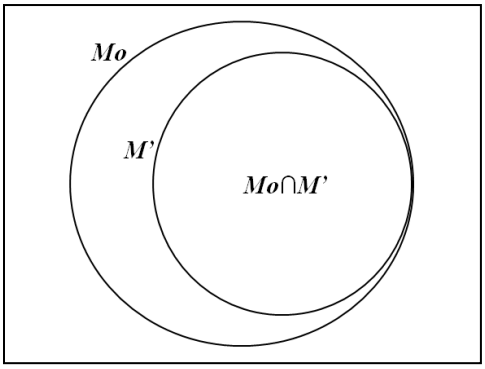
The following equalities would, under the Currie-Fisher approach, express the 100% money condition (as illustrated in Figure 2):

$$Mo \cap M' = M' \tag{3}$$

$$\boldsymbol{M} = Mo \cup M' = \boldsymbol{Mo} \tag{4}$$

$$|\boldsymbol{M}| = |Mo \cup M'| = |Mo| + |M'| - |Mo \cap M'| = |\boldsymbol{Mo}| \tag{5}$$

Figure 2 The total volume of means of payment under the 100% money system



The banks, under this approach, would remain perfectly free to issue and multiply promises to pay beyond their cash reserves, as long as those promises were not allowed to circulate as means of payment:

> Of course the volume of loans can exceed the volume of money just as sales do. The same money can negotiate one loan after another just as it can negotiate one sale after another. It can even come back to the same savings bank and be relent. So long as the loans are made out of real money and not out of money manufactured by the lender, for the purpose, they will not violate the principles of the 100% system. (Fisher [1935] 1945, p. 90)

Thus, Currie insisted, "[b]ankers will continue to be concerned with what they have always considered their chief function, the making of loans" ([1934b] 1968, p. 222). Fisher affirmed, in the same vein: "[a]ll I would do is to take over the *monetary* work of banks, leaving real banking to bankers" (Fisher 1934b, p. 157, original italics; see also [1935] 1945, p. 202). By this 'monetary work', Currie and Fisher implied the *creation of means of payment*, which, in their view, should be a prerogative of the state (Currie [1934a] 1968, p. 152; Fisher [1935] 1945, p. 19). They did not, however, aim to restrain the *circulation* of these means of payment by the banks, or the creation of *liquid assets* in the form of savings deposits, as long as those were not subject to check[29]. Because they did not consider the variations of *V* to play a

[29] As one could have expected, the proposal was understood quite differently by the bankers in general, although several of them endorsed the plan. As Robert Dimand (1993b, p. 70) reported: "The banking community remained, however, generally hostile. Such writers as Robinson (1937) and

leading role in monetary instability, they did not seek to alter traditional banking practices[30]. Under their proposed system, the loan departments of banks would remain able to perform both maturity and risk transformation. The principle of fractional-reserve banking would still apply for deposits fulfilling an investment function: "savings or time deposits would, as at present, normally be covered only fractionally by cash reserves" (Fisher *et al.* 1939, p. 32)[31]. The reserve requirements for those deposits, if any, would be fixed by banking regulation, independently from the proposed monetary reform[32]. Currie and Fisher's aim was not to remove all risk from the activity of banking, but, rather, to shelter the volume of money from this (necessarily risky) activity. Their main point of concern, regarding the loan departments of banks, was thus to make sure that the liabilities they created (i.e. savings deposits) could not be used as means of payment. To this effect, they recommended a legal prohibition of the use of money substitutes in transactions (Currie [1934b] 1968, p. 199; Fisher [1935] 1945, pp. 23, 165), as well as prudential rules aiming to somewhat limit the liquidity of savings deposits[33]. But the fundamentals of banking would be left largely unchanged. Fisher even affirmed that "[i]f demand deposits were backed 100%, almost all other legal regulations of banks could be abolished" (1935, p. 171). The typical balance sheet of a bank, under this approach, is shown in Table 2 (see Fisher [1935] 1945, p. 65; Currie [1938] 2004, p. 360):

Hackett (1945) viewed deposits from the standpoint of the banks whose liabilities they were, instead of concentrating on which deposits could serve as means of payments. Chequing and savings deposits both enabled fractional-reserve banks to channel savings to borrowers, so Robinson and Hackett saw no case for treating the two types of deposits so differently."

[30] It seems, moreover, that had Fisher considered the variations of *V* as a leading factor of instability, his proposed solution would still not have been the abolition of banking. Instead, he would have considered a system of taxing the currency, on the stamp scrip model, so as to increase or decrease its velocity of circulation (see Fisher [1935] 1945, p. 102). When asked if the *'V'* in the equation of exchange had not been neglected in his 100% plan, Fisher replied: "This is quite true. I, at one time, tried to introduce into the plan a tax method to control the influence of 'V'. But I left it out as soon as I found that 'V' is really nearly constant under conditions which would prevail if the 100% plan were in operation" (Fisher, letter to Theodore Morgan, 25 September 1945, in Fisher 1997, p. 242).

[31] For this reason, it is obviously misleading to refer to the 100% money concept as 'full-reserve banking'. Fractional-reserve *banking*, under the Currie-Fisher approach, would still exist; only, there would be full-reserve *money*, separated from banking.

[32] Fisher would, personally, have these requirements strengthened somewhat ([1935] 1945, p. 13), while Currie would have them reduced to zero (Currie [1934b] 1968, p. 199; [1938] 2004, p. 361).

[33] Fisher *et al.* (1939, p. 32), for example, recommended that savings deposits "should be withdrawable only upon adequate notice". See also Currie ([1934b] 1968, p. 200) and Fisher ([1935] 1945, pp. 165-6) for other suggested safeguards.

Table 2 Typical bank balance sheet under the Currie-Fisher approach

Check department	
Deposits in custody	
100% reserves in lawful money	Transferable ('checking') deposits
Loan department	
Assets	Liabilities
(Fractional, or zero) reserves	Equity
Loans, investments, etc.	Non-transferable ('savings') deposits

The same conditions would apply to the banks' own transactions, as Fisher specified: "The loan department. . . . would deposit its own cash in the check department and would transfer it by check just like any other depositor" (Fisher [1935] 1945, p. 69)[34]. Very similar 100% money schemes, insofar as financial intermediation was concerned, would be supported by Richard Lester (1935 p. 37) and George Tolley (1962, p. 304)[35], and suggested by James Tobin (1987b, p. 3484)[36].

Under this Currie-Fisher approach to the 100% money reform, the banks would not be the actors most affected. The major change would rather concern the monetary authority, who

[34] Of course, those deposits held by the loan department should be included in the money supply calculation, if one defined M as $Mo \cup M'$. But they would be excluded if, instead, one restricted M to currency in circulation plus checking deposits held by the non-bank public. Such limited definition led Robinson (1937, pp. 442-5) and Watkins (1938, p. 440) to consider that M would still vary endogenously, under a 100% system, whenever money would be transferred to or from savings accounts.

[35] The old 19th century proposals seem to have followed this approach as well. Carroll, in 1860, had called for 100% reserves behind demand deposits, "but he would not have interfered with the operation of savings departments" (Mints 1945, p. 156). Under Walras's plan for a Transfer Bank, too, private banks would still finance loans and investments out of savings deposits: "Discount banks would receive interest-bearing deposits of a fixed term of one month, three months, one year, and have in their portfolios all the securities of the circulating capital; their cash balances as short-term credit entrepreneurs would be kept at the Transfer Bank" [*"Les banques d'escompte recevraient des dépôts à intérêt à échéance fixe de un mois, trois mois, un an, et elles auraient en portefeuille tous les titres du capital circulant ; leur encaisse d'entrepreneurs de crédit à courte échéance serait à la Banque de virements."*] (Walras [1898a] 1898b, p. 396, my translation).

[36] However, Tobin's proposals for a 'deposited currency', which he developed in other writings (Tobin 1985; 1987a), followed more specifically the concept of narrow banking, rather than that of 100% money. Under his plans, indeed, the liabilities attached to segregated funds, invested in eligible safe assets (other than cash), would still be allowed to circulate as means of payment (Tobin 1985, p. 27; 1987a, p. 173). The main objective of Tobin's proposals—like those of narrow banking—was to secure the payment system. In contrast, the main objective of the 100% money proposal was to end the 'perverse elasticity' of the money supply; "safeguarding depositors" was seen by Fisher (1937b, p. 296) as a major benefit of the reform, but of "secondary importance".

would be vested, under this plan, with the responsibility of directly providing the economy with all the means of payment needed. This explains why, as Stephen McLane remarked, Fisher focused his attention on this issue:

> Throughout his plan, Fisher is more concerned with the central banking structure than with alternatives to commercial banks. Where the Chicago Plan drastically changed private banks . . ., Fisher directed his emphasis toward the creation of a new monetary authority, the Currency Commission. . . . Fisher envisioned some nonspecific restriction on the convertibility of time deposits, but saw no need to break up existing financial institutions. (McLane 1980, p. 89)

5.2 The Chicago Plan approach: Toward the end of banking

The authors of the Chicago Plan, as we have seen, extended their definition of money to liquid assets, and considered the creation of liquidity by banks to be as problematic as their creation of means of payment. They could not, therefore, be satisfied with a simple change of the social convention deciding what was acceptable as a medium of exchange. In their view, the link between banking and velocity (which they related to the supply of 'near monies') also had to be broken. This required a structural change of banking institutions:

> More striking is the fact that Currie's narrow definition of money seems to explain his characterizing as ideal . . . a system which would represent only a small first step toward an ideal financial structure. . . . To argue that the functions of commercial banks might be assumed without much disturbance by savings banks, amounts almost to recommending drastic changes on the grounds that their intended effects would never be realized. (Simons 1935, p. 557)

Hence, what the Chicago Plan authors aimed to achieve was "the outright abolition of deposit banking on the fractional-reserve principle" (Simons *et al.* [1933] 1994, p. 32). Under their plan, banks would be stripped of their lending function, and confined to the administration of checking accounts. Their lending activity would be taken over by other kinds of institutions, which would not be allowed to collect deposits (see Table 3)[37]:

> A second type of institution, substantially in the form of the investment trust, would perform the lending functions of existing banks. Such companies would obtain funds for lending by sale of their own stock; and their ability to make loans would be limited by the amount of funds so obtained. (Simons [1934] 1948, pp. 64-5)

[37] If one followed this approach, then a case could also be made for eliminating all "government facilitation of 'safe asset' creation by the shadow-banking sector", which assets tend to be regarded as "free of credit risk and hence deposit-like", as Adam Levitin (2016, pp. 417-8) recently argued.

Table 3 Typical balance sheets of banks and investment trusts under the Chicago Plan

Deposit banks	
Deposits in custody	
100% reserves in lawful money	Transferable ('checking') deposits
Investment trusts	
Assets	Liabilities
Loans, investments, etc.	Equity

Charles Whittlesey (1935, p. 22), Milton Friedman ([1960] 1992, p. 70)[38] and Hyman Minsky (1994, p. 20)[39] would advocate essentially similar schemes, in which lending banks were replaced by equity-financed institutions, such as investment trusts or mutual funds. In contrast to savings deposits, which have a finite maturity and a fixed nominal value, shares of equity are neither "matured (demand)" nor "maturing" obligations (in Simons's language, 1936, p. 11), and have "contingent" values, "based upon the market value of a portfolio" (Minsky 1994, p. 20). They were not viewed, therefore, as liquid 'near monies' created out of maturity and risk transformation. Other authors, globally sharing this approach, would nevertheless maintain the banks in their lending function, provided only that the transformation of maturities be restricted. James Angell, for example, suggested that savings deposits be "converted into negotiable interest-bearing time obligations maturing serially, say not more than 20 per cent within three months nor more than 40 per cent within a year" (Angell 1935, p. 31). Maurice Allais, for his part, would still allow lending banks to offer savings deposits accounts, but on the condition that maturity transformation be specifically forbidden:

> *Lending banks* would, as today, trade in promises to pay, but—in contrast to the present situation—they would be managed on the principle that all lending for a given term would be financed by borrowing of at least the same term. In other words, whereas banks now borrow short to lend long, they would borrow long to lend short. (Allais 1987, p. 525, original italics; see also 1975, p. 139; [1977] 1989, p. 202)[40]

[38] The paradoxical fact that Friedman, despite his analytical divergences with Simons, came to support an essentially similar banking scheme, was noted by Phillips (1995, p. 208).

[39] In a later text, however, Minsky (1995, p. 8) would—like Tobin—tend to assimilate the concept of 100% money with the idea of backing checking deposits with safe assets (that is, narrow banking).

[40] Allais (1987, p. 498), designating by $A^*(t, \theta)$ "the total amount at time t of the asset items maturing *at or before time* θ", and by $P^*(t, \theta)$ "liability items at time t falling due *on or before* θ", formalized his proposed rule as the following: $P^*(t, \theta) \leq A^*(t, \theta)$, for any t and θ (*ibid.*, p. 525).

The Chicago Plan economists and the other above-mentioned authors, therefore, despite their differences, all called for drastic reforms of banking practices, so as to prevent risk and/or maturity transformations and their destabilizing effects[41].

Henry Simons, however, went further, and eventually suggested that restrictions should also be placed on the asset side of financial intermediaries' balance sheets. From 1934, as we saw in section 4.2, he started to condemn all kind of short-term borrowing as a major source of instability. Therefore, he presented the ideal financial system as the following:

> An approximately ideal condition is fairly obvious—and unattainable. The danger of pervasive, synchronous, cumulative maladjustments would be minimized if there were no fixed money contracts at all—if all property were held in a residual-equity or common-stock form. With such a financial structure, no one would be in a position either to create effective money-substitutes . . . or to force enterprises into wholesale efforts at liquidation. (Simons 1936, pp. 6-7)

Although he recognized that "[t]o propose abolition of all borrowing, or even of all borrowing at short term, [was] merely to dream" (*ibid.*, p. 16), he nonetheless called for a "drastic limitation on the formal borrowing-powers of all private corporations" (*ibid.*, p. 30). The abolition of debt contracts became, in his view, a corollary of the 100% money concept:

> In its more important, converse aspect, 100 per cent reserve banking is simply 100 per cent equity financing of all incorporated enterprise. (Simons 1946, p. 85)
>
> Thus we might arrive at or approach an economy where all private property consisted in pure assets, pure money, and nothing else. This, along with fiscal stabilization of the value of money, is the financial good-society. (*ibid.*, p. 89)

Table 4 shows the balance sheets of financial institutions under Simons's ideal reform plan:

Table 4 Typical balance sheets of deposit banks and investment trusts under Simons's 'financial good society'

Deposit banks	
Deposits in custody	
100% reserves in lawful money	Transferable ('checking') deposits
Investment trusts	
Assets	Liabilities
Government consols, corporate common stock, or real assets	Equity

[41] With the exception, once again, of Friedman (1967, p. 3), who, despite his advocacy of the Chicago Plan reform scheme, seemed to regard this transformation activity favourably.

6. The lack of distinction between the two approaches and its consequences

The divergences between the two approaches to the 100% money concept presented in this paper, which we referred to as the Currie-Fisher and the Chicago Plan approaches respectively, are fundamental. Their distinction, however, has not been clearly established in the literature. It seems that the very designers of the various plans, themselves, tended to underestimate the differences between them. Of those writing in the 1930s, only Simons seemed to be aware of their importance, as revealed his correspondence with Fisher:

> In fact, I am more and more convinced of the importance of the point on which we seemed somewhat to disagree. . . Little would be gained by putting demand-deposit banking on a 100% basis, if that change were accompanied by increasing disposition to hold, and increasing facilities for holding, liquid 'cash' reserves in the form of time-deposits. The fact that such deposits cannot serve as circulating medium is not decisively important; for they are an effective substitute medium for purposes of cash balances. The expansion of [time] deposits[42], releasing circulating medium from 'hoards', might be just as inflationary as expansion of demand deposits—and their contraction just as deflationary; and the problem of 'runs' would still be with us. (Simons, letter to Fisher, 4 July 1934, in Fisher 1997, p. 128)

Fisher, however, did not seem to understand Simons's point. He apparently thought that the latter's concern was only about the risk that savings deposits might be used in transactions:

> It seems to me quite preposterous to consider savings deposits as on all fours, or very similar to, deposits subject to check. . . . The statistical fact is that anything held for interest does not circulate as fast as what bears no interest. . . . [W]e can iron this out further perhaps but I have not seen anything in any of your statements so far which would seem to me to justify your fears in regard of savings accounts. (Fisher, letter to Simons, 14 December 1934, in Fisher 1997, pp. 129-30)

Fisher, as Phillips (1995, p. 92) commented, thus failed to correctly address Simons's concerns. This misunderstanding was all the more unfortunate as, in academic discussions, the fundamental divergence of views between the two groups of authors would be largely ignored, or downplayed. Many commentators seemed to consider that the allowance of fractional-reserve banking, under Currie's and Fisher's 100% plans, resulted from some kind of 'omission' in their analysis. It was often considered that they had failed either to recognize the monetary nature of savings deposits[43], or to realize that such deposits, under a 100% system, could still be exposed to runs and occasion sharp variations in the velocity of money[44]. Some critics even implied that Currie and Fisher were not aware that fractional-

[42] Here, Simons wrote "demand deposits", but this was obviously a typing error.

[43] See Neuman (1937, p. 62), Robinson (1937, p. 42), and Reeve (1943, p. 324).

[44] See Lehmann (1936a, p. 44), Neuman (1937, p. 61), Robinson (1937, p. 440), Watkins (1938, p. 442), Brown (1940, p. 312), Thomas (1940, p. 315), and Reeve (1943, p. 324).

reserve banking would still occur under their proposed plans[45]. These opinions could certainly be explained, in part, by the fact that their writings sometimes showed some ambiguity. Fisher, for example, did imply on many occasions that he was condemning the fractional-reserve principle *per se* (see, for example, Fisher [1935] 1945, pp. 7-8, 19, 36, 155), while he actually accepted this principle for deposits as long as they could not be used in transactions. At any rate, the preservation of (fractional-reserve) banking under Currie's and Fisher's proposals was, usually, simply viewed as a mistake, rather than being reconciled with their own theories of money. As a result, while the Chicago Plan's proposition to replace lending banks with investment trusts was widely regarded as dangerous[46], it was nevertheless often viewed as a necessary measure should the plan stand a chance to meet its objective[47]. This may help explain why, as Whalen observed, "the concept of '100 percent' money has often been (sometimes still is) referred to as the 'Chicago Plan'" (Whalen 1994, p. 27).

The idea that the 100% money proposal necessarily involves replacing the banks by equity-financed institutions would appear again in later debates. Douglas Diamond and Philip Dybvig, for example, when discussing the concept in the 1980s, held the following view:

> [The 100% reserve proposal] specifically restricts banks from entering the transformation business (they cannot hold illiquid assets to transform into liquid assets), and therefore the proposal precludes banks from performing their distinguishing function. (Diamond and Dybvig 1986, p. 65)

This assimilation of the 100% money proposal to the kind of reform specifically advocated under the Chicago Plan approach led them to conclude that it was a "dangerous proposition" (*ibid.*, p. 66). A recent study by the International monetary fund, entitled "The Chicago Plan revisited" (Benes and Kumhof, 2012), while advocating the 100% money reform idea, also regarded it as necessarily implying the end of banking. Its authors, unfortunately, somewhat misrepresented the views of the originators of the proposal. They wrongly affirmed, for example, that Simons and Fisher advocated "more [governmental] control over bank lending", and implied that both of them suggested "eliminating private debt funding (but not equity funding) of banks' residual lending business" (*ibid.*, p. 19). The view that Fisher and the Chicago economists alike would impose 100% reserves behind *all* deposits has been

[45] See Robinson (1937, p. 442), Brown (1940, p. 312-3), and Higgins (1941, p. 94).

[46] See Lehmann (1936a, p. 43), Neuman (1937, p. 62), Robinson (1937, p. 439), Watkins (1938, p. 445), and Thomas (1940, p. 317).

[47] See Neuman (1937, p. 61), Robinson (1937, p. 440), Thomas (1940, pp. 315, 323), and, more recently, Goodhart and Jensen (2015, p. 23).

recently carried on by other writers[48], sometimes relying on this IMF study for their own discussions of the 100% money idea. This lack of differentiation between the two kinds of plans may have, to some extent, biased the discussions regarding the merits and limits of the proposal[49].

7. Conclusion

The 100% money proposal would have very different implications for the banking sphere, depending on how money was defined, and how monetary instability was explained. Two broad approaches to the concept may be distinguished along these lines.

Under the Currie-Fisher approach (or 'transaction approach'), the money supply was defined as including virtually all means of payment, and only means of payment. Monetary instability was primarily explained by the variations in the volume of money (*M*) which, as long as it depended on bank loans, would obey cumulative processes. These authors did recognize that sharp variations in the velocity of money (*V*) could also occur. But they considered that such variations only played a secondary, aggravating role in economic fluctuations, not a leading one. They argued, moreover, that the changes in *V* could always be compensated by adequate changes in *M*. For this reason, the reform plans that they proposed only sought to control the volume of money, by changing the social convention deciding what could be used, or not, as a means of payment—only lawful money issued by the state, or bank deposits fully covered in lawful money, could fulfil that role. This fundamentally *monetary* reform did not imply, for Currie and Fisher, any drastic reform of the proper *banking* activity. Banks, as financial intermediaries, would remain perfectly free to issue promises to pay beyond their cash reserves, and to create liquidity by performing risk and maturity transformation—as long as those same promises were not allowed to circulate as means of payment. Under the Currie-Fisher approach, 100% money would spell the end of fractional-reserve money, but not of fractional-reserve banking.

[48] See, for example, Wolf (2014a, p. 210), Turner (2015, p. 10), King (2016, p. 262), or Glasner (2017, p. 32). An opposite confusion—that the Chicago Plan would, like Fisher's Plan, still allow banks to lend from savings deposits—can be found in Allais (1987, pp. 523-4) and Levitin (2016, p. 419).

[49] The 100% money idea has been criticized, for example, by Adair Turner (2015, pp. 188-90) mainly on the ground that it would prevent the banks from performing maturity transformation, and by Mervyn King (2016, pp. 262-4) mainly on the ground that it would prevent them from performing risk transformation.

Under the Chicago Plan approach (or 'liquidity approach'), the money supply was defined as including not only means of payment, but also liquid assets, such as savings deposits. The variations in the volume of means of payment (*M*) were not regarded as the sole primary cause of monetary instability. Sharp variations in their velocity of circulation (*V*), induced in particular by variations in the quantity of 'near monies' (liquid assets), were attributed a leading role too, capable in itself to generate cumulative processes. The activity of banking, therefore, was viewed as inherently dangerous for the whole economy, not only because the banks' promises to pay could be used in transactions, but also because banks created liquidity when performing risk and maturity transformation. For this reason, in addition to changing the monetary social convention, the Chicago Plan would abolish banks as lending institutions working with savings deposits, and replace them with investment trusts working with equity shares. Under the Chicago Plan approach, 100% money would not only spell the end of fractional-reserve money, but also the end of banking—and, potentially, the end of all kinds of debt contracts, if one followed Simons's reasoning to its logical conclusion.

Table 5 Summary of the divergences between the Currie-Fisher and the Chicago Plan approaches to the 100% money proposal[50]

	Currie-Fisher (or 'transaction') approach	**Chicago Plan (or 'liquidity') approach**
Definition of money	Means of payment	Means of payment + liquid assets
Leading factors of instability[51]	Instability of *M*	Instability of *M* + instability of *V*
Reform proposals	Monetary reform	Monetary reform + banking reform

Although the divergences between these two approaches (summarized in Table 5) are fundamental, they have not been clearly identified and discussed in the literature. This lack of differentiation might help explain why, in many instances, the 100% money proposal has been assimilated to the specific Chicago Plan for banking reform, and considered as

[50] Of course, this distinction should not be interpreted too rigorously, and any classification of 100% money proponents according to the two approaches should be made carefully. Indeed, some authors, while following one or the other approach about banking reform, would at the same time rather follow the opposite approach when it comes to defining money or explaining monetary instability.

[51] With *M* representing here the volume of the means of payment, and *V* their velocity of circulation.

necessarily involving the ‘end of banking’. One may wonder if such confusion has not, to some extent, biased the discussions regarding the merits and limits of the proposal.

PARTIE 2 – LA PROPOSITION 100% MONNAIE : ANALYSE THÉORIQUE

Chapter 4 – Investigating the 'Debt-Money-Prices' Triangle: Irving Fisher's Long Journey Toward the 100% Money Proposal*

Chapter's abstract

This paper aims to show how the 100% money proposal, which Irving Fisher came to support in his 1935 book *100% Money*, can be connected to the rest of his work on monetary instability—in particular, to his early analysis of credit cycles developed between 1896 and 1911, and to his debt-deflation theory presented in 1932-33. We argue that, behind these successive analyses, a common explanatory pattern of short-run monetary fluctuations can be identified. We call this the 'debt-money-prices' triangle, designating the cumulative interplay between three key variables: the debt-volume, the volume of deposit currency, and the general price level. Using this pattern, we endeavor to show how Fisher's explanations of short-run monetary instability evolved between 1896 and 1935, and how the 100% money proposal came, in our view, to be the logical conclusion of this long analytical journey.

Introduction

In his book *100% Money*, published in 1935, Irving Fisher offered his own version of a reform idea that had been put forward by a group of University of Chicago economists in 1933[1]: that of divorcing the creation and destruction of money from the extension and contraction of bank loans, by imposing a 100% reserve requirement in lawful money behind transferable bank deposits. Up until his death in 1947, the Yale economist would make this '100% money' proposal—his own wording for the basic Chicago Plan idea—his hobby horse for stabilizing the dollar and mitigating the severity of booms and depressions. His relentless efforts to rally supporters to the plan and to try to get it translated into law have been well documented in the literature (see, for instance, Allen 1993; Dimand 1993b; or Phillips 1995).

* Une version de ce chapitre a fait l'objet d'une soumission à une revue en février 2019 (suite à laquelle aucun rapport n'a encore été reçu à ce jour). Une version préliminaire de ce papier avait auparavant été présentée lors de la 22e Conférence annuelle de l'*European Society for the History of Economic Thought* (ESHET), en juin 2018 à l'Université Complutense de Madrid (Espagne) ; une version plus avancée fut ensuite présentée lors de la 46e Conférence annuelle de l'*History of Economics Society*, en juin 2019 à l'Université Columbia de New York (États-Unis) (Demeulemeester 2019a) ; nous remercions Lucy Brillant et James Forder pour leurs commentaires adressés à ces occasions. Le papier a par ailleurs bénéficié de commentaires de la part de Rebeca Gomez Betancourt, Laurent Le Maux et Adrien Vila, que nous tenons à remercier également. Il va de soi que toute éventuelle erreur d'interprétation nous est entièrement imputable.

[1] The so-called 'Chicago Plan' for banking reform was first presented in a series of memoranda circulated in 1933, mainly written by Henry C. Simons (who would further elaborate on the plan in later writings) in co-authorship with Garfield V. Cox, Aaron Director, Paul H. Douglas, Frank H. Knight, Albert G. Hart, Lloyd W. Mints and Henry Schultz (see Phillips 1995).

Relatively little has been said, however, about the place and importance of this reform idea in Fisher's monetary theory. As exemplified by Joseph Schumpeter's account of Fisher's works, the theoretical development underlying the 100% money proposal of 1935 has often been overlooked, somehow leaving the impression that Fisher's analysis of monetary instability ended with his 'debt-deflation' theory of 1932-33[2]. Whether it is because the 100% money idea did not originate with Fisher in the first place, or because it might have seemed to present chiefly a practical rather than theoretical interest, its connection with Fisher's overall monetary thought does not appear to have been clearly established. It must be conceded, for sure, that Fisher himself clearly did not overemphasize the theoretical contribution of *100% Money*: this was only to be detailed more than halfway through the book, in Part III ("The Significance of the 100% System"), where he finally asked: "We have now seen how the 100% system would work. But the question remains: what good would it do?" (Fisher [1935] 1945, p. 119). Only then did he state the connection between his new analysis of the monetary system and his debt-deflation theory developed a few years earlier[3]. The purpose of the present paper is to bring such a connection more fully to light—and to stress, also, how Fisher's debt-deflation theory of 1932 was itself connected to his earlier credit cycle analysis of 1911, on which junction Fisher did not put much emphasis either. We agree with Schumpeter (1948, 231), at least, that Fisher's major contributions – to which we would definitely add *100% Money* – can be seen as "the pillars and arches of a temple that was never built. They belong to an imposing structure that the architect never presented as a tectonic unit." The paper attempts at putting part of the puzzle together, insofar as monetary instability analysis is concerned. We first argue, while recalling some constant features of Fisher's

[2] When reviewing "Irving Fisher's Econometrics", Schumpeter (1948, p. 220n3) thus specified in a footnote: "We shall not consider books addressed to the general public (notably, *The Money Illusion*, 1928; *Stable Money*, 1934; and *100 Percent Money*, 1935)". More recently, even such a comprehensive study of "Irving Fisher's Monetary Macroeconomics" as that of Dimand (1999a) only made passing mention of the 100% money proposal. While Fisher's advocacy of the plan as a practical solution for monetary control has been discussed, for instance, by Allen (1993), Dimand (1993b; 2019, pp. 126-29), Phillips (1995) and Loef and Monissen (1999), its theoretical significance has not received, in our view, sufficient emphasis.

[3] See especially Chapter 7 ("Booms and Depressions"). Of course, Fisher ([1935] 1945, pp. 11-14) had already succinctly presented the advantages of the plan at the beginning of the book. But, as a review of his work by Hawtrey (1936) made him realize, the order in which he had presented them was misleading: "The reviewer says, 'The primary purpose is to safeguard the depositors, and so to guard against panics'. This is a mistake, though a very common one. . . . It may be that, in the book, I did not sufficiently emphasise the distinction which I am now making, though I did try. For instance, I said (2nd edition, p. 14) referring to eight advantages of the plan, 'Advantages '6' and '7' are by far the most important, *i.e.* the cessation of inflation and deflation of our circulating medium, and so the mitigation of booms and depressions'" (Fisher 1937b, p. 296).

analysis of short-run monetary fluctuations, that all his successive explanations rested upon a common pattern, which we call the 'debt-money-prices' triangle (Section 1). We then proceed, using this pattern, to study the evolution of Fisher's analysis through its successive stages: his early explanation of 'credit cycles' developed between 1896 and 1911 (Section 2); his 'debt-deflation theory' of great depressions presented in 1932-33 (Section 3); and, finally, his '100% money' proposal of 1935 (Section 4), which came, in our view, to be the logical outcome of this long analytical journey.

1. Fisher's analysis of monetary instability: some constant features

Before dealing with the evolution of Fisher's explanations of monetary instability, it seems important to recall some of his general views on the matter, which he expressed in a long series of works from the 1890s to the 1940s. Several globally constant features can be noted, regarding the largely *monetary nature* of the business cycle (Section 1.1), the *real effects* of short-run monetary instability (Section 1.2), and the *global explanatory pattern* that he used to account for such instability (Section 1.3). The *specific causes* of short-run monetary instability, about which his views changed the most, will be dealt with in the later sections of the paper.

1.1 A monetary interpretation of booms and depressions

Fisher assigned fundamentally different effects to monetary factors, depending on whether the long run or the short run was concerned. His reasoning was based, in both cases, on the equation of exchange, $MV=PT$, with M representing the volume of money, V its average velocity of circulation, T the real volume of trade, and P the general level of prices[4].

On the one hand, in the 'long run'—i.e., insofar as static analysis comparing two states of equilibrium was concerned—money was seen as neutral: any change in M, having only

[4] In his earlier writings (e.g., in Fisher [1911] 1913; 1920), Fisher reserved the use of the term *money* for lawful money only (the circulating part of which he designated by M), and used a distinct abbreviation for deposit currency (M') in the equation of exchange, which then read as $MV+M'V'=PT$. In his later writings (e.g., in Fisher 1928, 1932c, [1935] 1945), he included both sets of means of payment in the *money* supply and simplified the equation of exchange accordingly—it became $MV=PT$. Throughout this paper, unless specified otherwise, *money* will refer to any commonly used means of payment, in accordance with Fisher's later definition. We will designate M as the total money supply, Mo as the volume of lawful money (including all money directly issued by the monetary authority, whether in the form of coins, notes, or deposits), and M' as the volume of bank deposit currency—i.e., all transferable ('checking') deposits held on the books of commercial banks.

temporary effects upon *V* and *T*, would ultimately lead (assuming the absence of independent changes in *V* and *T*) to an exactly proportional change in *P*. That, of course, was the essence of the 'quantity theory of money', which Fisher famously restated in his classic work of 1911, *The Purchasing Power of Money* (Fisher 1911; [1911] 1913)[5].

On the other hand, in the 'short run'—i.e., insofar as dynamic analysis of transitional or cyclical disequilibrium was concerned—money was seen as definitely non-neutral: variations in *M* (and more particularly in *M'*) were considered to be not only an active factor, but even more so, in most cases, the *main* disturbing factor affecting *T*. This was the essence of Fisher's analysis of transition periods, and of his view of the business cycle as "largely a dance of the dollar" (Fisher 1923)[6].

Business cycles, made of alternate booms and depressions of trade, were thus seen as corollary to credit cycles, made of alternate inflations and deflations of deposit currency[7]. Fisher, it should be noted, was always careful to integrate non-monetary factors into his analysis. For example, he typically held that *any* type of factor—whether monetary or real—might cause the *initial disturbance* starting off a boom or depression sequence, and explained at length how multiple real factors (such as changes in profits, net worth, interest rates, or business confidence) combined to *amplify* the cyclical movement, once started. But all these factors generally remained, all in all, of secondary importance. He assigned a significant amplifying role to the velocity of circulation of money as well, but usually considered that great changes in *V* would *not* happen *independently* from great changes in *M*. In the end, the key driving force behind business cycles was, invariably, the volume of deposit currency.

---

[5] Comparative static analysis particularly applies to the lasting effects of *one-off* changes in the volume of money, such as exogenous changes in the monetary base. Fisher thus resorted to the quantity theory to counter the popular argument, used in particular during the Bryan campaign of 1896, according to which the monetization of silver could, in addition to raising the price level, bring lasting real benefits to the economy (see Dimand 1999a; 2011). On Fisher's restatement of the quantity theory, see also Laidler (1991, pp. 68-84; 2013) and De Boyer des Roches and Gomez Betancourt (2013a).

[6] Dynamic analysis can be applied either to the temporary effects of *one-off* changes in the volume of money (such as occurring during 'transition periods' between two states of equilibrium) or to the effects of *cumulative* changes in that volume (such as occurring during 'credit cycles'). Fisher ([1911] 1913), however, did not really distinguish between these two cases: he typically viewed short-run monetary disturbances as both *started* by a one-off change in the metallic monetary base, and *amplified* by cumulative changes in the volume of deposit currency. He thus tended to treat 'credit cycles' and 'transition periods' as the same thing.

[7] As summarized by Fisher ([1933] 1934, p. 21): "The key to the business failures, and therefore the key to the depression, is the deflated price level; the key to the deflated price level is monetary deflation; the principal kind of money which deflates is our checking accounts at the banks".

Fisher also sought to find empirical verification for his interpretation. A series of statistical studies led him to find that the rapidity of change of the price level was highly correlated with changes in the physical volume of trade and in the volume of employment. This confirmed him in his conclusion that "alternate booms and depressions are due to alternate inflation and deflation" (Fisher 1925, p. 180)[8]. The advent of the Great Depression—which, according to him, was primarily due to a "money famine" (Fisher 1936b, p. 104)—did not alter his view on the matter.

1.2 The real effects of monetary instability: undue transfers of wealth and a net loss to society

Fisher, as we just saw, was consistent in holding short-run monetary instability—and more particularly the cumulative variability of *M'* during credit cycles—responsible for the severity of booms and depressions. His description of *how* monetary instability impacted real activity also showed constant features. He argued that any change in the purchasing power of the dollar (i.e., any change in *P*), whether upward or downward, was bound to have harmful redistributive effects—except, of course, under the highly hypothetical assumption of a proportional and immediate adjustment of *all* individual prices (including interest rates) and contracts expressed in money terms (such as wages, rents, or debts). To him, the "primary evil" of unstable money was thus "social injustice, a sort of subtle pocket picking" affecting, alternately, the debtor and debtor-like group, and the creditor and creditor-like group (Fisher 1920, p. 76; see also 1928, pp. 60-61). The second evil was "social inefficiency", that is, "irregularity in business, industry, and employment" (Fisher 1928, pp. 106, 98). This was not only because business was "always injured by uncertainty" (p. 87), but also because an unstable dollar, by playing havoc with bookkeeping values, would spell profit losses and failures (Fisher [1933] 1934, p. 74)[9]. The third evil, inevitably following on from the first two,

[8] Using an innovative method of distributed lags, Fisher found that the rapidity of change of the price level showed a correlation of 94.1% with changes in the volume of business over the period 1915-1923 (Fisher 1925), and of 90% with changes in the volume of employment over the period 1915-1925 (Fisher 1926). See Dimand (1993a).

[9] Such had been the cause of many business failures in the early 1930s: "When the dollar became a swollen dollar, it increased *all* debts. . . . It measured things wrong, and measured them more wrong every day. . . . The dislocation was primarily a bookkeeping phenomenon. It changed the appraisals; and a changed appraisal is fatal to solvency. . . . After 1929, money lied in the account books; and this bookkeeping lie went on spreading, until society's whole machinery of production and distribution was nearly wrecked" (Fisher [1933] 1934, pp. 44-45, italics in original). The fact that deflation, by increasing the real value of outstanding debts, often led to business failures, had already been noted by Fisher ([1911] 1913, p. 335) long before he presented his 'debt-deflation theory' in 1932-33.

was "social discontent" (Fisher 1928, p. 98), leading to class hatred and violence, while "the *real* culprit—the dollar" (Fisher 1933a, p. 66, italics in original) usually remained unsuspected because of the 'money illusion'—that is, "the illusion that money is always fixed in value, that 'a dollar is a dollar'" (Fisher 1920, p. 36). For all these reasons, far from having only redistributive effects, monetary instability always led to a "net loss" to society as whole, whether in the case of a rising or a falling price level (Fisher 1928, p. 102)[10]. In the context of the Great Depression, Fisher also came to the stress the fact that changes in *MV*, if particularly severe, could even affect *T* directly, without waiting for a change in *P* to do so[11]. It is not surprising, therefore, that his priority objective was always monetary stability—stabilizing, through control of its quantity, the purchasing power of money—, on which, in his view, the prosperity of business and employment depended[12].

1.3 A constant explanatory pattern: the 'debt-money-prices' triangle (or 'instability triangle')

Although Fisher's *specific* explanations of short-run monetary instability would evolve over time—as we will see in the subsequent sections—they all shared one remarkably constant *global* pattern, to which we will now turn. Fisher argued early on that, in the short run, the variations in the general price level (*P*) and in the volume of deposit currency (*M'*) would tend to keep reacting on each other, in a cyclical manner. He described such cumulative movements as "credit cycles", because, as he noted, they were "connected with the banking system" (Fisher [1911] 1913, p. 321). Indeed, acting as an intermediary link between *P* and *M'*, a third variable played a crucial role in his analysis: the nominal volume of debt (which

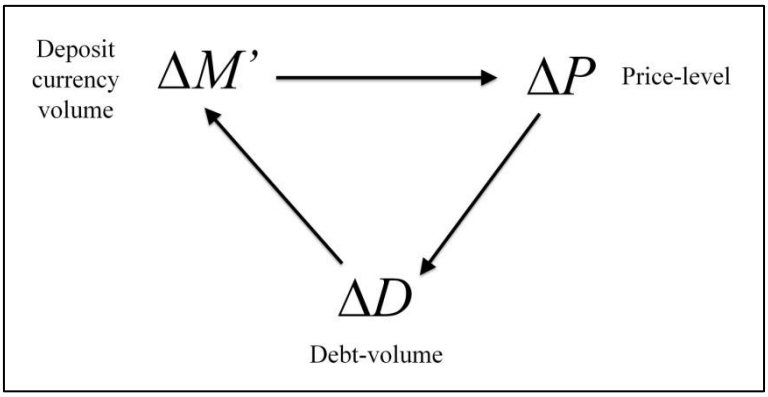
[10] "But we now find the losses exceed the gains, owing to the indirect harm of uncertainty, depression, unemployment, discontent, strikes, lock-outs, sabotage, riots, violence, Bolshevism. These can only mean a dead loss to the general public. The loss is felt whether the price level is rising or falling" (Fisher 1928, p. 103).

[11] He thus insisted on "the direct lessening effect on trade caused by a lessened circulating medium and its lessened velocity. That is, a shortage of money such as the recent shortage of 8 billion dollars of check-book money, *slows down trade at once without waiting to do so through a falling price level*" (Fisher [1935] 1945, pp. 123-24, italics in original; see also 1932c, p. 32; 1933b, p. 342).

[12] Throughout his career, Fisher devoted considerable time and energy to enlighten the public on the advantages of a stable purchasing power of money (see in particular Fisher 1920; 1928; 1934a, Chapter 4); to establish what kind of price-level index would best allow measuring this purchasing power (see in particular Fisher [1911] 1913, Chapters 9-10; [1922] 1927; see also Dimand 1998; 2019, Chapter 6); to devise how such index might best be stabilized in practice (see Dimand 2019, Chapter 5, for an overview of Fisher's various stabilization plans); and to advocate the legislative adoption of a price-level stabilization policy criterion, so as to duly mandate the monetary authority to preserve the purchasing power of the dollar (see Fisher 1934a, Chapters 5-6, for an overview of the many bills he actively supported from 1913 on).

we will, thereafter, designate by the letter *D*), associated in particular with bank loans[13]. The cumulative interplay between these three variables—*P*, *D* and *M'*—which Fisher ([1910] 1912, p. 363) called "the circle of inflation, loans, deposits, and inflation again", would be the common basis for all his successive explanations of monetary instability. We will call this pattern the 'debt-money-prices' triangle, or 'instability triangle', as illustrated in Figure 1.

Figure 1. The 'debt-money-prices' triangle.



This interplay can be decomposed into three specific relations of causality, corresponding to the three sides of the triangle:

- The *P*-to-*D* causality, by which an increase (a decrease) in the general price level brings about an increase (a decrease) in the volume of debts (including, crucially, the debts related to bank loans)[14];
- The *D*-to-*M'* causality, by which an increase (a decrease) in bank loans brings about an increase (a decrease) in the volume of deposit currency;
- The *M'*-to-*P* causality, by which an increase (a decrease) in the volume of deposit currency brings about, other things equal, an increase (a decrease) in the general price level.

Underlying Fisher's evolving analysis of monetary disturbances was a search for the main causal factor responsible for this cumulative interplay. As we will see, he would first focus his attention on the *P*-to-*D* causality (Section 2), before turning to the broad *D*-to-*M'*-to-*P* causality (Section 3), and, finally, to the specific *D*-to-*M'* causality (Section 4).

[13] Let it be noted that Fisher himself never used any kind of abbreviation to designate the debt-volume, as we do here. Throughout the paper, *D* may refer to the volume of debt or to the volume of loans, which are, of course, two sides of the same coin.

[14] This causality particularly involves the variations of profits as an intermediate stage between the variations in *P* and the variations in *D*. Hence what we present here as a triangle could perhaps be more fully presented as a square.

2. Fisher's early analysis of credit cycles (1896-1911): focusing on the *P*-to-*D* causality

Prior to the Great Depression, Fisher would look for the main cause of short-run monetary disturbances on the *PD* side of the 'instability triangle'[15]. He would locate the starting point of credit cycles in any change in the price level (*P*), "whatever [its] first cause may be" (Fisher [1911] 1913, p. 60), and argue that any such variation in *P* would lead, not simply to a proportional, but to a *greater*, variation in the volume of loans (*D*). This would itself, via its effect on the volume of deposit currency (*M'*), bring a further increase in *P*, and so on and on[16]. This over-reaction of *D* to an initial change in *P* was, in his view, the key relationship behind credit cycles, which he set himself the task of explaining.

Fisher's first explanation of this *P*-to-*D* causality would rest upon the particular behavior of the rate of interest. As early as 1896, in *Appreciation and Interest*, he argued that an inequality of foresight existed between debtors and creditors, the former being prompter than the latter to notice a change in *P*, which led to a lag in the adjustment of the rate of interest (Fisher 1896, pp. 76-77; see also Dimand and Gomez Betancourt 2012). As a result, the demand for loans would be unduly stimulated by a rising price level, and unduly discouraged by a falling price level, providing, in Fisher's view, an explanation for credit cycles[17]. At that time, Fisher chose not to detail the reverse causality running from *D* to *P*, via *M'*, possibly because he was so convinced of having found the main anomaly behind credit fluctuations[18].

---

[15] For general discussions of Fisher's early analysis of credit cycles, one can again refer to Laidler (1991, pp. 91-95; 2013, pp. 183-87) or Dimand (1993a, pp. 162-65; 1999a, pp. 44-47).

[16] In 1911, as we already noted, Fisher typically held that short-run price-level disturbances had their *origin* in an exogenous maladjustment of the monetary base, and were then *amplified* by the endogenous variations of deposit currency. He implied, therefore, that credit cycles could be prevented if only the maladjustments of the monetary base were corrected in the first place (see, for example, Fisher 1920, p. 229). Hence his long-time advocacy of gold control through his 'compensated dollar' plan, first presented in 1911, the idea of which was to periodically vary the gold content of the dollar so as to keep its purchasing power constant (on this subject, see Patinkin 1993, or De Boyer des Roches and Gomez Betancourt 2013b). Only in the 1920s would Fisher come to increasingly emphasize the importance of credit control as a complement to gold control.

[17] "What has been said bears directly on the theory of 'credit cycles'. In the view here presented periods of speculation and depression are the result of *inequality* of foresight. . . . It therefore happens that **when prices are rising**, borrowers are more apt to see it than lenders. Hence, while the borrower is willing to pay a higher interest than before for the same loan, lenders are willing to loan the same amount for the same interest. That is, the 'demand schedule' will rise while the 'supply schedule' remains comparatively unchanged. This will of course raise the rate of interest. But it will also cause **an increase of loans and investments**" (Fisher 1896, pp. 76-77, italics in original, bold emphasis added to highlight the *P*-to-*D* causality).

[18] As he pointed out: "Nor is this the place to treat fully the reaction on prices themselves. But it can scarcely be doubted that the mal-adjustment of interest is a central feature in the whole movement. . . .

The thrust of this 'inequality-of-foresight' theory was again presented in *The Rate of Interest* (1907, p. 284-87), and would be at the heart of Fisher's explanation of credit cycles in Chapter 4 of the *Purchasing Power of Money* (Fisher 1911; [1911] 1913). In the latter work, he endeavored, this time, to fully describe the triangular interplay between *P*, *D* and *M'*. He summarized the upswing phase as follows:

> 1. **Prices** rise (whatever the first cause may be; but we have chosen for illustration an increase in the amount of gold).
>
> 2. The rate of interest rises, but not sufficiently.
>
> 3. Enterprisers . . ., encouraged by large profits, expand their **loans**.
>
> 4. **Deposit currency (*M'*)** expands relatively to money (*M*)[19].
>
> 5. **Prices** continue to rise, that is, phenomenon No. 1 is repeated. Then No. 2 is repeated, and so on.
>
> In other words, a slight initial rise of prices sets in motion a train of events which tends to repeat itself. Rise of prices generates rise of prices, and continues to do so *as long as the interest rate lags behind its normal figure.*
>
> (Fisher [1911] 1913, p. 60, italics in original, bold emphasis added to highlight the *P*, *D* and *M'* variables)[20]

But, as this passage illustrates, Fisher kept identifying the 'lag in interest', occurring within the *P*-to-*D* sequence, as the central factor behind the whole cycle, explaining both the upswing and downswing spirals, and the turning points[21]. He had been stating a little earlier, after all, that "the chief object of this chapter is to show that the peculiar behavior of the rate of interest during transition periods is largely responsible for the crises and depressions in which price movements end" (p. 56). On this very point, however, his theory would meet with strong criticism, leading him to somewhat adjust his views.

Interest, rather than credit, appears as the chief independent variable, objectively speaking, though behind it all is imperfection of foresight" (Fisher 1896, p. 79).

[19] Let it be recalled that in this work, Fisher used the term *money* to designate lawful money only.

[20] The downswing phase was symmetrically summarized on page 68, while more detailed summaries of both phases, including the variations in the velocities of circulation (*V* and *V'*), were provided on pages 63 and 69.

[21] Fisher ([1911] 1913, pp. 64-65) thus described the downturn of the cycle: "Evidently the expansion coming from this cycle of causes cannot proceed forever. . . . The check upon its continued operation lies in the rate of interest. . . . The rise in interest, though belated, is progressive, and, as soon as it overtakes the rate of rise in prices, the whole situation is changed. . . . The banks are forced in self-defense to raise interest because they cannot stand so abnormal an expansion of loans relatively to reserves. As soon as the interest rate becomes adjusted, . . . the demand for loans ceases to expand. . . . This check to loans is, as previously explained, a check to deposits also".

Indeed, many reviewers or critics of *The Purchasing Power of Money*, such as O. M. W. Sprague (1911, pp. 143-44), Wesley C. Mitchell (1912, p. 164) and Minnie Throop England (1912), saw no reason for isolating the rate of interest from other production costs (such as wages, salaries and raw materials), whose adjustment was just as (if not more) likely to be lagging behind changes in the price level—thus providing as good an explanation for the increase in profits and in borrowings under a rising price level. England (1912, pp. 98-101), basing her criticism on empirical studies of her own, thus invited Fisher to modify his theory accordingly. The latter, who most likely had received similar criticisms beforehand[22], did make such changes in his books *Elementary Principles of Economics* ([1910] 1911; [1910] 1912) and *Why Is the Dollar Shrinking?* (1914). In these works, the chapters dedicated to 'transition periods', in sharp contrast with Chapter 4 of *The Purchasing Power of Money*, no longer presented the lag in the rate of interest as the one central cause behind credit cycles[23]. In the upswing phase, whereas sequences 1, 3, 4 and 5 remained unchanged, sequence 2 now read as:

> (2) "Enterprisers" . . . get much higher prices than before, without having much greater expenses (for interest, rent, salaries, etc.), and therefore make much greater profits.
>
> (Fisher 1914, p. 77; see also Fisher [1910] 1911, pp. 174-75; [1910] 1912, p. 187. A similar change was made to the description of the downswing phase—see Fisher [1910] 1911, pp. 174-75; [1910] 1912, pp. 189; 1914, p. 81.)

The concluding line was amended accordingly: "Rise of prices generates rise of prices and continues to do so as long *as the enterprisers' profits continue abnormally high*" (Fisher 1914, p. 78, italics in original; see also Fisher [1910] 1911, p. 175; [1910] 1912, p. 187). From then on, Fisher would usually be careful enough to include production costs in general (such as "rent, salaries and wages—not to mention raw materials"), along with interest, as responsible for the "lagging of total expenses behind total receipt" (Fisher 1925, p. 180; see also, for example, 1920, p. 66; 1923, p. 1025; 1926, p. 787; 1936c, p. 496). However, he did not make any such changes in the second edition of *The Purchasing Power of Money*

[22] Unfortunately, a study of Fisher's correspondence at the Department of Manuscripts and Archives of the Yale University Library has not allowed to elucidate this point.

[23] The first experimental edition of Fisher's *Elementary Principles of Economics* (a textbook intended to serve as teaching material), appeared in 1910 under the title *Introduction to Economic Science* (Fisher 1910). The chapter on transition periods was then very similar to Chapter 4 of *The Purchasing Power of Money*. It would be noticeably changed, however, in the second experimental edition, published in September 1911 (Fisher [1910] 1911)—that is, even before the criticisms of Sprague, Mitchell and England appeared in published form—and in the third and final edition (Fisher [1910] 1912). The fact that Fisher ever modified his description of transition periods has, to our knowledge, never been pointed out in the literature so far.

published in 1913, for a reason that he revealed in the preface[24]; and, in further writings, he would sometimes again assign a primary importance to the maladjustment of the rate of interest (e.g., in Fisher 1914, pp. 84-86; 1923, p. 1024; 1930, pp. 43, 411-16). It is thus difficult to assess to what extent he really adjusted his views on the subject. In any case, after he developed his debt-deflation theory in 1932-33, Fisher would consider both the rigidity of production costs in general, and the lagging behind of the interest rate in particular, as insufficient explanations, by themselves, of booms and depressions[25]. From that moment, he would focus his attention on another sequence of the 'instability triangle', as we will now see.

3. The debt-deflation theory of great depressions (1932-33): shifting the focus toward the *D*-to-*M'*-to-*P* causality

The Great Depression of the 1930s made Fisher tackle the issue of monetary instability from a different angle. Until then, as we have seen, he had held the view that credit cycles originated with an initial disturbance of the general price level (*P*), from which the whole cumulative interplay between *P*, *D* and *M'* started. In the boom years preceding the Great Depression, however, the *commodity* price level had remained fairly stable—the *general* price level did rise, but its inflation was concentrated in the stock market[26]. Possibly for this reason, Fisher

[24] "I have endeavored to avoid disturbing the plates of the first edition more than was absolutely necessary. Otherwise . . . I should have liked to modify somewhat the statement of the theory of crises in Chapter IV and in Chapter XI to make use of the helpful criticism of Miss Minnie Throop England, of the University of Nebraska, in *The Quarterly Journal of Economics*, November, 1912" (Fisher [1911] 1913, p. xiii). The largely shared view, however, that Fisher never took any account of England's criticism whatsoever—expressed, for example, by Barber *et al*. (1997, Vol. 4, p. 565) or Dimand (1999a, p. 48; 1999b, p. 109; 2011, p. 137)—should probably be qualified somewhat. It is true that Fisher never explicitly responded to England. Nevertheless, as we saw, he certainly did, in some works at least, modify his explanation of credit cycles along the very lines of her criticism.

[25] "Profits" and the "rate of interest" would be treated, respectively, as the "fifth" and "ninth" main oscillating factors in *Booms and Depressions* (Fisher 1932c, pp. 30, 38). As Rebeyrol (1988, p. 115) noted, Fisher now classified his "inequality-of-foresight theory" among those which, despite containing "some grain of truth", were insufficient "to explain *big* disturbances" (Fisher 1932c, p. 62; 1933b, p. 340, italics in original).

[26]About the 1923-29 boom, Fisher noted, in retrospect: "The effect of this borrowing fever was steadily and enormously to inflate the deposit currency. Corporate profits rose, and the price level in the stock market rose. These were ominous signs. . . . One warning, however, failed to put in an appearance—the *commodity price level did not rise*. The index of wholesale commodity prices, therefore, is not always an infallible index of monetary and business trends. In 1923-29, an index half-way between the level of commodity prices and the steep up-tilt of stock market prices would have been nearer the truth" (Fisher 1932c, pp. 74-75, italics in original). He further noted: "Whatever happened to the commodity price level, the stock market price level sky-rocketed enough for two" (Fisher [1933] 1934, p. 40).

would thereafter take the debt-volume (*D*) as the new starting point of his credit cycle explanations, noting that the Great Depression had originated with "a state of over-indebtedness" (Fisher 1932c, p. 25). From then on, he would focus his analysis on the broad *D*-to-*M'*-to-*P* sequence of the 'instability triangle'.

Fisher's new approach to booms and depressions was presented in a series of speeches and writings between 1931 and 1935—more particularly in his monograph *Booms and Depressions* (1932c), and in an article, "The Debt-Deflation Theory of Great Depressions", published in the first volume of *Econometrica* (1933b)[27]. The whole theory, Fisher (1932c, p. vii) announced in the preface of his book, sought to highlight how some "nine main factors" combined to explain business cycles. However, he quickly focused on the first three of them in particular, which he singled out in a specific chapter: the debt volume, the deposit currency volume, and the price level (pp. 8-28). We find here, once again, the 'instability triangle'—*D*, *M'*, and *P*. The "remaining six factors"—which included "net worth", "profits", "production", "trade and employment", "optimism and pessimism", "the velocity of circulation", and "the rate of interest" (pp. 29-43)—were presented more as secondary than as primary factors, mostly acting as the result of a falling price level (the 'Dollar Disease'), and were treated, as a reviewer observed, "in a cursory manner" (Arakie 1933, p. 485). There was nothing really new in this list[28], nor in the fact that Fisher maintained, as always, a monetary explanation of booms and depressions[29].

---

[27] As Fisher (1933b, p. 350) recalled: "This debt-deflation theory was first stated in my lectures at Yale in 1931, and first stated publicly before the American Association for the Advancement of Science, on January 1, 1932". It was also presented before Congressional committees (Fisher 1932a, pp. 347-68; 1932b, pp. 126-30). Further insight into Fisher's new approach to booms and depressions can be gained from his books *Inflation?* (1933a, Chapter 6), *After Reflation, What?* ([1933] 1934, Chapter 3) and *100% Money* ([1935] 1945, Chapter 7); see also Fisher ([1934] 1935, reprinted in Dimand 2003a) on the international transmission of booms and depressions. On the debt-deflation theory, one can refer, for example, to Dimand (1994), Challe (2000), Assous (2013) or Gomez Betancourt and Vila (2018).

[28] Indeed, all nine factors already appeared more or less explicitly in *The Purchasing Power of Money* (see Fisher [1911] 1913, pp. 67-70, 335; on the role of profits, see also Fisher [1910] 1912, pp. 186-89).

[29] As Arakie (1933, p. 485) remarked: "From the short introduction it becomes clear that we are to be presented with a monetary theory of the trade cycle". Schumpeter (1954, p. 1122), however, surprisingly argued that the debt-deflation theory was "in essence not monetary at all", basing his contention on the fact that Fisher identified real factors, such as "new technological and commercial possibilities", as important debt starters (for a similar interpretation, see, for example, King 1994, pp. 429-30). It is true that, as we have mentioned already, Fisher held that *any* cause, monetary or real, could start off a boom or a depression. But the fact that he primarily ascribed the *cumulative development* of the cycle to monetary causes can hardly be denied. Indeed, as he himself stated: "Invention or discovery *alone* need not carry up the aggregate indebtedness very high, if the price

The novelty of Fisher's new theory—which, when applying it to the downswing phase, he termed the 'debt-deflation theory'—has to be found elsewhere, and, first of all, in his analysis of the interrelations between the three main factors, *D*, *M'*, and *P*. In contrast with his former analysis of credit cycles—in which, as we saw, Fisher had focused on the *P*-to-*D* causality in particular—he now focused on the broad *D*-to-*M'*-to-*P* sequence, emphasizing how a decrease in *D* led, through a contraction of *M'*, to a decrease in *P* (and conversely in the upswing phase)[30]:

> When over-indebtedness . . . is discovered and attempts are made to correct it, distress selling is likely to arise. . . . This excessive eagerness on the selling side of a market may seem enough to explain how distress selling tends to lower the price level; but it is not the fundamental influence. (Fisher 1932c, pp. 13-14)
>
> The really most important reason for this fall in the price level is the contraction of the currency that comes about. There is always a contraction of currency when people pay their debts to a commercial bank faster than new debts are created in the commercial bank. That is a point very few people realize, but it is the key to the whole situation. (Fisher 1932a, p. 352; see also 1932b, p. 687; 1932c, p. 14)
>
> Thus, the volume of the most important circulating medium is tied to the volume of debts, especially debts at the banks . . . so that a sudden disturbance of this **debt-volume** is passed on to the **currency-volume** and consequently passed on to the **general price level**. (Fisher 1932c, p. 17, bold emphasis added to highlight the *D*-to-*M'*-to-*P* causality)

Then, with the following *P*-to-*D* sequence, the process would come full circle, and repeat itself cumulatively—producing, alternately, booms and depressions:

> *Upward*: If business borrowing becomes excessive, it automatically inflates the volume of checks which dart about as a part of the country's circulating medium; these raise the price level, the price level raises profits, and the raised profits lure business men into extending themselves by further business borrowing, which further raises the price level and increases profits, which further lure business into over-extension—and so on and on.
>
> *Downward*: If liquidation, for some reason, gets into a stampede, it wipes out (*i. e.*, deflates) credit currency, which lowers the price level and reduces profits, which force business into further liquidation, which further deflates the credit currency, which further lowers the price level and reduces profits, which force business into further liquidation—and so on and on: a tail spin into depression.

---

level promptly refuses to follow up the lure of invention or discovery with the lure of profits *not due to the invention or discovery* but to credit inflation" (Fisher 1932c, p. 121, italics in original).

[30] To be sure, what was new was not so much the description of this *D*-to-*M'*-to-*P* sequence in itself—which could already be found, for example, in Fisher ([1911] 1913, Chapter 4)—but rather the emphasis laid upon it. As Von Peter (2005, p. 4) noted: "One book review of 1933 argued the theory was not novel . . . This may well be because the effect of deflation on the burden of debt was well understood at the time, while the reverse was not recognised as important".

(Fisher 1933a, pp. 78-79, italics in original)

Fisher further specified that, owing to their special role in the money supply mechanism, "commercial bank debts" were "the only kind of debts directly involved" in the debt-deflation process, although other debts played an aggravating role (Fisher 1932c, p. 15; see also 1933a, p. 81; [1933] 1934, p. 39). Yet, however much the tie between money and debt was central to his analysis, Fisher stopped short, at that time, of putting the monetary system into question. He even sometimes pushed the volume of deposit currency (*M'*) into the background of his explanations, turning the spotlight on *D* and *P*:

> Of these three depression tendencies, *the second (currency contraction) is important only as a connective process* between the other two—which two should be called
>
> *The Debt Disease* (too much debt)
>
> *The Dollar Disease* (a swelling dollar)
>
> (Fisher 1932c, pp. 26-27, first italics added, further italics in original)

The *D*-to-*M'*-to-*P* sequence of the triangle was thus sometimes treated simply as a *D*-to-*P* sequence, with the *M'* variable apparently given a secondary importance[31].

Above all, Fisher came to stress another new feature of his analysis—which he would later term the "Debt Paradox" (Fisher 1936a, p. 407)—pertaining to the case of particularly *great* booms and depressions: the "theory that when over-indebtedness is so great as to depress prices faster than liquidation, the mass effort to get out of debt sinks us more deeply into debt" (Fisher 1933b, p. 350). That is, if the reduction in the *nominal* debt-volume (*D*) led to a *more than proportional* reduction in the price level (*P*), then the increase in the real value of outstanding debt units would overcome the decrease in the number of these units, and *real* indebtedness would actually increase:

> Nominally, of course, any liquidation must reduce debts, but really . . . it may swell the unpaid balance of every debt in the country, because the dollar which has to be

[31] This would especially be the case in Fisher's 1933 *Econometrica* article. He then talked of "two dominant factors, namely *over-indebtedness* to start with and *deflation* following soon after", on the one hand, and seven "secondary variables", into which he now relegated the "circulating media", on the other hand (Fisher 1933b, p. 341, italics in original). For some reason, the role of *M'* was clearly downplayed in this paper, in contrast with all of his other texts from the same period (see, for instance, Fisher 1932a, p. 352; 1932b, p. 687; 1932c, Chapters 1, 2, 10; 1933a, p. 78; [1933] 1934, pp. 36-37). Could this be because Fisher, writing in an academic journal, perhaps even sought to find a receptive audience among the opponents of a monetary interpretation of business cycles? As it turned out, Joseph Schumpeter—one of the very few of Fisher's contemporaries to have discussed his debt-deflation theory—would particularly praise his 1933 article, precisely because of the stress put on real factors as important debt starters (see Schumpeter 1939, p. 146; 1948, p. 231; 1954, p. 1122).

> paid may increase in size faster than the number of dollars in the debt decreases. (Fisher 1932c, p. 25)[32]
>
> Then we have the great paradox which, I submit, is the chief secret of most, if not all, great depressions: *The more the debtors pay, the more they owe*. (Fisher 1933b, p. 344, italics in original)

Thus, whereas Fisher had until then considered price-level variations as tending to be "self-corrective" (Fisher [1911] 1913, p. 70), he now argued that under certain circumstances, if left to themselves, they could become self-defeating instead.

But an "important corollary" of the debt-deflation theory, on which Fisher (1933b, p. 350) put strong emphasis, was that "great depressions are curable and preventable through reflation and stabilization". Indeed, the Federal Reserve System could always forestall the contraction of deposit currency (*M'*) by acting on the monetary base (*Mo*) and using "credit control" instruments, such as open market operations, the rediscount rate, or reserve requirements, in a countercyclical way (Fisher 1932c, pp. 121-31)[33]. Other measures, such as gold control or velocity control, could also be resorted to in complement (pp. 136-41). In any case, Fisher (1932b, p. 35) tended to regard the prevention of booms and depressions as an easy task: "It can always be done, because the price level is the one thing that is easy to control".

The price level would still be better secured, however, if only the cumulative interplay between *P*, *D* and *M'* could be prevented from occurring in the first place. This would be the aim of the 100% money proposal, which Fisher would soon come to advocate.

4. The money-debt tie analysis and 100% money proposal (1935): finally focusing on the *D*-to-*M'* causality

With his debt-deflation theory, as we have seen, Fisher had come to focus on the broad *D*-to-*M'*-to-*P* sequence of the 'instability triangle'. He sometimes stressed the decisive importance of the specific *D*-to-*M'* causality but without, at the time, questioning the dependence of the

[32] Symmetrically, the opposite would occur in a great boom, starting from "a state of *under*-indebtedness", "The burden per dollar may even diminish faster than the nominal amount of the debts increases, thus diminishing the total real burden of the debts, despite their accumulating numbers" (Fisher 1932c, pp. 41-43, italics in original).

[33] Fisher thus blamed Federal Reserve officials for having failed to prevent the monetary contraction of 1929-33: "I myself believe very strongly that this depression was almost wholly preventable, and that it would have been prevented if Governor Strong had lived, who was conducting open-market operations with a view of bringing about stability. When I say 'prevented', I mean to a large extent. We would have had a stock-market recession, but not a subsequent depression" (Fisher 1935a, p. 517; see also 1933b, p. 347; [1935] 1945, p. 129).

money supply upon bank loans[34]. This step would finally be taken in his book *100% Money*, first published in 1935 (Fisher 1935b), in which he would propose—following the idea put forward by the 'Chicago Plan' of 1933—"to raise reserve requirements against checking deposits from 10%, or thereabouts, to 100%" (Fisher [1935] 1945, p. xi). The aim was to "make money independent of loans; that is, to divorce the process of creating and destroying money from the business of banking" (Fisher [1935] 1945, p. xvii)[35]. The existing system of bank-created money was now held directly responsible for the severe contraction of *M'* (from 23 to 15 billion dollars) between 1929 and 1933: "This destruction of check-book money was not something natural and inevitable; it was due to a faulty system" (Fisher [1935] 1945, p. 7).

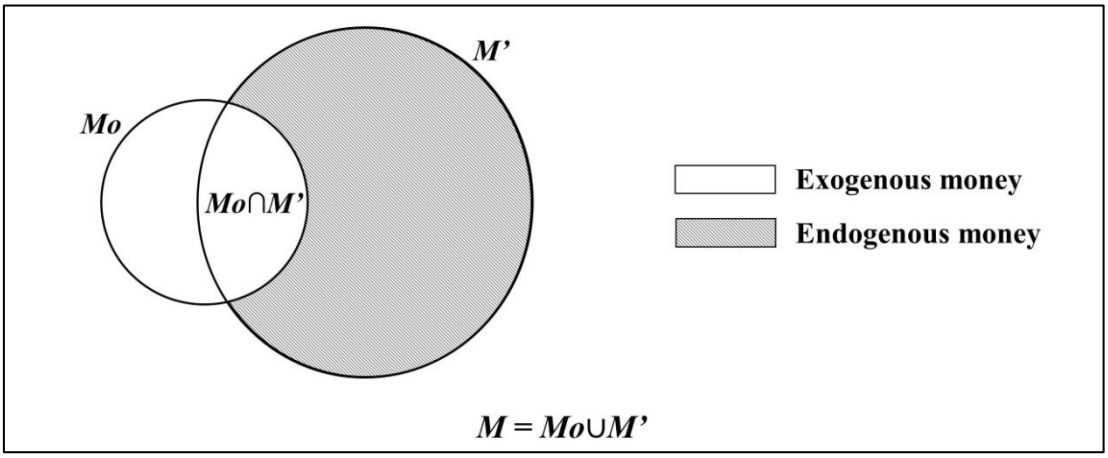
Fisher called this mixed monetary system, in which only a fraction of deposit currency (*M'*) was covered by reserves in lawful money (*Mo*), the "10% system" (Fisher [1935] 1945, p. 7), which we illustrate in Figure 2.

[34] Some passages of his 1932-33 writings, however, seemed to reveal his predisposition to endorse the 100% money idea. In his book *Inflation?*, for instance, Fisher held that "[t]he leading role in these recent cases [of booms and depressions] has been played by credit currency, which (as few people are aware) constitutes nine-tenths of the circulating medium of the United States. . . . Credit currency develops an evil tendency of its own—a tendency which is fortunately denied to other forms of money. This tendency of credit currency (once it starts moving) is *to perpetuate its own motion in a sort of vicious circle, or rather a vicious spiral*—upward or downward as the case may be" (Fisher 1933a, p. 78, italics in original). And in *Booms and Depressions*, after all, his discussion of over-indebtedness had started with the very remark that "[d]ebts are tied in with the money mechanism" (Fisher 1932c, p. 8).

[35] Fisher had embraced the 100% money idea by the end of 1933, and was already campaigning for the plan in early 1934 (see Allen 1993, pp. 707-08). He later explained that "the quest for non-dependence of money on loans was what started the present writer on the 100% system" (Fisher [1935] 1945, p. 58). As he further recalled: "I was stimulated to it partly by [Congressman] Goldsborough asking me if it was not possible to get up a system by which the money of this country could be created and controlled without somebody having to go into debt to create it. And then I discovered that a memorandum on the subject had been prepared at the University of Chicago by a half dozen economists there . . ." (Fisher 1935a, p. 534). From the 'Chicago Plan', Fisher ([1935] 1945, p. xiii) claimed to have obtained "many of the ideas" embodied in his own proposal. A much-detailed account of the history of these plans is given by Phillips (1995). Regarding Fisher's proposal in particular, one can also refer to Allen (1993) or Dimand (1993b).

Figure 2. The 10% money system.

(Adapted from Demeulemeester 2018, p. 363 [Chapter 3 of this thesis], Figure 1)



The total money supply (*M*) is here represented as a combination of two distinct sets:

(i) *Exogenous money*, corresponding to *Mo*, includes all money created by the (usually state-owned) monetary authority—either in the form of coins, notes, or deposit balances—in accordance with its non-profit oriented policy objectives. The part of bank deposit currency (*M'*) covered by reserves in lawful money (*Mo*∩*M'*) is included here: in this case, *M'* simply substitutes for *Mo* in the circulation, without adding to *M*.

(ii) *Endogenous money*, corresponding to *M'*-(*Mo*∩*M'*), includes the part of bank deposit currency *not* covered by reserves in lawful money—that is, the part of *M'* created out of profit-oriented bank loans and investments[36].

The endogenous part usually represented the bulk of *M'*: "Typically . . . some nine-tenths of the depositors' [checking] deposits can be made out of their own promises, with the help of the bank" (Fisher [1935] 1945, p. 41). The resulting "constant trombone of expansion and contraction" of deposits subject to check, "tied, as they now are, to bank loans", was, according to Fisher, "the chief cause of both booms and depressions" (Fisher 1935a, p. 522; [1935] 1945, p. xviii). He insisted that the *D*-to-*M'*-to-*P* causality—which, as we saw, was

[36] It should be noted that the terms *exogenous* and *endogenous*, which we choose to use here, were not employed by Fisher himself. Also, it is sometimes argued that lawful money, insofar as it is created in response to the demand emanating from commercial banks, has to be regarded as endogenous. It is true that, in the existing monetary system, as Fisher ([1935] 1945, p. 51) himself noted, "[a] member bank may create a part of its reserve by 'rediscounting'". But even in this case, the monetary authority still decides, in accordance with its non-profit oriented policy objectives, on the price at which this reserve will be extended. It is in this sense that we speak of an 'exogenous' supply of lawful money.

central to his debt-deflation theory—was only made possible by this "mistaken tie" (Fisher [1935] 1945, p. 177):

> We ought to know that one of the chief reasons why changes in business bring about changes in the price level is the 10% system. This causes the banks, by means of business debts, to keep everlastingly tinkering with our currency and so causes unnatural inflations and unnatural deflations. . . . But, take away the 10% system and you take away these unfortunate associations between business and the price level. (Fisher [1935] 1945, p. 181)[37]

Hence, the 100% money proposal was more than just a practical reform plan. Its theoretical aspect was to identify the "tie between money and debt" (Fisher [1935] 1945, p. 177), by which the creation and destruction of money was linked to the extension and contraction of bank loans, as the main causal factor of monetary instability. The money supply, therefore, had to be made wholly exogenous.

The practical aspect of the plan was as follows. *Checking deposits* (*M'*), fulfilling a payment function, could no longer be created or destroyed out of bank lending activity. They would have to be fully covered by reserves in lawful money (*Mo*), the volume of which would be regulated by a duly mandated Currency Commission, independent of the government[38]. In this way, the tie between *D* and *M'* would be severed, putting an end to the whole 'debt-money-prices' cumulative interplay—as illustrated in Figure 3[39].

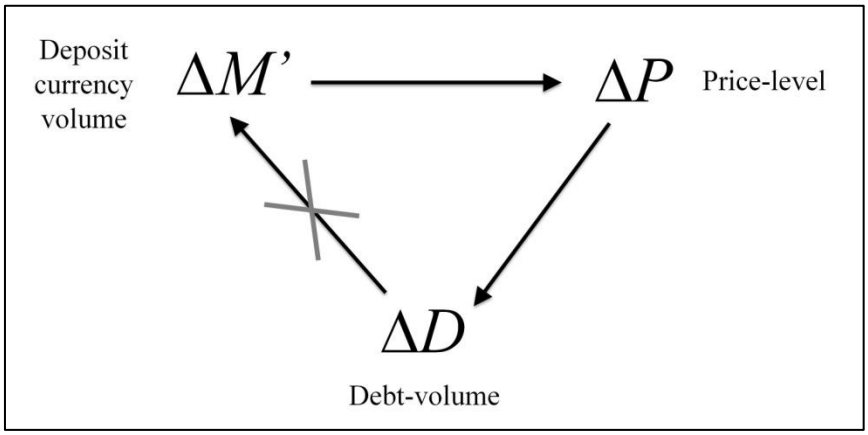
---

[37] See Fisher ([1935] 1945, p. 181) for a fuller statement of how the 10% system, by allowing the *D*-to-*M'*-to-*P* interplay to take place, brings about "a vicious circle in which business expansion and price expansion act each to boost the other" in a boom, and reversely in a depression. He also insisted that individual bankers had no responsibility in this respect: "The public is quite wrong when, in the depression, they blame the individual bankers. It is the banking *system*—the 10% system—which is at fault. *Under this system, the bankers cannot help destroying money when it should be created, namely in a depression; while in a boom they create money when it should be destroyed*" (Fisher [1935] 1945, p. 78, italics in original).

[38] That is, the money supply, freed from the cumulative behavior of bank-created money, would now solely depend upon the one-off adjustments of *Mo* consciously operated by the monetary authority. The Currency Commission would create (destroy) money mainly by purchasing (selling) government bonds—newly issued if need be—according to a policy criterion to be adopted by Congress. Fisher, not surprisingly, favored the criterion of a stable purchasing power of the dollar. He would endow the Currency Commission with some discretionary powers of implementation, so as to enable it to take action proactively whenever the price level threatened to vary (see Fisher [1935] 1945, Chapter 6). He further argued that, insofar as government securities would be purchased by the state itself, through its Currency Commission, the public debt would be reduced accordingly (pp. 206-08).

[39] Apparently Fisher thought this point was not sufficiently emphasized in his book. Shortly before he died in 1947, when leaving instructions for an ultimate revision of *100% Money*, he specified: "I also would like to have the book emphasize, wherever it is possible to bring it in, the most important point of all, namely, that the 100% plan would cut the fateful tie now binding our money supply to the volume of bank loans and investments" (Fisher, letter to Allen K. Deeds, March 19, 1947, Fisher Papers, Yale University Library).

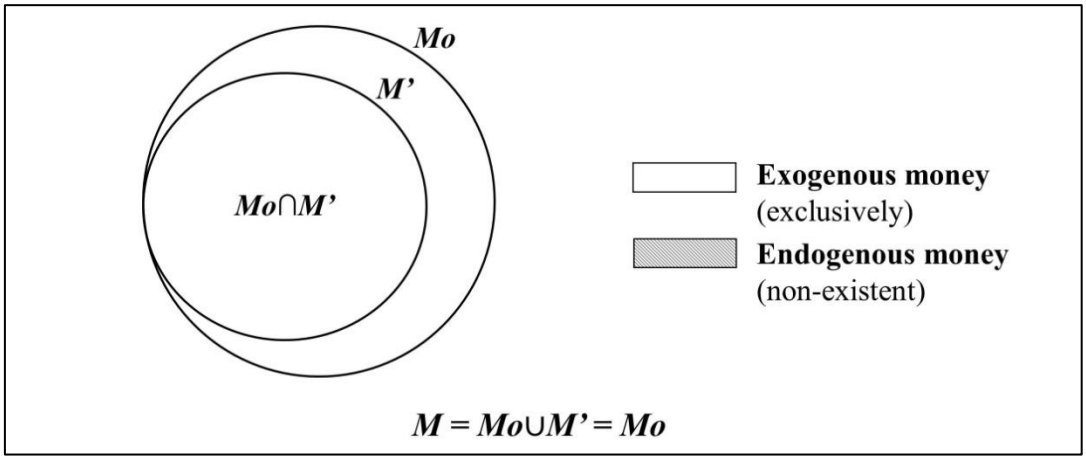
Figure 3. Proposing to end the *D*-to-*M'* causality.



The total money supply *M* would always be equal to *Mo*, under full direct control of the monetary authority, as illustrated in Figure 4[40].

Figure 4. The 100% money system.

(Adapted from Demeulemeester 2018, p. 373 [Chapter 3 of this thesis], Figure 2)



Savings deposits, on the other hand, fulfilling an investment function, could still be freely used by the banks to finance loans and investments (and thus remain only fractionally covered by reserves), but would not be allowed to serve as means of payment[41].

[40] And, because the money supply would no longer depend on bank loans, the monetary authority would no longer need to manipulate the price of loans: "It should also be noted that, even when the price level is, for a time, successfully stabilized under the 10% system, the very effort to accomplish this by manipulating the rates of interest, in the face of the handicaps of that system, necessarily requires some distortion of the rate of interest from normal, that is, from the rate which the mere supply and demand of loans would have produced" (Fisher [1935] 1945, p. 139). Hence, Fisher claimed that not only would monetary control be freed from bank lending considerations, but, similarly, bank lending would be freed from monetary control considerations (p. 205). He went so far as to argue that "[i]f [checking] deposits were backed 100%, almost all other legal regulations of banks could be abolished" (p. 171).

Hence, however much the amount of bank loans and the volume of debt (*D*) could be varying, the volume of money (*M*) would no longer be directly affected thereby[42]. That, according to Fisher, was a precondition for having a true elastic currency:

> The 100% system, with a Currency Commission, provides for expansion and contraction *in proportion to the national need*—that is precisely the meaning of a steady price level. On the other hand, under the 10% system, the business-expansion and debt-expansion are *not* in proportion, nor are the two contractions in proportion. Booms and depressions prove the contrary. It is quite true that money should expand and contract as business expands and contracts. That is the main concern of this book. But we need a more genuine matching of money and business than the debt-deposit tie-up can ever give us. (Fisher [1935] 1945, p. 177, italics in original)

Fisher explicitly linked his new monetary analysis to his debt-deflation theory, providing, in Chapter 7 of *100% Money*, an updated summary of his 1933 *Econometrica* article. This time, he gave the 'money-debt tie' its due emphasis, noting that "an underlying cause (or pre-condition) of great booms and depressions is the 10% system itself" (Fisher [1935] 1945, p. 120)[43]. Over-indebtedness, he now argued, would be much less likely to occur in the first place, should money creation be divorced from loans:

> Moreover, under the 100% system, the depression could never get so big a start since the preceding boom and over-indebtedness would not be so great. This does not mean that, under the 100% system, there would be no booms and depressions whatever. It means simply that they would be vastly less severe. (p. 134)

---

[41] On this point, one major difference must be noted between Fisher's proposal and the Chicago Plan, under which the banks would be deprived of their lending function and replaced, in that regard, with investment trusts. Indeed, Henry Simons viewed the velocity of circulation (*V*) as an independent cause of monetary instability, and argued that fractional-reserve banking, even if conducted with non-transferable savings deposits, had to be forbidden because of its dangerous potential to exacerbate the changes in *V*. Fisher, on the other hand, would still have the banks perform financial intermediation with (fractionally-covered) savings deposits, provided they were not allowed to be made transferable by check or otherwise. On this divergence between the two authors, see Demeulemeester 2018 [Chapter 3 of this thesis]. See also Appendix 1 for an illustration of a typical bank balance sheet under the respective 10% and 100% systems.

[42] Indirectly, however, an increase in bank loans, insofar as it led to an increase in *T*, would (unless *V* increased in proportion) bring about a downward pressure on *P*, prompting the Currency Commission to increase *M*: "The monetary authority . . . should therefore be authorized and directed, on the slightest signal of deflation, as registered by an index number, to issue more new money" (Fisher 1937a, p. 294). In the end, then, although the whole mass of means of payment would be exogenously *supplied*, its volume would remain endogenously *determined* by the level of economic activity.

[43] Also, whereas the 1933 article held that "*all the fluctuations listed come about through a fall of prices*" (Fisher 1933b, p. 344, italics in original), the 1935 summary stated, this time, that "practically *all the events listed occur through* a contraction of check-book money" (Fisher [1935] 1945, p. 123, italics in original).

The endorsement of the 100% money proposal marked the last significant stage of Fisher's monetary instability analysis. The Yale economist would keep advocating the plan and trying to get it translated into law for the rest of his life[44].

Summary and conclusion

Irving Fisher assigned a heavy part of responsibility for the woes affecting the economy to short-run monetary instability. Throughout his long career, he kept arguing that variations in the value of the monetary unit, whether upward or downward, would be a cause of social injustice, social inefficiency and social discontent, resulting in a net loss to society as a whole. In particular, he closely associated booms and depressions of trade with inflations and deflations of deposit currency. Hence his view of the business cycle as "largely a dance of the dollar", which his interpretation of the Great Depression as a "money famine" only confirmed. When it came to explaining short-run monetary disturbances, his analysis significantly evolved over time, as has been well noted in the literature. Yet, as the present paper has attempted to show, a common explanatory pattern can be identified throughout his writings, corresponding to what we have called the 'debt-money-prices' triangle (or 'instability triangle'), illustrating the cumulative interplay between three key variables: the nominal debt volume (*D*), the volume of deposit currency (*M'*) and the general price level (*P*).

In his early analysis of credit cycles, mainly developed between 1896 and 1911, Fisher derived this whole triangular interplay from an initial maladjustment in *P* and focused on the *P*-to-*D* causality in particular. His explanation of why the debt-volume would increase with a rising price level (and conversely decrease) rested on the correlation between inflation and rising profits, which he would successively—or, rather, alternately—attribute to the lagging behind of the rate of interest in particular, and/or to the rigidity of production costs in general.

With his 'debt-deflation theory', developed in 1932-33 in reaction to the Great Depression, Fisher now regarded the triangular interplay as typically started by a maladjustment in *D*—such as a state of 'general over-indebtedness'. He thus shifted the focus of his analysis toward the broad *D*-to-*M'*-to-*P* sequence, by which a debt-liquidation movement led, through

[44] As Allen (1993, p. 715) noted: "His prodigious efforts continued almost to the moment of his death on April 29, 1947—while in a terminal stay in a hospital, he wrote a long letter to President Harry S Truman on March 27 urging 'a law which will sever the tie that now binds bank loans to the volume of checkbook money'". On Fisher's unremitting efforts to get the plan adopted, see also Phillips (1995, pp. 153-64).

monetary contraction, to a deflation of the price-level (and conversely in the upswing). He chose especially to emphasize, at the time, what he called the 'debt paradox': the fact that, should the debt-deflation process be severe enough and left to itself, the fall in *P* could overcome the fall in *D*, and result in an increase of real indebtedness—which he regarded as the "chief secret" of many depressions.

Fisher's analysis, far from stopping there, would shortly afterward take a final turn. In 1935, he offered his own version of the '100% money' reform idea brought about by a group of Chicago economists in 1933, requiring the banks to keep 100% reserves in lawful money behind their checking deposits. Focusing this time on the specific *D*-to-*M'* causality, he now regarded the dependence of deposit currency upon bank loans, under the existing ('10%') monetary system, as the main cause of the inherently pro-cyclical behavior of *M'*. Only because of this dependence, indeed, could the three main factors of instability—*D*, *M'* and *P*—cumulatively interact. Severing the tie between money and debt was the essence of the proposed '100% system', which Fisher would keep advocating for the rest of his life.

Fisher's endorsement of the 100% money proposal can arguably be regarded as the logical outcome of his long journey of investigating what we have called the 'debt-money-prices' triangle, during which he sought to identify the central cause behind short-run monetary disturbances. In our view, the successive theories of instability that he came to develop over time showed a definite consistency, probably too little emphasized in the literature. It may well be that, as Patinkin (1993, p. 27) has argued, by the 1930s, "the Chicago school had become a leader on questions of monetary policy, and Fisher a follower—as exemplified by his acknowledgment to Henry Simons and his colleagues in his 1935 book *100% Money*". What we have endeavored to show, however, is how, by endorsing the 100% money idea, Fisher was also very much following his own line of thought.

Appendix 1 – Typical bank balance sheet under the respective 10% and 100% money systems

Table 1. Typical bank balance sheet under the existing '10% money' system

Assets	*Liabilities*
(Fractional) reserves	Equity
Loans, investments, etc.	Checking deposits
	Savings deposits
	Other liabilities

Table 2. Typical bank balance sheet under the proposed '100% money' system

(Adapted from Demeulemeester 2018, p. 37 [Chapter 3 of this thesis], Table 2)

Check department

Deposits in custody	
100% reserves in lawful money[45]	Transferable ('checking') deposits[46]

Loan department

Assets	*Liabilities*
(Fractional) reserves[47]	Equity
Loans, investments, etc.	Non-transferable ('savings') deposits
	Other liabilities

[45] Under Fisher's plan, designed for the United States, the twelve Federal Reserve Banks (FRBs) would be kept as intermediary agents between the Currency Commission and the member banks, and would themselves be subjected to a 100% reserve requirement behind their checking deposits (see Fisher [1935] 1945, Chapter 4). The check departments of member banks would keep their reserves either in the form of vault cash or checking accounts with the FRBs, themselves keeping their reserves in vault cash or checking accounts with the Currency Commission. The Commission's assets would mainly consist of government securities.

[46] The costs of handling checking deposits could be covered, for example, out of service charges paid by depositors, or out of a public subsidy paid by the state (Fisher [1935] 1945, pp. 152-153).

[47] Fisher ([1935] 1945, p. 69) specified that "[t]he loan department . . . would deposit its own cash in the check department and would transfer it by check just like any other depositor". He also explained that the loan departments with a demand for loanable funds could still obtain them from other banks or from the FRBs (see Fisher [1935] 1945, pp. 82-89, 142). Presumably, then—although Fisher was not explicit about this—each FRB would itself be divided into a check department (subject to 100% reserves) and a loan department, the latter providing lending and rediscounting facilities to the loan departments of member banks. Such central banking practices would, of course, remain fully consistent with the 100% money proposal as long as they did not involve any creation or destruction of transferable deposits, outside of those performed by the Currency Commission. The Commission, Fisher ([1935] 1945, p. 202) specified, could possibly still be allowed to perform rediscounting itself, but "only as a safety valve".

Chapter 5 – Would a state monopoly over money creation allow for a reduction of national debt? A study of the 'seigniorage argument' in light of the '100% money' debates*

Chapter's abstract

This paper discusses the 'seigniorage argument' in favor of public money issuance, according to which public finances could be improved if the state more fully exercised the privilege of money creation, which is, today, largely shared with private banks. This point was made in the 1930s by several proponents of the '100% money' reform scheme, such as Henry Simons of the University of Chicago, Lauchlin Currie of Harvard and Irving Fisher of Yale, who called for a full-reserve requirement in lawful money behind checking deposits. One of their claims was that, by returning all seigniorage profit to the state, such reform would allow a significant reduction of the national debt. In academic debates, however, following a criticism first made by Albert G. Hart of the University of Chicago in 1935, this argument has generally been discarded as wholly illusory. Hart argued that, because the state, under a 100% system, would be likely to pay the banks a subsidy for managing checking accounts, no substantial debt reduction could possibly be expected to follow. The 100% money proponents never answered Hart's criticism, whose conclusion has often been considered as definitive in the literature. However, a detailed study of the subject reveals that Hart's analysis itself appears to be questionable on at least two grounds: the first pertains to the sources of the seigniorage benefit, the other to its distribution. The paper concludes that the 'seigniorage argument' of the 100% money authors may not have been entirely unfounded.

Introduction

The privilege of issuing money is usually regarded as a prerogative of the sovereign. One reason for this is that it gives rise to a form of profit—called 'seigniorage'—which only the state, as embodying the general interest, appears legitimate to claim. In modern monetary systems, however, the exercise of money creation is shared between the (usually state-owned) monetary authority[1], on the one hand, and (usually private) commercial banks, on the other.

* Ce chapitre a été accepté pour publication sous forme d'article dans la revue *Research in the History of Economic Thought and Methodology*, 2020, Volume 38A, pp. 123-144 (Demeulemeester 2020) ; nous tenons à remercier les deux rapporteurs anonymes pour leurs commentaires adressés à cette occasion. Nous remercions également les participants du séminaire "Public Finance in the History of Economic Thought", organisé à l'Université de Barcelone le 3 novembre 2017, lors duquel une version initiale de ce papier fut présentée. Nous remercions enfin Jens Reich pour ses commentaires constructifs. Toute erreur que pourrait contenir cet article relève bien sûr de notre entière responsabilité.

[1] The function of monetary authority is usually fulfilled by a public institution, typically a state-owned central bank, sometimes acting in cooperation with the Treasury. Even in cases where the central bank is privately owned—such as, for example, the Federal Reserve Banks in the United States—most of

This implies, of course, that part of the seigniorage benfit is given up by the state. Such consideration led David Ricardo, in his time, to call for a state monopoly over the issuance of paper money, and the transformation of the (then privately owned) Bank of England into a public National Bank. In the 1930s, a similar consideration formed part of the argumentation in favor of the '100% money' proposal put forward by a number of economists in the United States, most notably Henry Simons of the University of Chicago—who mainly designed the so-called 'Chicago Plan' of banking reform—, Lauchlin Currie of Harvard, and Irving Fisher of Yale[2]. These authors argued that the state's issuing monopoly should be extended to all means of payment, including, in particular, transferable ('checking') deposits. Writing in the context of the Great Depression, their main argument for the 100% scheme was that it would put an end to the inherently pro-cyclical behavior of deposit currency, which, they argued, would keep expanding or contracting cumulatively as long as it depended on bank loans. What may be called the 'seigniorage argument', according to which the recapture by the state of the full profit from money issuance would make it possible to reduce the national debt, was a secondary claim of the 100% money proposal. It has nonetheless been discussed and criticized in the literature—in the first place, as we will see, by one of the very co-authors of the Chicago Plan, Albert G. Hart, who argued in 1935 that this claim was wholly illusory because the state, under a 100% system, would have to take on the costs of administering checking deposits. His criticism has been widely endorsed since then, and seems to have become a definite refutation of the seigniorage argument attached to the 100% plan. Yet, as this paper argues, a thorough study of the arguments to be found in the literature reveals that Hart's conclusion itself appears to be questionable. Such a study requires reconstructing—and, to some extent, interpreting—the whole debate about the claim of the 100% money reform to reduce national debt. The views on this matter were often briefly expressed, with no detailed argumentation. Neither the 100% money authors nor their critics provided any clear definition of the seigniorage concept, and even the term *seigniorage* itself was barely used. Nor were the different kinds of benefit stemming from money creation always clearly distinguished. Finally, the criticisms addressed to the seigniorage argument have never been explicitly answered by the 100% money proponents—although, as we shall argue, their writings did contain elements which could have been used to reply to their critics. This paper

---

the net seigniorage revenue (with allowance for a certain percentage to be retained) is transferred to the Treasury.

[2] See especially Simons *et al*. ([1933] 1994), Currie ([1934a] 1968) and Fisher ([1935] 1945). On the history of the 100% money proposal, one can refer in particular to Phillips (1995).

is organized as follows. By resorting to the more recent literature on seigniorage, we will first endeavor to clarify how seigniorage can be defined, and to whom it initially accrues under the existing monetary system (Section 1). Using this analytical framework, we will then consider the 100% money proposal of the 1930s and its claim to reduce national debt (Section 2), before turning to the refutation of that claim provided by Hart in 1935 (Section 3). Finally, we will consider two kinds of arguments which, in our view, should lead to a reconsideration of the consensus reached on Hart's conclusion (Section 4).

1. Money creation and the seigniorage benefit

This first section, mostly building on recent literature, aims to provide a clear definition of the concept of seigniorage—which was unfortunately missing from the 100% money debates—as well as a formulation of its initial distribution. This will set the analytical framework used in the following sections.

1.1. Defining seigniorage

Seigniorage is usually and broadly defined as the revenue stemming from money creation. It gets its name due to the fact that "it accrued to the *seigneur* or ruler who issued the currency, in early times" (Black 1987, p. 9086, italics in original). Although a majority of economists today agree that most of the money supply is created by private banks, and not by the state and its central bank, the term *seigniorage* generally continues to be used in the narrow sense of the revenue stemming from *base money* creation only. The reason for sticking to this narrow scope is unclear. In this paper, *money* (or *currency*) will be defined as a synonym for means of payment, whether generally or only commonly accepted in the settlement of transactions, in accordance with Fisher's latest definition[3]. *Seigniorage* will be defined as the financial benefit directly stemming from any type of money creation, whether exercised by public or private issuers. By *directly*, we mean to exclude any profit indirectly stemming from money creation, such as, for example, the revenue gained from an inflation of the general price level following an excessive issuance of money. The so-called *inflation tax* is often confused with the seigniorage revenue. We argue that the two concepts are different. On the

[3] "Money is any form of property which is commonly used as a means of exchange for other forms of property—in short, as a means of payment. It includes the ordinary 'pocket-book money' and also what may be called 'check-book money'" (Fisher, unpublished paper, dated February 26, 1947, p. 1). Currie ([1934a] 1968, p. 11) used a very similar definition.

one hand, seigniorage—as defined in this paper—does not presuppose any rise in the price level to be positive; it simply requires that the money supply be increased, whether or not this leads to inflation. On the other hand, the inflation tax—defined as the profit gained from wealth transfers caused by a rising price level—does not benefit the issuer(s) of money exclusively, nor does it damage the holders of money exclusively. It more generally benefits what Fisher (1934a, p. xxi) called "the debtor and debtor-like classes", who gain from inflation what is correspondingly lost by the creditor and creditor-like classes—and conversely in the case of deflation. The fact that inflation is typically caused by excessive money creation, and that it may benefit the issuer of money more than others (due to a possible 'Cantillon effect'), should not, in our view, preclude distinguishing between these different concepts.

As Reich (2017) has recently argued, different measures of seigniorage should be used depending on the currency regime under consideration. He distinguishes between a *fiat currency* regime, based on "a currency which is supplied through government spending and removed from the market via taxation" (p. 7); a *credit currency* regime, "in which the currency is supplied to the public via lending" (p. 8); and a *commodity currency* regime, "in which a commodity is the basis of a currency which can be minted or coined at will" (p. 9).

The issuing of fiat currency, as Reich (2017, p. 100) notes, "may be done by literally printing the currency or by selling nonredeemable bonds to the central bank, which then creates the currency and transfers it to the treasury's account". In this case, the Government is not only spared the repayment of the bonds in question, but also the corresponding interest charge, the latter being transferred back from the central bank to the Treasury. Fisher ([1935] 1945, pp. 206-207) already noted in his time that, should the monetary authority buy bonds from the Government, "the two opposite payments would be bookkeeping offsets against each other. This would apply to principal as well as interest". In this paper, in line with Fisher's view, we will consider the seigniorage stemming from the issuance of fiat currency (S_F) to comprise two parts, which we will call *seigniorage proper* (S_{F1})—corresponding to the avoided principal repayment—and *saved interest seigniorage* (S_{F2})—corresponding to the avoided interest charge[4].

[4] In this, while following the view expressed by Fisher in the above citation, we differ from Reich (2017, p. 49) and most of the literature on seigniorage, which generally restrict the profit stemming from fiat money issuance to the sole revenue here referred to as 'seigniorage proper'.

Seigniorage proper (S_{F1}) corresponds to the value of money created through spending by the issuer, net of its cost of production[5]. Because the production cost, in the case of fiat currency, is close to zero, seigniorage proper then roughly corresponds to the full value of the issued money—as Ricardo ([1816] 1951, Vol. 4, p. 114) already observed long ago: "Paper money may be considered as affording a seigniorage equal to its whole exchangeable value". In this case, then, the nominal amount[6] of seigniorage proper stemming from the issuance of fiat currency during a given period t can be considered as equal to the whole net amount of fiat currency issued during this period[7]:

$$S_{F1,t} = \Delta M_{F,t} \tag{1}$$

Saved interest seigniorage (S_{F2}) corresponds to the interest charge saved by the issuer of fiat currency, who can freely spend money which otherwise would have had to be borrowed at interest[8]. Its nominal amount for a given period t can be measured by multiplying the variation in the stock of fiat currency ($\Delta M_{F,t}$) by the rate of interest which would have applied should the corresponding sum have been borrowed (i)[9]:

---

[5] This is in line with the traditional definition of seigniorage as "the excess of the face value over the cost of production of currency" (Black 1987, p. 9086). Historically, in the case of commodity currency, seigniorage proper referred to the difference between the commodity value and the face value of minted coins.

[6] We are using nominal values throughout this paper, not only for simplicity, but also because the 100% money proposal, on which the paper focuses, would typically (although not necessarily) be combined with a price-level stabilization policy, which, if successfully implemented, would make nominal values correspond to real values. This is one more reason why the 'inflation tax' issue is not discussed in this paper.

[7] Similar calculation methods, usually expressed in real values, are used, for example, by Cagan (1956, p. 78), Friedman (1971, pp. 848-49), Klein and Neumann (1990, p. 211), Schobert (2003, p. 917), Makinen (2005, p. 357), Buiter (2007, p. 3), Walsh ([1998] 2010, p. 138), Blanchard (2017, pp. 468-69) and Reich (2017, p. 49).

[8] As Ricardo ([1824] 1951, Vol. 4, p. 277) noted: "It is evident . . . that if the Government itself were to be the sole issuer of paper money, instead of borrowing it of the Bank . . . the Bank would no longer receive interest, and the Government would no longer pay it". Frank D. Graham (1936, p. 434) argued along the same line, in regard to checking deposits: "The government is thus put in the ridiculous position not only of divesting itself of its prerogative in favor of the banks, and of losing the seigniorage profits on the new supply of money, but of actually paying the banks, in interest-bearing securities, for issuing bank-debt money on its behalf". See also Kregel (1996, pp. 655, 666n9) for a very similar remark.

[9] This simple measure, however, supposes that all of the avoided interest charge is saved during period t. Taking account of avoided loans which would have run over several periods would require using a more complex method. In any case, this 'saved interest seigniorage' should not be confused, as is sometimes done, with the seigniorage revenue accruing in the form of interest to the issuer of a credit currency. Fiat currency, indeed, may remain in circulation for an indefinite time period after it has been spent, and should probably not be regarded as affording saved interest seigniorage during its whole existence.

$$S_{F2,t} = i\Delta M_{F,t} \tag{2}$$

Hence, the total gross seigniorage accruing to the issuer of fiat currency during a given period t may be regarded as equal to the sum of these two gains[10]:

$$S_{F,t} = S_{F1,t} + S_{F2,t} = \Delta M_{F,t} + i\Delta M_{F,t} = (1+i)\Delta M_{F,t} \tag{3}$$

From this total, the costs of operating the monetary system could be subtracted so as to get a measure of the net seigniorage profit (sometimes called *fiscal seigniorage*[11]) actually benefitting the Treasury.

Such fiat currency regime, as we will see in section 2, would fully apply under a 100% money system, under which all new money would be "spent into existence by the state instead of, as at present, being lent into existence by the private companies" (Fisher, letter to President F. D. Roosevelt, May 14, 1937, reprinted in Fisher 1997, Vol. 14, p. 170)[12].

However, under the existing monetary system, money is created partly by spending, and partly by lending or investing, whether by the state or by the banks. To the extent that it is 'spent into existence' by the banks when simply paying for expenses, the same method of measuring seigniorage as the one used for state-issued fiat currency can probably be used[13]. To the extent that it is 'lent (or invested) into existence'—whether by the state or by the banks—on the other hand, another method, pertaining to the case of credit currency, should be used.

[10] If the state, for example, were to issue $1 million during a given year, thereby avoiding contracting a one-year loan of the same amount at, say, 5% interest, it would have gained not only the $1 million of avoided debt principal repayment (S_{F1}), but also the $50,000 of avoided interest charge (S_{F2}) by year-end. The total seigniorage benefit (S_F) would then amount to the full sum of $1,050,000.

[11] See, for instance, Klein and Neumann (1990, p. 210) or Reich (2017, p. 4).

[12] Of course, part of the money supply, under a 100% system, might still be 'lent into existence' by the monetary authority, if the latter, for example, were authorized to rediscount commercial paper with newly created money. This option, however, was clearly not favored by the 100% money authors, except, possibly, "as a safety valve in cases in which the banks could not themselves readily afford accommodation in sufficient volume or with sufficient promptness" (Fisher [1935] 1945, p. 88).

[13] Of course, checking deposits created by banks may always be destroyed when converted into cash. As with other forms of money, the related seigniorage is then positive only insofar as more money is created than is destroyed.

The seigniorage revenue stemming from the issuing of credit currency corresponds to the profit earned by lending or investing it[14]. For a given period *t*, the nominal amount of *credit currency seigniorage* (S_C) may then be measured as follows:

$$S_{C,t} = iM_{C,t} \tag{4}$$

where M_C represents the outstanding stock of credit currency, and *i* the rate of return on the asset portfolio acquired with that stock[15].

1.2. The distribution of seigniorage: public versus private issuance of money

From the definition of seigniorage given above, it follows that the revenue stemming from money creation is shared between the different issuers of means of payment. Under the existing monetary system—which Fisher ([1935] 1945) called the '10% system'—the total money supply (*M*) can be regarded as a mix of *state-created money* (M^S), issued by the (usually public) monetary authority, and *bank-created money* (M^B), issued by the banks—that is:

$$M = M^S + M^B \tag{5}$$

As Figure 1 illustrates, M^S corresponds to the set of lawful money (*Mo*)—including coins, notes, and central bank deposits—partially overlapped by the set of bank deposit currency (*M'*)[16] insofar as checking deposits are covered by reserves in lawful money. M^B then corresponds to the non-covered part of *M'*, created out of loans and investments—that is:

$$M^B = M' - (Mo \cap M') \tag{6}$$

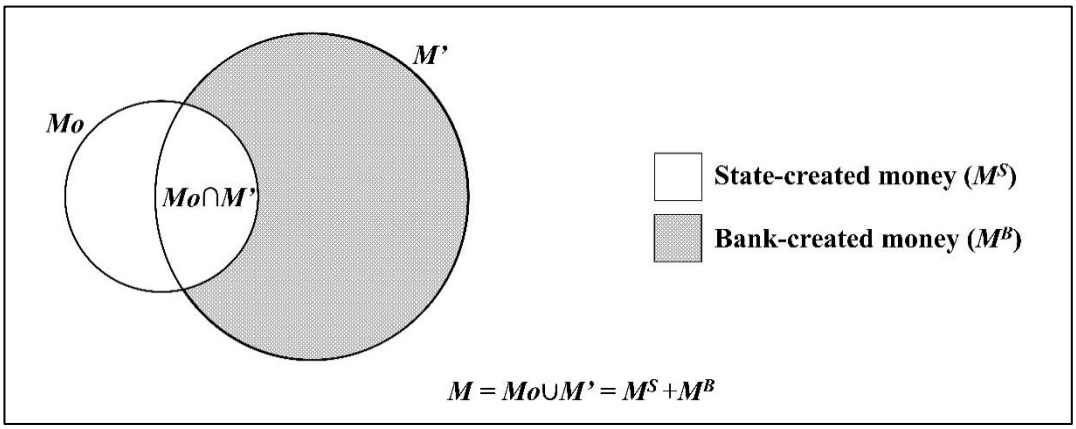
[14] See Reich (2017, p. 82), although he restricts the use of the term *currency* (including *credit currency*) to legal tender money. He concludes his book, however, by asking: "If seigniorage is due to the purchasing ability bestowed upon currency, then is there a seigniorage-like revenue from the supply of current accounts, i.e., the creation of bank money by crediting private accounts? This question will be addressed in future research" (Reich 2017, p. 147). See also Goodhart (1988, p. 21, italics in original) who noted, in respect to bank notes: "Even when private note issues are *not* legal tender, the issuers obtain seignorage, i.e., the margin between the rate of interest, generally zero . . . on the notes and the interest on the (default-free) assets held by the private note issuers against such note liabilities".

[15] Similar calculation methods, usually expressed in real values, and sometimes designating *i* as the (risk-free) rate of interest, are used, for example, by Klein and Neumann (1990, p. 209), Schobert (2003, p. 917), Buiter (2007, p. 3), Walsh ([1998] 2010, p. 139) and Reich (2017, p.82).

[16] Historically, of course, bank money also included private bank notes before note issuance became a state monopoly in most countries.

Figure 1. State-created versus bank-created money under the existing '10% system'

(adapted from Demeulemeester 2018 [Chapter 3 of this thesis], Figure 1, p. 363)



Along the same line of reasoning, we will designate S^S as the part of seigniorage accruing to the state, and S^B as the part of seigniorage accruing to the banks and their customers. We will thus have, for any given period t:

$$S_t = S^S_t + S^B_t \tag{7}$$

The importance of S^S_t relatively to S^B_t will of course depend on the part of state-created money in the newly created money supply ($\Delta M^S_t / \Delta M_t$)[17].

The portion of seigniorage accruing to the banks and their customers (S^B_t) represents the amount of revenue which, according to the 100% money proponents, could benefit the state instead, if the monetary authority were to exercise a complete monopoly over money creation.

2. The 100% money proposal and its claim to reduce national debt

2.1. The 100% money proposal: making money issuance a monopoly privilege of the state

The issuance of money by private banks has been criticized early on in the literature, on the grounds that only the state should be allowed to benefit from the seigniorage revenue. Such consideration led David Ricardo, from 1815, to question the note-issuing privilege of the Bank of England, then a privately-owned institution:

[17] According to Cagan (1956, pp. 78-79): "Typically, institutions other than the government also have the authority to issue money. . . . The government's share of total revenue depends on the proportion of money issued by governmental agencies".

> I think the Bank an unnecessary establishment getting rich by those profits which fairly belong to the public. I cannot help considering the issuing of paper money as a privilege which belongs exclusively to the state.—I regard it as a sort of seignorage . . . (Ricardo, letter to Malthus, September 10, 1815, in Ricardo 1951, Vol. 6, p. 268)

He went on to argue that "so considerable an advantage might be obtained for the state" if only the latter became "the sole issuer of paper money" (Ricardo [1816] 1951, Vol. 4, p. 114)[18]. That would be the essence of his 'Plan for a National Bank', under which independent Commissioners would be appointed, "in whom the full power of issuing all the paper money of the country sh[ould] be exclusively vested" (Ricardo [1824] 1951, Vol. 4, p. 285; see also [1817] 1951, Vol. 1, pp. 361-63).

Ricardo's plan, however, stopped short of considering other means of payment, such as transferable bank account balances. The idea of extending the state issuing monopoly to 'checkbook money' emerged later in the 19th century, and would be at the heart of the '100% money' proposal of the 1930s[19]. In the context of the Great Depression in the United States, economists such as Henry Simons of the University of Chicago (Simons *et al.* [1933] 1994; Simons [1934] 1948)[20], Lauchlin Currie of Harvard ([1934a] 1968) and Irving Fisher of Yale ([1935] 1945) called for a 100% reserve requirement, in lawful money, behind all bank deposits subject to check. The privilege of issuing money would be exclusively vested with an independent monetary authority (the "Currency Commission" in Fisher's plan, echoing Ricardo's "Commissioners"), which would manage the money supply according to a policy objective to be decided by Congress—such as, typically, price level stability (see Fisher [1935] 1945, pp. 96-97; Simons 1936, p. 21). Unlike Ricardo's plan, the 100% money proposal was not primarily motivated by the consideration of returning all seigniorage profit to the state. Its main objective was rather to stabilize the economy, by divorcing the creation (destruction) of money from the extension (contraction) of bank loans, the association of

---

[18] Léon Walras ([1885] 1898b, pp. 47-48, my translation) would also note that, should all private bank notes be replaced by state-created money in the circulation, then "if the circumstances were favorable, one would thereby find a way of amortizing a considerable portion of the public debt" [*"si les circonstances sont favorables, on pourra trouver là le moyen d'amortir une notable partie de la dette publique"*].

[19] One can find this reform idea already expressed by such writers as Charles H. Caroll (writing in 1860, see Mints 1945, pp. 154-56), Léon Walras ([1898a] 1898b, pp. 376-98), Ludwig von Mises ([1912] 1953, p. 408) and Frederick Soddy ([1926] 1933, pp. 171-73). However, it only started being actively discussed in the 1930s.

[20] Simons was the main author behind the 'Chicago Plan' for banking reform, first presented in a series of memoranda privately circulated in 1933, which he co-authored with Garfield V. Cox, Aaron Director, Paul H. Douglas, Frank H. Knight, Albert G. Hart, Lloyd W. Mints and Henry Schultz.

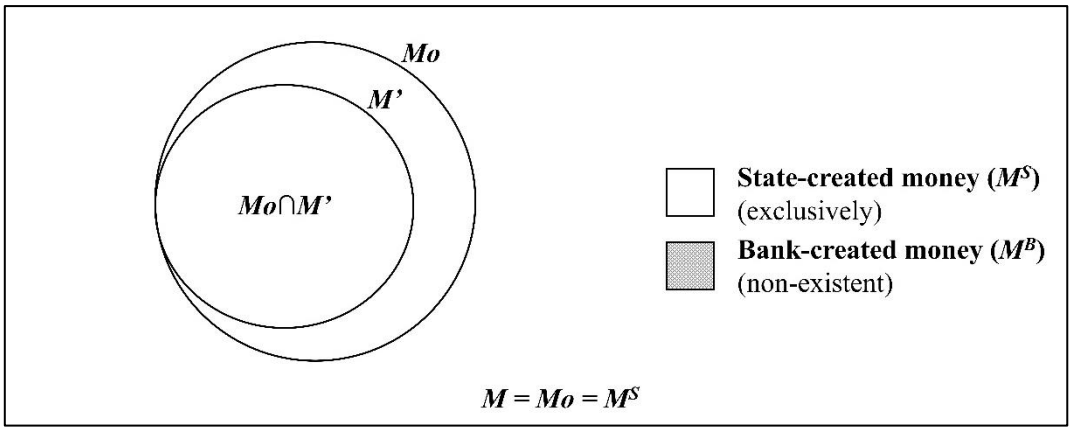
which was viewed as a source of cumulative processes largely responsible for booms and depressions. Returning the full benefit of seigniorage to the state, however, was clearly claimed to be an additional advantage of the scheme. As Simons *et al*. ([1933] 1994, p. 38) argued:

> If provision is to be made for continuous injection of new "money", whether in the form of deposits or notes, the scheme must seem preposterous unless the new money is to be created and issued by the government. . . . When new, effective money is "issued", assets will be received in exchange; and there is little sense in any scheme whereby these assets fall to private institutions. We wish to call attention especially to this point. It seems of decisive importance; but it appears never to have occurred to most students of banking and currency policy.

Under a 100% money system, as illustrated in Figure 2, bank deposit currency (M') would be fully covered by reserves in lawful money (Mo), so that the total money supply would then equal the monetary base: $M = Mo \cup M' = Mo$. In this way, the part of state-created money (M^S) in M would be raised to 100%.

Figure 2. The '100% system' consisting of state-created money exclusively

(adapted from Demeulemeester 2018 [Chapter 3 of this thesis], Figure 2, p. 373)



The 100% money reform, it was argued, would allow the state to increase its seigniorage revenue and thus reduce its debt[21]. Such claim rested on two grounds, which have not always been clearly distinguished in the literature. First (as we will see in Section 2.2), there would

[21] The claim that the 100% money proposal would increase the net revenue of the state (and thus make it possible to reduce the national debt) was expressed, in particular, by Soddy ([1926] 1933, p. 171), Simons *et al*. ([1933] 1994, p. 33), Simons ([1934] 1948, p. 62; 1946, p. 87), Currie ([1934a] 1968, pp. 153-54), Lester (1935, p. 38), Fisher ([1935] 1945, pp. 11, 206-207; 1936a, pp. 415-16), Douglas (1935, p. 185), Graham (1936, pp. 430-34), Fisher *et al*. (unpublished memorandum dated July 1939, pp. 26-29), Friedman ([1960] 1992, p. 71) and Allais (1967, pp. 16-25; 1975, pp. 131-32; [1977] 1989, p. 182; 1987, p. 519). More recently, see also Benes and Kumhof (2012, p. 55), Jackson and Dyson (2013, p. 260), Grjebine (2015, pp. 39-48), or Huber (2017, p. 176).

be an initial substantial gain (which we call the 'transition seigniorage') to be made by the state during the installation of the new system, as the whole existing stock of bank-created money would be replaced with state-created money. Second (as we will see in Section 2.3), once the system was in place, the state—and only the state—would fully benefit of the whole seigniorage revenue stemming from each subsequent increase in the money supply.

2.2. The 'transition seigniorage' and the claim of substantially reducing national debt by installing the 100% system

The 100% money authors, in arguing that their reform plan would make it possible to reduce the national debt, stressed the particular gain to be realized by the state when installing the new system—as illustrated by the quotations provided below. During the transition phase, an outstanding amount of lawful money would have to be issued to provide the banks with the required 100% reserves behind checking deposits. State-created money (M^S), in other words, would be extended so as to fully displace bank-created money (M^B) in the total money supply (M). If the system were to be installed during period t, the related variation of M^S would then be equal to the outstanding amount of bank-created money at the end of the preceding period t-1:

$$\Delta M^S_t = M_{t-1} - M^S_{t-1} = M^B_{t-1} \tag{8}$$

Using equations (3) and (8), the resulting *'transition seigniorage'* (S_T)—as we propose to call it—might then be measured in the following way:

$$S_{T,t} = (1+i)\Delta M^S_t = (1+i)M^B_{t-1} \tag{9}$$

The 100% money proponents claimed, on this ground, that the adoption of their scheme would allow for a substantial, and almost immediate, reduction of the national debt. Hence, according to the Chicago Plan economists:

> At the end of the transition period, the Reserve Banks should find themselves in possession of additional investment assets (perhaps exclusively bonds) about equal in value to the amount of the present federal debt. Since the earning of the Reserve Banks would belong to the government, the entire burden of the present federal debt might thus be eliminated—without taxation and without inflation! (Simons *et al*. [1933] 1994, p. 33; see also Simons [1934] 1948, p. 62)

Fisher expressed a similar argument:

> [I]n the midst of a money famine, the Government, due to the same partial reserve system, has sold billions of bonds to banks in order that these banks should manufacture new check-book money and get paid tribute for it into the bargain, the

> payment being the interest on the bonds. Thus have we moved away from the 100% system and the recapture of sovereign rights . . . One way [to reverse all this] would be to provide the banks with the needed 100% reserve . . . by buying back the Government bonds they hold in exchange for the new reserve money. . . . In that way most of the Government debt could be paid almost over night. This would be one of the main immediate advantages of introducing the 100% system. (Fisher 1936a, p. 415; see also Fisher [1935] 1945, p. 206)

However, such rapid (if not immediate) reduction of the national debt on so large a scale, through the purchase of outstanding Government bonds, might prove disruptive for the banks. James W. Angell (1935, p. 11), among others, pointed out that, if the transition were to be implemented in this way, "the commercial banks will be made to 'sell' their most marketable (and much of their best) assets to the Commission", and, as a result, "[t]he protection now given time and savings depositors in the commercial banks will thus be seriously reduced"[22].

For this reason, most proponents of the 100% scheme favored more amenable ways of implementing the transition. One of the solutions proposed by Fisher was to provide the banks with the newly required reserves via a loan from the Currency Commission:

> Perhaps the ideal method of treating the displaced assets would be to regard them as still belonging to the banks but held as collateral by the Currency Commission or Federal Reserve Banks, in consideration of a *loan* to the commercial banks of the new cash. . . . [T]he interest on the loan might be zero and the repayment distributed over a long term, say one tenth each year for 10 years. (Fisher 1935b, pp. 140-41, italics in original)[23]

In this way, although the transition to the 100% system would be immediate, the surrendering of Government bonds by the banks to the Currency Commission, in exchange for the newly required reserves, would only take place gradually. The 'transition seigniorage', however substantial it might be, would then allow for a gradual, rather than immediate, reduction in the national debt. It might even be cancelled out, should the newly required reserves be simply given, instead of lent, to the banks—an option contemplated at some point, for instance, by Fisher (1935b, p. 141n2) or Angell (1935, p. 30)[24].

---

[22] A similar point had previously been made by Currie ([1934a] 1968, p. 153).

[23] A very similar solution was put forward by Angell (1935, p. 30): "I propose that the commercial and Federal Reserve Banks give to the United States government a general prior lien on their total assets equal to the value of the new currency received. This lien will carry no interest, and will be repaid or otherwise extinguished only slowly, if at all".

[24] Fisher repeatedly insisted that the banks should be adversely impacted as little as possible by the reform, if at all. He justified his concern in the following terms: "There are many who might be inclined to ask why any sort of reimbursement is suggested for diminished earning power of the bank. . . . The answers are two. First, so far as possible, any sincere feeling . . . on the part of the bankers that

But even in this latter case, as we will now see, the 100% reform would still, according to its proponents, allow the state to reduce its debt through increased seigniorage revenue.

2.3. Seigniorage as a regular source of public revenue under the 100% system

The specific 'transition seigniorage' studied in Section 2.2 would only pertain to the *installation* of the 100% money system. Further seigniorage gains, however, would result from the regular *operation* of the system, whenever the money supply needed to be increased.

The monetary authority, under a 100% system, would issue money mainly by buying Government bonds, which would *de facto* be nonredeemable (or automatically renewed) so long as no tightening of the money supply was required. Only in the latter case would the Currency Commission ask the Government for their repayment (or refuse their renewal). But, as Fisher ([1935] 1945, p. 100) argued: "The buying [of securities by the Currency Commission] would predominate in the long run, because the growth of the country and of its business would continually require more money in order to sustain a given price level" [25]. The seigniorage revenue might therefore be expected to remain positive, and, under a 100% system, all of it would accrue to the state.

Under such system, as we saw in Section 2.1, the part of state-created money (M^S) in the total money supply (M) would always be equal to 100%. This implies that, for any positive variation of M occurring during a given period t, the part of the seigniorage revenue accruing to the state (S^S) would be maximized. We would have:

$$S^S_t/S_t = \Delta M^S_t / \Delta M_t = 1 \qquad (10)$$

This led the 100% money proponents to argue that in a growing economy requiring continual injections of new money, the Government would regularly benefit from seigniorage revenue. Hence, according to Currie:

> If the intention of the government were to maintain a stable price level this would probably call for a net addition to the supply of money over a period of years of from two to four per cent annually. This steadily increasing annual addition of money could

---

they were being unjustly treated, should be removed. . . . Secondly, not only most professional bankers but all who hold bank shares, the general public, have bought those shares in good faith and have a 'vested interest' which should be respected . . . They are 'innocent purchasers for value'" (Fisher [1935] 1945, p. 158).

[25] Currie ([1934a] 1968, p. 153) argued, in the same vein: "[A] curious thing is that a liability of the government which serves as money need hardly ever be met. In an expanding economy the quantity of money may be expected to increase indefinitely. Only occasionally will the government need to increase its interest-bearing debt or its taxes in order to extinguish or 'pay off' deposits."

> be used directly for the government expenses and in this way result in relatively lower taxes. (Currie [1934a] 1968, p. 154)

In Fisher's view, this would allow the national debt to eventually be extinguished:

> Eventually . . . there would probably be a complete elimination of Government debt. . . . In the end, it is at least conceivable that, with prosperity uninterrupted by any or many great depressions, the Government's main receipts would eventually come from the Currency Commission, merely by virtue of its efforts to prevent deflation by putting new money into circulation as business grows. (Fisher [1935] 1945, pp. 207-208)

Simons (1946, p. 87) expressed very similar arguments[26].

Many commentators, however, denied that any debt reduction, whether immediate or gradual, would follow from the 100% money reform at all. We will now examine their arguments.

3. Hart's criticism, and the refutation of the claim that the 100% money proposal would allow for any reduction of national debt

The 100% money authors, while arguing that their reform plan would make it possible to reduce national debt, specified at the same time that this advantage would probably be limited somewhat, to the extent that the Government would be taking on the costs of administering checking accounts—which the banks could no longer finance out of the seigniorage revenue accruing to them. This consideration, as we will see, would lead one of these authors, Albert G. Hart of the University of Chicago—as well as many commentators after him—, to conclude that the advantage in question should therefore be regarded as wholly illusory.

It would obviously be wrong, of course, to suppose that, under the existing system, the banks are able to retain for themselves all of the seigniorage revenue stemming from bank-created money (designated as S^B in Section 1.2). This could be possible if there were a single bank in a position of monopoly—as was, to some extent, the Bank of England in Ricardo's

[26] "[These measures] would offer a long-term prospect of retiring our interest-bearing debt at a more rapid rate, and within a shorter period, than otherwise would be possible. Suppose that we shall need, for stability at a proper postwar price level, only 100 billion dollars of money and deposits, and that, with rising real income, this amount must be increased secularly at 3 per cent per annum to sustain the price level. It thus appears that (save for nominal 'interest' paid as subsidy for banking services) we might retire our present interest-bearing debt in 30-40 years merely by extra budgetary measures, i.e., without having any net excess of tax revenues over expenditures during that period. Our debt being what it is, the government clearly should reappropriate its prerogative of issuing the country's money."

time in respect to the issuing of bank notes[27]. Under competition, however, the banks are pressured to pass the bulk of this gain over to their customers, as was stressed by the 100% money authors themselves. Hence, according to Fisher:

> [T]he banks' original inherent advantage . . . has long since been exhausted. The really big profit was squeezed out long ago. The very effort, under competition, to get that profit has reduced it—by offering interest on deposits and otherwise. (Fisher [1935] 1945, p. 155)

Thus, the additional seigniorage revenue gained by the state, should the 100% money system be adopted, would not simply be taken away from the banks. It would rather be gained, to a large extent, from the banks' customers, who can more properly be regarded as the actual beneficiaries of this profit under the present system.

The 100% money proponents—and their critics—have focused their attention on the case of checking depositors. Under the existing system, the seigniorage gained by the banks allows them to offer account management services in exchange for very low fees, if not for free. Under a 100% money system, however, the 100% reserve requirement behind checking deposits would no longer allow these particular deposits to be lent or invested[28]. The banks, therefore, would have to find other sources to cover the costs of administering checking accounts. Two main solutions were usually proposed. The first was to require each checking depositor to "pay a small service and warehouse charge to the bank for keeping his money and for keeping track of its transfers by check" (Fisher [1935] 1945, p. 153); in this way, "[t]he cost would . . . go where it belongs; that is, those would pay who get the service" (Fisher 1936a, p. 415). The second was to have the costs "borne, in whole or in part, by the Currency Commission on the same principle of public service which has resulted in removing 'brassage' charges at the mint and substituting gratuitous coinage at the expense of the government" (Fisher [1935] 1945, p. 153n1)—which would typically involve paying the banks a subsidy[29].

---

[27] The Bank of England had then been enjoying a partial monopoly since the Acts of 1708 and 1709, which prohibited any other institution of more than six partners from entering the banking business in England.

[28] Under Currie's and Fisher's proposals, however, the banks would remain perfectly free to lend or invest money collected through non-transferable savings deposits. This was a major difference with the Chicago Plan, under which the banks would no longer exert any lending function whatsoever and be replaced, in that regard, with investment trusts. See Demeulemeester (2018) [Chapter 3 of this thesis].

[29] Fisher ([1935] 1945, pp. 153n1, 156-57) also considered the possibility of "letting the banks continue for awhile to receive the revenues from their displaced assets", by allowing them to

The latter option was generally favored, for a reason explained by one of the co-authors of the Chicago Plan, Albert G. Hart—then a PhD student at the University of Chicago—, who commented extensively on the 100% money proposal in a 1935 article[30]:

> Two inferences may be drawn: that bankers would be willing to carry chequing accounts only subject to heavy service charges, and that they would be strongly tempted to devise means for making "savings deposits" in fact serve as means of payment. Bank customers, to avoid service charges, would be inclined to co-operate . . . [To keep down such practices] it would require a subsidy to bankers who carried chequing accounts, on such a basis as to prevent the growth of service charges to a point which would discourage the use of cheques. (Hart 1935, pp. 113-14)

Currie[31] and Fisher[32] had themselves noted that, should such a subsidy have to be paid to the banks, the benefit gained by the state in the form of avoided service charges might be cancelled. Hart made essentially the same remark:

> In view of the present state of bank earnings and of the very limited opportunities for economy on expenses, it would probably be considered appropriate to make this subsidy substantially equivalent to the earnings on the assets the banks were obliged to sell. (Hart 1935, p. 115)

He went further, however, adding in a footnote:

> This is the consideration which, as Professor Jacob Viner has suggested to the writer, destroys the claim that the '100 per cent. system' could be used to wipe out the national debt. (Hart 1935, p. 115n1)[33]

---

temporarily retain part of their Government bonds as reserve. Another option was to have checking accounts administered by Government agencies (Currie ([1934a] 1968, p. 151) or by the Post Office (see Hart 1935, p. 106). Still another suggestion, made by Friedman ([1960] 1992, pp. 71-75), was that the Government pay interest on the reserves held by the banks.

[30] Hart was also part, at that time, of the young economists temporarily recruited by the Treasury to work on monetary and banking studies, under the leadership of Jacob Viner – then special assistant to Secretary of the Treasury Henry Morgenthau (Phillips 1995, pp. 94-95). It is in his 1935 article that he coined the term 'Chicago Plan', which passed into posterity. Although he had himself been one of the eight co-authors of the Chicago memoranda of 1933, Hart held in this paper a very critical view of the proposal—but still concluded, at the time, that "reasoned advocacy of the '100 per cent. system' [was] possible" (Hart, 1935, p. 116). A decade later, however, he had changed his mind completely, arguing that "'100 Per Cent Money' should probably be written off as too shocking to be good practical counsel in foreseeable circumstances" (Hart, 1948, p. 449).

[31] "We must not make the mistake of assuming . . . that this represents a net social gain. If the government handles the deposits directly the expense involved must be deducted from the interest saved. If the existing organization is used it must be supported either by the government or by charges on depositors" (Currie [1934a] 1968, p. 154).

[32] "At first it might seem that this compensation would be very great—nearly equal . . . to the earnings from the assets bought by the Currency Commission. In fact, these earnings might seem to be the exact measure of the loss sustained" (Fisher [1935] 1945, p. 152). Fisher then added that the banks, under the improved business conditions which would prevail should the 100% system be adopted, would be likely to increase their profits, thereby reducing the need for a Government subsidy.

For this reason, Hart concluded that the claim that the 100% scheme would make it possible to cancel a large part of the national debt had to be considered as "illusory" and "fallacious" (pp. 105, 115).

The 100% money proponents never responded to this criticism and usually kept maintaining that their reform plan would allow the state to increase its revenue and reduce its debt. In academic discussions, however, many commentators would agree with Hart that, because of the need to subsidize banks for administering checking accounts, no substantial improvement of public finances (if any) could possibly follow from the 100% money reform. In other words, what we may call 'Hart's criticism' (or, perhaps, 'Viner/Hart's criticism') has become a "generally conceded point" in the literature, as G. R. Barber (1973, p. 122) observed[34].

Yet, as we will now see, although Hart's conclusion has not been much challenged, it appears to be questionable on at least two grounds.

4. The limitations of Hart's criticism: the need to consider all sources and beneficiaries of the seigniorage profit

According to Hart, as we saw, the claim that the 100% money scheme would reduce the national debt had to be regarded as wholly illusory, because the interest payments saved by the state (in the process of issuing money against its own bonds) would have to be transferred back to the banks (as a subsidy on checking accounts). Yet, even considering this latter equivalence to hold true—we saw that Currie and Fisher themselves, after all, seemed ready

[33] It is worth noting that Viner, himself a prominent University of Chicago economist, never added his signature to the memoranda on banking reform circulated by his colleagues in 1933, although he thought "there [was] much to be said for the one-hundred-percent-reserve idea" (Viner, letter to Frank Taussig, October 20, 1934, quoted in Allen 1993, p. 710n26). Frank Knight, when addressing the first of these memoranda to the Roosevelt administration in March 1933, commented in his letter: "I think Viner really agrees but doesn't believe it good politics" (Knight *et al.*, letter to Secretary of Agriculture Henry A. Wallace, March 16, 1933, reprinted in Phillips 1995, pp. 191-92). In 1937, however, Fisher complained to Simons that Viner seemed to be an "obstacle" to getting support for the 100% plan in Washington (Fisher, letter to Simons, January 29, 1937, Simons Papers, University of Chicago Library). Viner himself obviously held Fisher in very low esteem, viewing him as a "crank propagandist" (Viner, letter to Taussig, October 20, 1934, quoted in Allen 1993, p. 710n26).

[34] Hart's criticism has been shared, for example, by Angell (1935, p. 14), Lehmann (1936a, p. 55), Watkins (1938, pp. 41-42), Brown (1940, p. 311), Thomas (1940, p. 316), Higgins (1941, p. 93), Reeve (1943, p. 321), Hansen (1946, p. 71), Chapin (1959, p. A2.13), Tolley (1962, p. 280), Market (1967, pp. 100, 205), Barber (1973, pp. 121-22), McLane (1980, pp. 96-97) and, more recently, Fontana and Sawyer (2016, p. 1346).

to admit it—, it should be noted that Hart's conclusion rested on two further particular assumptions, which, as we will see, appear to be questionable. These pertain to the inflow (the sources) and to the outflow (the distribution) of the seigniorage benefit, respectively.

4.1. The sources of seigniorage: the need to consider all kinds of seigniorage profit

An initial limitation to Hart's criticism, which seems not to have been noted in the literature, relates to the *sources*—and, therefore, the estimated size—of seigniorage under a fiat currency regime. Hart seemed to suppose that the interest saved by the Government on its debt—which we have called *saved interest seigniorage* (S_{F2}) in Section 1.1—represented *all* the seigniorage benefit that would be gained by the state under a 100% money system. He did observe at some point that the avoidance of the debt principal repayment—which we have designated s*eigniorage proper* (S_{F1})—might be taken into account as well, however for some reason he clearly downplayed the significance of that gain:

> It would be possible, by converting the assets bought into government securities, to achieve a nominal cancellation of much of the principal of the debt. But the interest charge, which is the economic substance of the debt, would be replaced by the subsidy on chequing accounts. (Hart 1935, p. 115n1)

His conclusion, therefore, that no debt reduction should be expected from the 100% money reform at all, only rested on a partial account of the seigniorage benefit. Whatever reason led Hart to neglect the significance of S_{F1}, all of the commentators that endorsed his 'criticism' after him (see Section 3, note 34) would completely ignore this first source of seigniorage, and focus on the second source (S_{F2}) exclusively. This contrasted with the view held by the 100% money proponents, according to whom, as we saw in Section 2, the very amount of the newly created money (and not simply the interest charge avoided by its issuance) would add to the revenue of the state[35]. For this reason alone, one may wonder if the conclusion reached by Hart should not be questioned. A further reason, as we will now see, can be added.

[35] A further quotation by Douglas (1935, p. 185) may be added at this point: "In effect, therefore, the government would be able . . . to save the present interest payments of approximately one billion dollars a year. The government would also make an outright profit upon all fresh purchasing power which was created in addition to the original amount. . . . This would be in addition to savings upon the public debt of an approximately equal amount".

4.2. The distribution of seigniorage: the need to consider all beneficiaries of the seigniorage profit

A second limitation of Hart's criticism, which hasn't been stressed in the literature either, concerns the *distribution* of the seigniorage benefit. Hart—and his followers—seemed to assume that, under the existing monetary system, *all* the seigniorage revenue accruing to the banks was used to cover the costs of administering checking accounts, the holders of which, therefore, were considered to be the sole ultimate beneficiaries of the seigniorage profit. It followed from this view that, should the state bear these costs in place of the banks, no net seigniorage gain would be left for the Treasury.

However, one may question the assumption that, under the existing monetary system, the banks would share the profits of seigniorage with only one part of their customers (i.e. checking account holders) to the exclusion of the others (e.g. savings account holders, borrowers, etc.). This point was made by Maurice Allais, who insisted that the profits stemming from bank-created money were "shared among a large number of participants: *depositors, borrowers and the banks themselves*" (Allais 1987, p. 495, italics in original; see also 1975, p. 110; [1977] 1989, pp. 167, 182)[36]. Under the existing system, indeed, each class of bank customers may be regarded as benefitting from the seigniorage profit in one of the following ways[37]:

- *Checking depositors* can benefit from underpriced (if not free) services in the administration of their accounts (Allais 1975, p. 110; [1977] 1989, p. 167). This point, as seen in Section 3, was generally conceded both by the 100% money advocates and their critics.

- *Savings depositors* (and, sometimes, checking depositors as well) can benefit from higher interest payments on their deposits than otherwise (Allais 1975, p. 110; [1977] 1989, p. 167; 1987, p. 532; see also Fisher [1935] 1945, p. 155).

[36] Leland Yeager (1962b, pp. 20-21) also expressed the view that "[t]he issue of money without 100 per cent reserve backing obviously offers a profitable opportunity to reap seigniorage", and that, under the present system, "competition parcels out the seigniorage on deposit growth among the banks themselves and their depositors and borrower-customers". He further added that "legal reserve requirements transfer to the government or central bank part of the seigniorage that would otherwise go to bank customers and stockholders".

[37] As for the banks themselves, Allais did not specify how, placed in a situation of competition, they might be able to retain part of the seigniorage revenue for themselves.

- *Bank borrowers* can benefit from lower interest rates on their loans than otherwise (Allais 1975, p. 110; [1977] 1989, p. 167; 1987, p. 532)[38].

This is why, Allais argued, "it would be in the interest of the citizens that the benefit of money creation accrued to the state" ([1977] 1989, p. 192, my translation[39]), and not "to a minority only" (1967, p. 24, my translation[40]). He concluded that, if only for this reason, a 100% money reform should be advocated:

> In fact, two fundamental principles should lie at the root of any efficient reform of the credit system.
>
> (a) The creation of money should be the business of the state, and of nobody else. The state should be in full control of the money supply.
>
> (b) No money should be created outside the monetary base, so that nobody but the state would be entitled to the benefits that attach to the creation of bank money.
>
> (Allais 1987, p. 525)

Allais further claimed, far from Hart's conclusion—to which he unfortunately made no reference—, that the full return of the seigniorage benefit to the state would bring a net improvement of public finances. This could even be significant enough, in his view, to do away with personal income tax:

> It would be utterly wrong to underestimate the size of the increase in the money supply brought about through the credit mechanism. For example, in France it is of the same order of magnitude as the yield of personal income taxes. This suggests that even at a moderate pace of inflation corresponding to an expansion of the money supply at an annual rate of 8 or 9 per cent, rehabilitation of the state's right to issue money would yield enough to enable personal income tax to be done away with altogether. (Allais 1987, p. 519)

---

[38] Allais (1987, p. 532) thus argued that part of the seigniorage stemming from bank-created money benefitted "borrowers, who are charged less than the market rate that would otherwise prevail". He further specified: "But the system is even more complex. If indeed, for example, a firm, owing to the loans granted to it, is able to agree on wage increases higher than those it could otherwise agree on, the real diversion of the country's output, corresponding to the creation of false claims by the banking system, accrues in this case, partially at least, to the benefit of the personnel of the firm in question" (Allais [1977] 1989, p. 167, my translation) [*"Mais le système est encore plus complexe. Si en effet et par exemple une entreprise, en raison des prêts qui lui sont accordés, est en mesure de consentir à ceux qu'elle emploie des hausses de salaires plus élevées que celles qu'elle pourrait consentir autrement, le prélèvement réel sur la production du pays, correspondant à la création de faux droits par le système bancaire, se fait dans ce cas, au moins partiellement, au profit du personnel de l'entreprise considérée."*].

[39] "*. . . il serait de l'intérêt des citoyens que le bénéfice de la création monétaire revienne à l'État*".

[40] "*. . . à une minorité seulement"*.

However excessive Allais's arguments may have been, they certainly had the merit of highlighting the fact that, under the existing monetary system, the seigniorage benefit should be seen as accruing to a large number of beneficiaries, and not simply to the sole checking account holders. If the state were to assume the costs of administering checking deposits, then, contrary to what was claimed by Hart and his followers, the net seigniorage benefit to be gained from a 100% money reform might not be fully exhausted.

Summary and conclusion

The debates surrounding the 100% money proposal, which have been ongoing since the 1930s, offer an opportunity to study what may be called the 'seigniorage argument', according to which an increase in the part of state-created money in the total money supply (M^S/M), as against the part of bank-created money (M^B/M), would improve public finances. In the case of a 100% money system, the part of state-created money would be raised to 100%, thus maximizing the seigniorage revenue to be gained by the state. This led many proponents of the 100% scheme, such as Henry Simons, Lauchlin Currie and Irving Fisher, to argue that their reform plan would enable a reduction in national debt[41]. However, this claim has been discarded as purely illusory by most commentators of the proposal, following a criticism first expressed by Albert G. Hart (on the suggestion of Jacob Viner) in 1935. Considering that the Government, under a 100% money system, would be likely to pay the banks a subsidy for administering checking accounts—a consideration with which the 100% money authors themselves usually agreed—Hart concluded that no improvement of the state's finances could possibly follow from the 100% money reform. The 100% money authors never responded to Hart's criticism, which has become a largely conceded point in the literature on the subject. Yet, one may wonder if the conclusion reached by Hart, however large a consensus it may have reached, has not been drawn a little too hastily. A careful study of the arguments of the

[41] It should be noted that the 100% money proposal carries with it another argument pertaining to public debt, which has not been discussed in this paper as it is not relevant to seigniorage. This relates to the chief criticism addressed by the 100% money authors to the present system of bank-created money—viz., that the dependence of deposit currency (M') on bank loans is a source of cumulative processes, causing M' to behave pro-cyclically. Whereas, in the boom phase, too much money tends to be created out of bank loans, the opposite occurs in the depression phase when these loans are being liquidated. Maintaining the volume of means of payment, when the private sector is over-indebted and starts deleveraging, then requires the Government itself to go into debt with the banks. It was argued that under a 100% system, because money would be divorced from loans, the Government would be freed from the need to periodically increase its deficit to maintain the volume of circulating medium. See Fisher ([1935] 1945, p. 105).

100% money proponents reveals that it appears to be questionable on at least two grounds. An initial limitation of Hart's analysis relates to the sources of seigniorage. Hart, like most commentators after him, only focused on one component of the seigniorage benefit stemming from the issuance of fiat currency—namely, the avoided interest charge, which, in this paper, we have called 'saved interest seigniorage' (S_{F2}). For some reason, he neglected the other component, amounting to the full value of the newly created money, which we have referred to as 'seigniorage proper' (S_{F1}). A second limitation of his analysis pertains to the distribution of seigniorage. Hart's criticism implied that under the existing monetary system, all of the seigniorage benefit stemming from bank-created money would ultimately accrue to checking depositors in the form of free account management services. One may doubt, however, that the banks would transfer all the seigniorage profit accruing to them to only one class of their customers and exclude all others. As was argued by Allais, there is reason to believe that this benefit would rather be shared among all classes of bank customers, including, for example, savings depositors and borrowers. Should this view be correct, it follows that if the Government assumed the costs of managing checking accounts, under a 100% money system, the seigniorage benefit to be gained by the state would be far from exhausted. The 'seigniorage argument' of Simons, Currie and Fisher might then be afforded some consideration after all.

CONCLUSION GÉNÉRALE

1. Nos résultats de recherche

Cette thèse est partie du constat que la proposition 100% monnaie, telle qu'elle fut notamment formulée dans les années 1930 par Henry Simons, Lauchlin Currie ou Irving Fisher, était régulièrement sujette à confusion. Après avoir rappelé l'historique de cette proposition (chapitre 1), nous avons ainsi entrepris un effort de clarification de son concept (partie 1, composée des chapitres 2 et 3) et une étude de ses principaux arguments (partie 2, composée des chapitres 4 et 5), qui nous ont amené aux résultats suivants.

Dans le **chapitre 2**, nous avons montré que la proposition 100% monnaie ne pouvait être considérée comme une simple extension des préconisations de la *Currency School* – telles qu'incarnées dans le *Bank Charter Act* anglais de 1844 – aux dépôts transférables par chèque (et encore moins aux « dépôts » en général). Il est vrai que les deux types de réforme s'accordent sur un point essentiel : celui de considérer l'association entre création de monnaie et prêts de monnaie comme génératrice d'instabilité, et de proposer la séparation de ces deux fonctions. Mais l'Acte de 1844 va au-delà d'une simple réforme institutionnelle : il contient également, voire même surtout, une règle d'émission bien spécifique (le *currency principle*) visant à contraindre la politique monétaire. À l'inverse, la proposition 100% monnaie n'implique en elle-même aucune règle d'émission : elle relève *seulement* d'une réforme institutionnelle. Elle entend surtout faciliter la conduite de la politique monétaire, quel que soit l'objectif assigné à celle-ci, et quel que soit le degré de discrétion laissé à l'autorité monétaire. Cette distinction nous semble importante, car la proposition 100% monnaie est parfois considérée à tort comme contraignant nécessairement la politique monétaire au suivi d'une règle automatique, voire même assimilée à la préconisation d'une caisse d'émission (*currency board*) sur le modèle de l'Acte de 1844.

Dans le **chapitre 3**, nous avons établi une distinction entre deux grandes approches de la proposition 100% monnaie, fondamentalement différentes quant à leurs implications pour la sphère bancaire. Selon la première approche – que nous avons appelée l'approche « transaction », suivie en particulier par Currie et Fisher –, la monnaie est définie comme un synonyme de moyen de paiement, et l'instabilité monétaire s'explique avant tout par les variations de la quantité de monnaie (aggravées ensuite par les variations de sa vitesse de circulation). Il est donc simplement proposé d'imposer un coefficient de 100% de réserves aux dépôts de transaction, servant de moyens de paiement. Selon cette approche, les banques continueraient de collecter et d'investir des fonds prêtables au moyen de dépôts d'épargne, servant d'instruments de crédit : l'activité bancaire basée sur le principe des réserves

fractionnaires serait maintenue, mais le moyen d'échange n'en serait plus affecté. Les banques, en d'autres termes, continueraient de multiplier leurs promesses de payer au-delà de leur encaisse, mais ces promesses de payer ne seraient plus utilisables comme moyens de paiement (quant aux soldes de comptes courants couverts par 100% de réserves, ceux-ci correspondraient davantage à des « certificats de dépôts » qu'à des « promesses de payer »[1]). Selon la seconde approche – que nous avons appelée l'approche « liquidité », suivie en particulier par les auteurs du Plan de Chicago –, le concept de monnaie est étendu aux actifs liquides (facilement échangeables contre des moyens de paiement), et l'instabilité monétaire s'explique tout autant (si ce n'est plus) par les variations de la vitesse de circulation du moyen d'échange que par celles de son volume. Le système bancaire à réserves fractionnaires est ici condamné dans son existence même : il crée des actifs liquides (dépôts à valeur nominale fixe et exigibles à court terme) qui, même sans être eux-mêmes utilisables comme moyens de paiement, vont exacerber les mouvements de thésaurisation et déthésaurisation de la monnaie. Il est donc proposé non seulement de mettre fin à la création et destruction de moyens de paiement par les banques, mais également d'interdire toute intermédiation bancaire (impliquant une transformation des risques et des maturités) à partir de dépôts d'épargne. Le financement des prêts serait exclusivement assuré par des fonds mutuels, investissant leur propre capital uniquement. La distinction entre ces deux approches nous paraît fondamentale, car la proposition 100% monnaie est souvent rejetée pour le seul motif qu'elle mettrait nécessairement fin à l'activité bancaire.

De la **partie 1**, composée de ces deux chapitres, ressort une conclusion d'ensemble sur la nature de la proposition 100% monnaie. Celle-ci consiste fondamentalement, selon nous, en une réforme de la *convention sociale* décidant du moyen d'échange de la communauté. Il est proposé de sortir de la convention existante, largement basée sur l'utilisation monétaire (comme moyens de paiement) des promesses de payer émises par les banques, pour entrer dans une nouvelle convention, basée sur la seule utilisation de moyens de paiement émis par l'État. L'on passerait ainsi d'une circulation monétaire mixte à une circulation homogène. Tel est le dénominateur commun des différentes versions de la proposition. Celle-ci n'implique, en elle-même, ni de réforme du *système bancaire*, basé sur le réinvestissement par les banques

[1] Comme certains auteurs l'ont fait remarquer, cela reviendrait à rendre le système monétaire et bancaire conforme à l'image qu'en a déjà une grande partie du public, qui s'imagine souvent que la création de monnaie relève d'un privilège exclusif de l'État (ou de la banque centrale), et que seuls les comptes d'épargne (mais non les comptes courants) servent à financer les prêts et investissements des banques.

de fonds collectés au moyen de contrats de dépôts, ni de prescription liée à la *politique monétaire*, décidant des objectifs assignés à l'émission de monnaie. Le fait que la proposition 100% monnaie puisse être combinée avec de telles réformes ne doit pas empêcher de délimiter précisément l'essence de son concept. L'intérêt d'effectuer un tel changement de la convention sociale monétaire a fait l'objet des deux chapitres suivants.

Dans le **chapitre 4**, nous avons étudié l'argument principal de la proposition 100% monnaie des années 1930 – celui de mettre fin au comportement intrinsèquement procyclique de la monnaie bancaire – à travers un prisme spécifique : celui des travaux d'Irving Fisher. Comme nous l'avons mis en évidence, l'ensemble des théories de l'instabilité monétaire développées par celui-ci au cours de sa carrière reposaient sur un schéma constant, que nous avons appelé le « triangle dette-monnaie-prix » (ou « triangle d'instabilité »), désignant les interactions cumulatives entre volume des prêts, volume de monnaie bancaire, et niveau général des prix. Ainsi, la théorie des cycles de crédit développée par Fisher en 1911, sa théorie de la dette-déflation exposée en 1932-33, et son analyse du lien monnaie-dette de 1935 (sous-tendant la proposition 100% monnaie) peuvent être lues comme autant d'étapes d'un long cheminement analytique, dont la proposition 100% monnaie constituerait l'aboutissement logique. Au-delà du fait de proposer une mise en cohérence des théories de l'instabilité chez Fisher, l'intérêt de ce chapitre a été de mettre en évidence que la proposition 100% monnaie ne se limitait pas à un simple plan de réforme *pratique* visant à faciliter le contrôle du volume de monnaie. Elle implique également une proposition *théorique*, identifiant le lien de dépendance entre monnaie et prêts comme le principal facteur causal de l'instabilité monétaire. Il nous a semblé d'autant plus important de le souligner que cet argument a souvent été perdu de vue dans les discussions sur le 100% monnaie, y compris chez certains auteurs ayant eux-mêmes soutenu ce plan de réforme en insistant sur d'autres avantages (tels que la sécurisation du système de paiement).

Dans le **chapitre 5**, nous nous sommes intéressés à un autre grand argument de la proposition 100% monnaie : celui de permettre à l'État de réduire sa dette (ou d'augmenter ses recettes) en faisant bénéficier le Trésor public de l'intégralité des revenus de la création monétaire. Cet « argument du seigneuriage » fut très largement rejeté dans la littérature secondaire, suite à ce que nous avons appelé la « critique de Hart », autour de laquelle s'est formé un vaste consensus. Parce que l'État, dans un système 100% monnaie, serait probablement amené à prendre lui-même en charge les frais de gestion des comptes de paiement, il était considéré que le bénéfice du seigneuriage serait complètement annulé,

empêchant toute réduction de la dette publique par ce moyen. Nous nous sommes efforcés de montrer que cette critique de Hart devait-elle-même être remise en cause, au motif qu'elle repose sur une analyse très partielle du seigneuriage, ignorant toute à la fois une partie de ses sources et une partie de ses bénéficiaires. Nous en avons conclu que l'argument du seigneuriage avancé par les auteurs du 100% monnaie était loin d'être infondé – ce qui n'est pas anodin lorsque l'on sait à quel point l'endettement public est préoccupant de nos jours.

De la **partie 2**, composée de ces deux derniers chapitres, ressort une conclusion d'ensemble sur l'intérêt d'une réforme 100% monnaie. Il est trop souvent considéré que l'objectif premier d'une telle réforme est de protéger les déposants du risque de faillites bancaires. Or, si la sécurisation du système de paiement constitue indéniablement l'un des avantages attribués à cette proposition, elle n'en constitue selon ses auteurs mêmes ni l'avantage principal, ni même un avantage propre, d'autres types de mesures (telles que l'assurance des dépôts) pouvant remplir ce même objectif. Nous nous sommes donc concentrés sur deux arguments spécifiques à la proposition 100% monnaie : celui de mettre fin au caractère intrinsèquement procyclique de la création monétaire par le mécanisme du crédit, et celui de rendre à l'État l'intégralité des revenus liés à l'émission de monnaie. Il ressort de notre étude que ces arguments mériteraient tous deux d'être considérés avec davantage d'attention qu'ils n'en ont reçue jusqu'ici dans la littérature : le premier, car il constitue selon nous l'aboutissement logique de l'ensemble des travaux d'Irving Fisher sur l'instabilité monétaire, comme nous avons cherché à le montrer dans le chapitre 4 ; le second, car il a été trop rapidement rejeté pour des motifs non valables dans les discussions académiques, comme nous avons cherché à le montrer dans le chapitre 5.

Notre **conclusion générale** sur l'ensemble de cette thèse est que la proposition 100% monnaie des années 1930 mérite clairement d'être redécouverte et davantage discutée. Nous pensons avoir montré, par notre étude, qu'un certain nombre des critiques qui lui étaient régulièrement adressées relevaient d'idées reçues. Il nous est paru d'autant plus important de procéder à ce travail de clarification conceptuelle et d'analyse théorique que la proposition 100% monnaie, ainsi que nous l'avons indiqué, suscite un regain d'intérêt depuis la crise de 2008. Les débats actuels témoignent souvent d'une grande confusion lorsqu'il est fait référence aux plans de Fisher ou de Chicago. Les partisans actuels de cette idée de réforme se réfèrent d'ailleurs assez peu aux théoriciens des années 1930, dont les travaux sont pourtant éclairants à bien des égards. Nous espérons avoir montré à quel point ces auteurs d'hier pouvaient contribuer aux débats d'aujourd'hui. À ce jour, aucun système 100% monnaie n'a

encore jamais été mis en œuvre, et beaucoup considèrent, comme Martin Wolf, qu'il vaudrait assurément la peine de l'expérimenter[2]. Pour autant, tout aussi intéressante que soit la perspective d'une expérimentation de ce type de réforme, force est de constater que son examen sur le plan de l'analyse théorique est loin d'avoir été épuisé. De manière évidente, la proposition 100% monnaie n'a finalement été que très peu étudiée dans l'histoire des idées. Il s'agit là d'un autre élément de conclusion en soi : bien que les travaux des auteurs ayant formulé cette proposition soient extrêmement riches en enseignements, cette richesse reste largement à exploiter. Cela nous mène à la question des limites de cette thèse, et des pistes de recherche qu'elle permet d'ouvrir.

2. Limites de la thèse et pistes de recherche à approfondir

Une première limite évidente de la présente thèse, que nous sommes forcés de concéder, est que celle-ci est loin d'avoir épuisé son sujet : celui d'une clarification conceptuelle de la proposition 100% monnaie des années 1930 et d'une analyse théorique de ses arguments. Nous avons comparé la proposition 100% monnaie aux idées de réforme de la *Currency School*, et souligné les divergences entre les plans de réforme de Currie et Fisher d'un côté, et des économistes de Chicago de l'autre. La proposition 100% monnaie est cependant sujette à d'autres types de confusion, que nous n'avons pu traiter en détail. Elle est par exemple souvent assimilée, comme nous l'avons déjà mentionné, à la proposition de *narrow banking* qui fut formulée dans les années 1980, et continue d'être préconisée par certains auteurs. Une analyse comparative détaillée de ces deux types de propositions reste à effectuer[3]. Nous avons ensuite étudié deux des arguments de la proposition 100% monnaie, celui de mettre fin au caractère cumulatif de la création monétaire issue des prêts bancaire, et celui de rendre à l'État l'intégralité du seigneuriage. Cependant d'autres arguments de cette proposition mériteraient d'être traités en détail. Comme nous l'avons expliqué plus haut, nous avons choisi de ne pas insister dans cette thèse sur l'avantage du système 100% monnaie en matière de protection des déposants et de sûreté du système de paiement, pour diverses raisons : cet argument était jugé relativement secondaire par les auteurs des années 1930 eux-mêmes ; son

[2] "Experiment is essential. The Chicago Plan or variants upon it is *definitely* an experiment worth making" (Wolf 2014a, p. 213, italiques dans l'original).

[3] La ressemblance entre la proposition 100% monnaie et celle du *narrow banking* a été notée par divers auteurs, par exemple Phillips (1995, pp. 174-80) ou Diatkine (2003). Leurs différences, cependant, ont été peu soulignées.

objectif pouvait être atteint par d'autres moyens ; et, des avantages de la proposition, c'est sûrement celui qui a reçu le plus d'attention dans la littérature. Pour autant, il serait assurément très utile de redécouvrir les arguments des « auteurs 100% » sur cette question, qui reste éminemment d'actualité – comme en témoignent les nombreuses difficultés en matière de régulation bancaire et les limites du système de l'assurance des dépôts. Une analyse comparative de la proposition 100% monnaie et du *narrow banking* offrirait d'ailleurs une excellente occasion d'aborder ce sujet ; cela permettrait également d'étudier plus en détail les travaux de certains auteurs, tels que Tobin ou Minsky, qui n'ont été que brièvement mentionnés dans cette thèse. Nous n'avons pas non plus insisté outre-mesure sur l'argument selon lequel le système 100% monnaie permettrait de faciliter et améliorer le contrôle monétaire. En effet, un tel avantage découlerait principalement du fait qu'il serait mis fin au comportement intrinsèquement procyclique de la monnaie bancaire, argument que nous avons étudié en particulier au chapitre 4. Mais cette seule considération est loin d'épuiser l'argumentation de la proposition 100% monnaie concernant le contrôle monétaire ; là encore, il reste assurément beaucoup à écrire[4]. Nous avons également laissé de côté l'argument selon lequel le système 100% monnaie permettrait au taux d'intérêt d'être déterminé de manière « naturelle », par la seule confrontation entre l'offre et la demande de fonds prêtables, sans création de monnaie par les banques ni de manipulation des taux par l'autorité monétaire. Cet argument, en effet, fut relativement peu développé par les auteurs sur lesquels notre travail de thèse s'est concentré ; il entre surtout en résonance, comme nous l'avons déjà mentionné, avec les travaux d'un autre ensemble d'économistes, incluant par exemple Mises ou Allais (nous y reviendrons ci-après). Nous n'avons pas, enfin, traité d'une objection importante parfois adressée au système 100% monnaie : celle selon laquelle ce système empêcherait la quantité de monnaie – ou l'offre de prêts, ces deux aspects étant parfois confondus – de s'adapter de manière élastique aux besoins de l'économie. La question de savoir si la création monétaire doit être endogène ou exogène renvoie à une importante littérature, que nous

[4] Notre travail de recherche s'était d'ailleurs initialement dirigé vers l'étude de cet argument, au travers d'un papier – non inclus dans la présente thèse – présenté lors du 16e colloque international de l'Association Charles Gide en avril 2016 à l'Université de Strasbourg, ainsi que lors de la 43e conférence annuelle de l'*History of Economics Society* en juin 2016 à l'Université de Duke (États-Unis) (Demeulemeester 2016). Cependant, nous nous sommes vite rendus compte qu'aborder cette question nécessitait au préalable d'effectuer une clarification conceptuelle de la proposition 100% monnaie, et d'étudier en détail l'argument principal de celle-ci lié au comportement procyclique de la monnaie bancaire. Ces bases étant maintenant posées, nous envisageons de reprendre prochainement cette étude là où nous l'avions laissée.

aimerions aborder dans le cadre d'un futur travail de recherche[5]. Rappelons simplement ici que la proposition 100% monnaie, en elle-même, n'envisage de rendre que la *fourniture* de monnaie exogène : celle-ci serait entièrement assurée par une autorité monétaire publique, extérieure au marché. Rien n'empêcherait en revanche que la *détermination* du volume de monnaie (*M*) soit quant à elle endogène, résultant des besoins de l'économie. Tel serait le cas s'il était décidé, par exemple, d'assigner à l'autorité monétaire l'objectif d'une stabilisation du niveau général des prix (*P*), tel que le préconisait Fisher notamment. D'après ce dernier, une croissance du volume réel des échanges (*T*) entraînerait, toutes choses égales par ailleurs, une pression à la baisse sur *P*, obligeant l'autorité monétaire à augmenter *M*. En d'autres termes, l'« offre » de monnaie (exogène) serait constamment ajustée pour s'adapter à l'évolution de sa « demande » (endogène), exprimée par l'évolution du niveau général des prix (*P*). Telle était, nous l'avons vu, la conception d'une monnaie élastique selon Fisher ([1935] 1945, pp. 110-11, 177), qui insistait sur l'importance pour la Commission monétaire de suivre une gamme d'indicateurs la plus large possible, permettant d'anticiper au mieux toute variation de *P* et d'adapter *M* au plus tôt. Rappelons enfin que la stabilisation de *P*, pour cet auteur, n'était pas qu'un simple moyen de rendre la monnaie élastique : elle permettait avant tout de stabiliser le pouvoir d'achat de l'unité monétaire, condition d'un fonctionnement optimal des échanges.

Une autre limite de cette thèse concerne le périmètre de son sujet lui-même. En nous concentrant sur la clarification conceptuelle et l'analyse théorique, nous avons choisi de laisser de côté les questions liées à la mise en œuvre pratique de la proposition 100% monnaie. Il est vrai que les auteurs de cette proposition eux-mêmes se sont surtout attachés à élaborer son argumentation, ne s'estimant pas les plus qualifiés pour concevoir les détails de sa mise en application. Simons, comme nous l'avons noté au chapitre 1, ne s'estimait pas en capacité d'entreprendre la rédaction d'un projet de loi dans son ensemble, et Fisher, bien qu'il contribuât quant à lui très activement à la rédaction de plusieurs projets, était également conscient de ses propres limites[6]. Ces auteurs ont cependant longuement discuté de certaines difficultés liées à la mise en œuvre de leurs plans de réforme respectifs, et les discussions

[5] Cette question constituait déjà l'un des points de divergence entre les auteurs de la *Currency School* et ceux de la *Banking School*. Le périmètre de discussion restreint du chapitre 2 ne nous a malheureusement pas permis d'aborder cette controverse en détail.

[6] "Actually to crystallize the 100% system into law and to combine it with a plan for stabilizing the purchasing power of the dollar will require the attention of those better fitted than I to choose between the available alternatives and to formulate the legal specifications necessary to carry out any detailed plan" (Fisher [1935] 1945, p. xvi).

académiques se sont d'ailleurs en partie focalisées sur ces questions. Beaucoup de commentateurs s'interrogeaient, par exemple, sur la manière dont la rémunération du service de gestion des comptes courants (soumis à 100% de réserve) pourrait être assurée, ou sur les possibilités pratiques d'éviter le recours à des substituts monétaires proscrits par la loi. Bien que ces questions sortent du cadre assigné à la présente thèse, elles n'en sont pas moins fondamentales, et nous espérons pouvoir les aborder dans le cadre de futurs travaux. Par ailleurs, en nous concentrant sur la proposition 100% monnaie « des années 1930 », nous n'avons pas traité en détail des travaux des auteurs ayant formulé ce type de proposition avant ou après cette période. Il y a certainement des enseignements à tirer d'une exploitation plus approfondie de toute cette littérature.

L'élargissement de notre périmètre de recherche permettrait d'aborder un vaste ensemble de questions. La proposition 100% monnaie, comme nous l'avons vu, fut avant tout envisagée par ses théoriciens des années 1930 comme un moyen de mettre fin au comportement intrinsèquement procyclique de la monnaie bancaire, cause de spirales inflationnistes ou déflationnistes. Il serait intéressant d'effectuer une comparaison de leurs analyses avec les théories de l'instabilité monétaire élaborées par des auteurs tels que Marshall, Wicksell ou Hawtrey, par exemple. Nous avons également mentionné plus haut l'argument selon lequel, dans un système 100% monnaie, le taux d'intérêt pourrait être « naturellement » déterminé par la seule loi du marché. L'offre de prêts des banques dépendrait en effet principalement du montant de l'épargne préalablement collectée auprès de leurs déposants, sans pouvoir être augmentée par la création de moyens de paiement par les banques elles-mêmes. De plus, la création de monnaie cessant de dépendre des prêts bancaires, l'autorité monétaire n'aurait plus à interférer avec le prix de ce marché pour réguler la quantité de monnaie : la manipulation des taux cesserait. Cet argument, bien que noté par Fisher ([1935] 1945 pp. 139-140), ne fut pas particulièrement développé par les « auteurs 100% » des années 1930. Il était par contre au cœur de la préconisation d'une telle réforme par Mises, dont la théorie des cycles était largement basée sur l'écart entre taux naturel et taux bancaire. Cette distorsion des taux est également centrale chez Allais. Là encore, des connexions sont certainement à établir, non seulement avec l'analyse des processus cumulatifs de Wicksell, mais aussi avec la théorie de l'épargne forcée (*forced saving*) telle qu'elle fut développée, à la suite de Mises, par Hayek notamment. Une autre question qu'il serait intéressant d'étudier en lien avec la proposition 100% monnaie est celle du *lieu d'injection* de la création monétaire, et de son impact sur la structure des prix relatifs. Cette interrogation, qui va au-delà des seules considérations liées au

taux d'intérêt, renvoie à une vaste littérature remontant au moins jusqu'à Richard Cantillon[7]. En étant émise par les banques, la monnaie nouvellement créée atteint nécessairement l'économie *là où les banques prêtent*, et il est légitime de se demander dans quelle mesure cela peut contribuer à engendrer des phénomènes d'inflation sectorielle – sur les marchés financiers ou de l'immobilier en particulier – ne se reflétant pas nécessairement dans les indices de prix utilisés par les banques centrales[8]. Ces dernières, lorsqu'elles injectent la « monnaie centrale » dans l'économie – que ce soit de manière conventionnelle ou non – impactent elles-mêmes la structure des prix relatifs, non seulement par leur manipulation des taux, mais aussi par le choix des marchés sur lesquels elles vont intervenir. Une vaste littérature récente s'est ainsi interrogée sur les effets redistributifs de la politique monétaire et son impact sur les inégalités[9]. Fisher lui-même, comme nous l'avons noté (chapitre 4, note 26), avait parfaitement conscience que l'inflation pouvait se développer sur le marché des actions en particulier, sans que le niveau des prix des biens de consommation n'en soit affecté pour autant. La considération de l'impact de la politique monétaire sur la structure des prix relatifs n'était pas non plus totalement absente de ses écrits (voir par exemple Fisher [1935] 1945, p. 112). On peut cependant regretter qu'il n'ait jamais accordé beaucoup d'attention à la question du lieu d'injection de la monnaie. Car, à cet égard, la proposition 100% monnaie présente potentiellement un autre argument fort : elle offre la possibilité d'une injection monétaire plus homogène sur l'ensemble du marché, qui minimiserait ses effets disruptifs sur la structure des prix relatifs. Cela dépendrait, évidemment, du mode d'injection choisi – une

[7] Laidler (1988, p. 90, ma traduction) mentionne ainsi une longue série d'auteurs – incluant Cantillon, Thornton, Malthus, Cairnes, J. S. Mill et Hayek – selon qui « une injection de monnaie dans l'économie aurait des conséquences réelles significativement différentes en fonction des marchés particuliers à travers lesquels elle se retrouverait pour la première fois entre les mains du public » ["an injection of money into the economy would have significantly different real consequences depending upon the particular markets through which it first came into the hands of the public"]. Certains partisans modernes d'une réforme 100% monnaie ont inclus ce type de réflexion dans leur argumentaire (voir par exemple Huber 2017, p. 124).

[8] À ce sujet, voir par exemple l'étude de Jordà, Schularick et Taylor (2016) sur la concentration toujours croissante, depuis le milieu du XXe siècle, du crédit bancaire sur le marché de l'immobilier – phénomène qu'ils ont appelé "*The Great Mortgaging*". Comme l'observe également Wolf (2014a, p. 199) au sujet de la crise de 2008 : "The implicit answer of the pre-crisis official orthodoxy was that central banks would stop the excess credit expansion in time . . . by responding to rising inflation in the prices of goods and services. But that signal would fail if rising asset prices and expanding credit were not closely related to inflation. That is precisely what happened in the 2000s. Thus, the period before the crisis saw . . . a lack of inflationary pressure in the world as a whole . . . But asset prices – house prices, above all – rose substantially".

[9] Voir par exemple Furceri *et al*. (2018), Doepke *et al*. (2019), El Herradi et Leroy (2019).

autre question que nous n'avons pu aborder en détail dans le cadre de la présente thèse[10]. En tout état de cause, nombreux sont les arguments selon lesquels, *même lorsque l'indice des prix à la consommation est maintenu stable*, le système monétaire existant exercerait d'importants effets distordants sur l'économie. L'articulation de ces réflexions avec les travaux des « auteurs 100% » ouvre, indéniablement, plusieurs pistes de recherche en histoire de la pensée économique. L'ensemble de ces questions invite par ailleurs à réinterroger la *neutralité* de la monnaie, que la théorie économique tient souvent pour acquise. La proposition 100% monnaie insiste au contraire que, loin de pouvoir être postulée dans les faits, la réalisation d'une telle neutralité nécessite au préalable une réforme en profondeur de la convention sociale monétaire. Une grande partie des économistes, serait-on tenté de penser, raisonnent comme si un système 100% monnaie était déjà en place[11]. Il est pourtant loin d'être anodin que deux des principaux théoriciens de l'équilibre général, Walras et Fisher, aient chacun insisté sur l'importance d'empêcher que les promesses de payer ne puissent elles-mêmes servir de moyens de paiement, et aient tous deux recommandé l'adoption d'une réforme de type 100% monnaie, faute de quoi le système serait instable, les échanges faussés, et l'équilibre sérieusement perturbé[12]. Il y a certainement, là encore, une réflexion à approfondir. Il serait bien sûr intéressant, enfin, de s'interroger sur la mise en résonance de la proposition 100% monnaie (et de toute l'analyse qu'elle renferme) avec la « Théorie générale » de Keynes. Sur la question des limites du taux d'intérêt comme coordinateur des décisions d'épargne et d'investissement, ou celle de l'inefficacité de la politique monétaire en

---

[10] Ainsi, une injection par voie de crédit d'impôt bénéficiant à l'ensemble des contribuables, ou par versement d'une allocation à l'ensemble des citoyens, serait assurément plus homogène qu'une injection par voie de dépenses publiques ou d'opérations d'*open market*, par lesquelles la monnaie n'entrerait en existence que sur certains segments particuliers du marché. Notons également qu'avec une injection monétaire plus homogène, l'indice des prix à la consommation reflèterait peut-être plus fidèlement l'évolution du niveau *général* des prix, et que la question de l'effet retardé (*lag in effect*) de la politique monétaire sur cet indice pourrait se poser avec moins d'acuité. Rappelons à cet égard que les auteurs du Plan du Chicago (Simons et Mints en particulier) insistaient beaucoup sur l'importance de combiner la politique monétaire avec la politique fiscale, afin d'en accroître l'efficacité (voir par exemple Simons *et al*. [1933] 1994, p. 38).

[11] Cela avait déjà été observé par Kregel (1996, pp. 658-59) : "[M]odels of monetarist inspiration presume that the money supply is subject to exogenous determination . . . The textbook IS-LM approach . . . also presumes that the money supply may be exogenously fixed and subject to control by the monetary authority. . . It seems that the only way out of this contradictory treatment of the supply of money is to presume that there is only outside or central bank money . . . This is equivalent to 100 per cent reserves on commercial banks; modern theory thus seems to reason as if it had already been introduced!"

[12] Rappelons que Fisher ([1892] 1925), dans sa thèse de doctorat, avait développé la théorie de l'équilibre général indépendamment des travaux de Walras. Voir Ben-El-Mechaiekh et Dimand (2012) et Dimand (2019, chapitre 2).

cas de taux d'intérêt nominaux proches de zéro, la proposition 100% monnaie a de manière évidente des arguments à avancer, en offrant d'un côté de libérer le marché des prêts des interférences de la politique monétaire, et de l'autre de libérer la politique monétaire des interférences du marché des prêts. Quant à la justification d'une politique budgétaire déficitaire pour relancer l'économie, nous avons vu quelle était l'interprétation des « auteurs 100% » sur ce point : tant que la création de monnaie dépend des prêts, alors l'État devra ponctuellement creuser son déficit, pour éviter toute contraction du volume de monnaie lorsque le secteur privé se désendette. La mise en comparaison de cette grille de lecture avec celle proposée par Keynes reste néanmoins à effectuer.

L'ensemble de ces questions offre assurément matière à un vaste programme de recherche, que nous espérons pouvoir mener dans les années à venir.

BIBLIOGRAPHIE

Alchian, Armen A., et Benjamin Klein. 1973. “On a Correct Measure of Inflation.” *Journal of Money, Credit and Banking* 5 (1) : 173.

Aliber, Robert Z., et Charles P. Kindleberger. [1978] 2015. *Manias, Panics and Crashes: A History of Financial Crises*. Septième édition. Basingstoke, Hampshire : Palgrave Macmillan.

Allais, Maurice. 1947. *Économie et intérêt. Présentation nouvelle des problèmes fondamentaux relatifs au rôle économique du taux de l’intérêt et de leurs solutions*. Paris : Librairie des publications officielles.

Allais, Maurice. 1967a. *Les Conditions de l’expansion dans la stabilité sur le plan national*. Paris : Sirey.

Allais, Maurice. 1967b. “Growth Without Inflation.” *Il Politico* 32 (2) : 348–354.

Allais, Maurice. 1975. “Le Concept de monnaie, la création de monnaie et de pouvoir d’achat par le mécanisme du crédit et ses implications.” In : P. Coulbois (ed.), *Essais en l’honneur de Jean Marchal. 2, La Monnaie*, 106–145. Paris : Cujas.

Allais, Maurice. [1977] 1989. *L’Impôt sur le capital et la réforme monétaire.* Nouvelle édition. Paris : Hermann.

Allais, Maurice. 1987. “The Credit Mechanism and Its Implications.” In : Feiwel, G. (ed.), *Arrow and the Foundations of the Theory of Economic Policy*, 491–561. New York, NY : New York University Press.

Allais, Maurice. 1999. *La Crise mondiale d’aujourd’hui. Pour de profondes réformes des institutions financières et monétaires*. Paris : Clément Juglar.

Allen, William R. 1977. “Irving Fisher, FDR, and the Great Depression.” *History of Political Economy* 9 (4) : 560–587.

Allen, William R. 1993. “Irving Fisher and the 100 Percent Reserve Proposal.” *Journal of Law and Economics* 36 (2) : 703–717.

Anderson, Benjamin M. 1935a. *A Critical Analysis of the Book by Lauchlin Currie, Ph.D., “The Supply and Control of Money in the United States.”* New York, NY : American Statistical Association.

Anderson, Benjamin M. 1935b. “The Supply and Control of Money: A Note.” *The Quarterly Journal of Economics* 49 (4) : 705.

Angell, James W. 1927. “Reviewed Work: ‘Wealth, Virtual Wealth, and Debt’, by F. Soddy.” *Political Science Quarterly* 42 (4) : 621–624.

Angell, James W. 1935. “The 100 Per Cent Reserve Plan.” *The Quarterly Journal of Economics* 50 (1) : 1–35. Reproduit dans Dimand (2007), Vol. 3.

Arakie, Ralph. 1933. “Reviewed Work: ‘Booms and Depressions: Some First Principles’, by Irving Fisher”. *Economica*, 42 (November) : 484–487. Reproduit dans Dimand (2007), Vol. 3.

Arnon, Arie. 2011. *Monetary Theory and Policy from Hume and Smith to Wicksell. Money, Credit and the Economy*. New York, NY : Cambridge University Press.

Assous, Michaël. 2013. “Irving Fisher’s Debt Deflation Analysis: From the *Purchasing Power of Money* (1911) to the *Debt-Deflation Theory of the Great Depression* (1933).” *The European Journal of the History of Economic Thought* 20 (2) : 305–322.

Baltensperger, Ernst. 1982. “Reserve Requirements and Economic Stability.” *Journal of Money, Credit and Banking* 14 (2) : 205–215.

Barber, G. Russell. 1973. “The One Hundred Percent Reserve System.” *The American Economist* 17 (1) : 115–127.

Barber, William J. 1985. *From New Era to New Deal: Herbert Hoover, the Economists, and American Economic Policy, 1921-1933*. Cambridge, UK : Cambridge University Press.

Barber, William J. 1996. *Designs within Disorder: Franklin D. Roosevelt, the Economists, and the Shaping of American Economic Policy, 1933-1945*. Cambridge, UK : Cambridge University Press.

Barber, William J. (ed.), assisté de Robert W. Dimand et Kevin Foster, éditeur consultant James Tobin. 1997. *The Works of Irving Fisher. 14 Volumes*. London : Pickering & Chatto.

Ben-El-Mechaiekh, Hichem, et Robert W. Dimand. 2012. “General Equilibrium Reaches North America: Irving Fisher’s ‘Mathematical Investigations in the Theory of Value and Prices.’” *Journal of Economic and Social Measurement* 37 (1) : 97–118.

Benes, Jaromir, et Michael Kumhof. 2012. “The Chicago Plan Revisited”. IMF Working Paper WP/12/202, Fonds monétaire international.

Benes, Jaromir, et Michael Kumhof. [2012] 2013. “The Chicago Plan Revisited”. Version révisée.

Béraud, Alain, et Gilbert Faccarello, eds. 2000. *Nouvelle histoire de la pensée économique. Tome 3. Des institutionnalistes à la période contemporaine*. Paris : La Découverte.

Bernholz, Peter. 1989. “Ordo-Liberals and the Control of the Money Supply.” In : A. Peacock et H. Willgerodt (eds.), *German Neo-Liberals and the Social Market Economy*, 191–215. London : Palgrave Macmillan.

Black, S. 1987. “Seigniorage.” In : J. Eatwell, M. Milgate et P. Newman (eds.), *The New Palgrave: A Dictionary of Economics*, 9046–9047. London : Macmillan.

Blanchard, Olivier. 2017. *Macroeconomics.* Septième édition. Boston : Pearson.

Blaug, Mark. [1962] 1997. *Economic Theory in Retrospect*. Cinquième édition. Cambridge, UK : Cambridge University Press.

Bromberg, Benjamin. 1939. “Two Neglected Twentieth Century 100 Per Cent Reserve Economists.” *The American Economic Review* 29 (3) : 553.

Brown, Harry Gunnison. 1940. “Objections to the 100 Per Cent Reserve Plan.” *The American Economic Review* 26 (3) : 309–314. Reproduit dans Dimand (2007), Vol. 3.

Buchanan, James M. 2010a. “The Constitutionalization of Money.” *Cato Journal* 30 (2) : 251–258.

Buchanan, James M. 2010b. “Chicago School Thinking: Old and New.” Papier présenté lors du 11ème “Summer Institute for the History of Economics”, University of Richmond, Virginia, 20 juin 2010.

Buiter, Willem H. 2007. “Seigniorage.” Working Paper 12919, NBER Working Paper Series, National Bureau of Economic Research.

Burns, Scott. 2016. “Old (Chicago) School, New Century: The Link between Knight and Simons’ Chicago Plan to Buchanan’s Constitutional Money.” *Constitutional Political Economy* 27 (3) : 299–318.

Cagan, Phillip. 1956. “The Monetary Dynamics of Hyperinflation.” In : M. Friedman (ed.), *Studies in the Quantity Theory of Money*, 25–117. Chicago, IL : University of Chicago Press.

Cargill, Thomas F. 1992. “Irving Fisher Comments on Benjamin Strong and the Federal

Reserve in the 1930s." *Journal of Political Economy* 100 (6) : 1273–1277.

Carroll, Charles Holt. [1858a] 1964. "Organization of Debt into Currency." In : C. H. Carroll, *Organization of Debt into Currency and Other Papers*. Édité avec une introduction d'E. C. Simmons. Princeton, NJ : D. Van Nostrand, 86-94. Originellement paru dans *The Bankers' Magazine and Statistical Register*, XIII (août 1858), 137-142.

Carroll, Charles Holt. [1858b] 1964. "The Banking and Credit Systems, I." In : C. H. Carroll, *Organization of Debt into Currency and Other Papers.* Édité avec une introduction d'E. C. Simmons. Princeton, NJ : D. Van Nostrand, 95-109. Initialement paru dans *Hunt's Merchants' Magazine and Commercial Review,* XXXIX (sept. 1858) : 306-314.

Carroll, Charles Holt. [1860] 1964. "Mr. Lowell vs. Mr. Hooper on Banking and Currency." In : C. H. Carroll, *Organization of Debt into Currency and Other Papers*. Édité avec une introduction d'E. C. Simmons. Princeton, NJ : D. Van Nostrand, 202-18. Originellement paru dans *Hunt's Merchants Magazine and Commercial Review*, XLII (mai 1860) : 575-585.

Carroll, Charles Holt. 1964. *Organization of Debt into Currency and Other Papers.* Édité avec une introduction d'E. C. Simmons. Princeton, NJ : D. Van Nostrand.

Cernuschi, Henri. 1865. *Mécanique de l'échange*. Paris : A. Lacroix, Verboeckhoven et Cie.

Cernuschi, Henri. 1866. *Contre le billet de banque*. Paris : A. Lacroix, Verboeckhoven et Cie.

Challe, Édouard. 2000. "La 'debt-deflation' selon Irving Fisher, histoire et actualité d'une théorie de la crise financière." *Cahiers d'économie politique* 36 (1) : 7–38.

Chapin, Ned. 1959. "An Appraisal of the One Hundred Per Cent Money Plan." Thèse de doctorat, Illinois Institute of Technology.

Chari, V.V., et Christopher Phelan. 2014. "On the Social Usefulness of Fractional Reserve Banking." *Journal of Monetary Economics* 65 (July) : 1–13.

Chiarella, Carl, Peter Flaschel, Florian Hartmann, et Christian R. Proaño. 2012. "Stock Market Booms, Endogenous Credit Creation and the Implications of Broad and Narrow Banking for Macroeconomic Stability." *Journal of Economic Behavior & Organization* 83 (3) : 410–423.

Chuilon, Raymond. 1981. *Pour combattre la crise*. Paris : Economica.

Chuilon, Raymond. 1987. *Financer l'expansion*. Paris : Economica.

Cochrane, John H. 2014. "Toward a Run-Free Financial System." In : M. N. Baily et J. B. Taylor (eds.), *Across the Great Divide: New Perspectives on the Financial Crisis*, 197–249. Stanford, CA : Hoover Institution Press.

Cox, Garfield V. *et al*. 1932. "Memorandum to Congressman Samuel B. Pettengill." In : 'Payment of Adjusted-Compensation Certificates.' *Hearings before the Committee on Ways and Means*, House of Representatives, April 11-29, Washington, D.C. : United States Government, 524–527.

Currie, Lauchlin B. [1931] 2004. "PhD Thesis: 'Bank Assets and Banking Theory', Harvard University, January 1931: Chapter I: History of Theory of Bank Assets." *Journal of Economic Studies* 31 (3/4) : 235–243.

Currie, Lauchlin B. [1934a] 1968. *The Supply and Control of Money in the United States.* Reproduit avec un rapport additionnel de L. Currie, et un article préliminaire de K. Brunner. New York, NY : Russell & Russell.

Currie, Lauchlin B. [1934b] 1968. "A Proposed Revision of the Monetary System of the United States, Submitted to Secretary of the Treasury Henry Morgenthau, September 1934." In : L. B. Currie, *The Supply and Control of Money in the United States*, 195–226. New York, NY : Russell & Russell.

Currie, Lauchlin B. 1934. "The Failure of Monetary Policy to Prevent the Depression of 1929-32." *Journal of Political Economy* 42 (2) : 145–177.

Currie, Lauchlin B. 1935. "The Supply and Control of Money: A Reply to Dr. B. M. Anderson, Jr." *The Quarterly Journal of Economics* 49 (4) : 694–704.

Currie, Lauchlin B. [1938] 1980. "Causes of the Recession." *History of Political Economy* 12 (3) : 316–335.

Currie, Lauchlin B. [1938] 2004. "The 100 Percent Reserve Plan, August 12, 1938." *Journal of Economic Studies* 31 (3/4) : 355–365.

Currie, Lauchlin B. [1953] 2004. "Lauchlin Currie's Memoirs. Chapter III. The New Deal." *Journal of Economic Studies* 31 (3/4) : 201–234.

Currie, Lauchlin B., Paul T. Ellsworth, et Harry D. White. [1932] 2002. "Memorandum Prepared by L. B. Currie, P. T. Ellsworth, and H. D. White (Cambridge, Mass.,

January 1932).” Édité par D. Laidler et R. Sandilands. *History of Political Economy* 34 (3) : 533–552.

Daly, Herman E. 1980. “The Economic Thought of Frederick Soddy.” *History of Political Economy* 12 (4) : 469–488.

Daly, Herman E., et Joshua C. Farley. [2003] 2010. *Ecological Economics*. Washington, D.C. : Island Press.

de Boyer des Roches, Jérôme. 2003. *La Pensée monétaire. Histoire et analyse*. Paris : Les Solos.

de Boyer des Roches, Jérôme, et Rebeca Gomez Betancourt. 2013a. “Irving Fisher’s Restatement of the Quantity Theory.” *The European Journal of the History of Economic Thought* 20 (2) : 167–173.

de Boyer des Roches, Jérôme, et Rebeca Gomez Betancourt. 2013b. “Origins and Developments of Irving Fisher’s Compensated Dollar Plan.” *The European Journal of the History of Economic Thought* 20 (2) : 261–283.

Demeulemeester, Samuel. 2016. “Irving Fisher’s 100% System as an Ideal ‘Vehicle’ for Monetary Control: Reasoning and Criticisms.” Papier présenté lors de la 43ème Conférence annuelle de l’*History of Economics Society*, Duke University, Durham, NC (États-Unis), 17-20 juin 2016.

Demeulemeester, Samuel. 2018. “The 100% Money Proposal and Its Implications for Banking: The Currie–Fisher Approach versus the Chicago Plan Approach.” *The European Journal of the History of Economic Thought* 25 (2) : 357–387. [Chapitre 3 de la présente thèse]

Demeulemeester, Samuel. 2019a. “Investigating the ‘Debt-Money-Prices’ Triangle: Irving Fisher’s Long Journey Toward the 100% Money Proposal”. Papier présenté lors de la 46ème Conférence annuelle de l’*History of Economics Society*, Columbia University, New York City, 20-23 juin 2019. [Chapitre 4 de la présente thèse]

Demeulemeester, Samuel. 2019b. “The 100% Money Proposal of the 1930s: A Resurgence of the Currency School Ideas?” Papier présenté lors de la 23e Conférence annuelle de l’*European Society for the History of Economic Thought*, Université de Lille, 23-25 mai 2019. [Chapitre 2 de la présente thèse]

Demeulemeester, Samuel. 2020. “Would a State Monopoly over Money Creation Allow for a

Reduction of the National Debt? A Study of the 'Seignorage Argument' in Light of the '100% Money' Debates". A Symposium on Public Finance in the History of Economic Thought, *Research in the History of Economic Thought and Methodology* 38A, Chapitre 7 : 123-144. [Chapitre 5 de la présente thèse]

Diamond, Douglas W., et Philip H. Dybvig. 1986. "Banking Theory, Deposit Insurance, and Bank Regulation." *The Journal of Business* 59 (1) : 55–68.

Diatkine, Sylvie. 2002. *Les Fondements de la théorie bancaire*. Paris : Dunod.

Diatkine, Sylvie. 2003. "'La Monnaie à l'abri des prêts': le plan d'I. Fisher (1935) à l'origine des propositions de 'narrow banking'. » Communication aux 20èmes Journées internationales d'économie monétaire et bancaire, Birmingham (Royaume-Uni), 5-6 juin 2003.

Diatkine, Sylvie, et Jérôme de Boyer. 2008. "British Monetary Orthodoxy in the 1870s: A Victory for the Currency Principle." *The European Journal of the History of Economic Thought* 15 (2) : 181–209.

Dimand, Robert W. 1991. "Cranks, Heretics and Macroeconomics in the 1930s." *History of Economics Review* 16 (Summer) : 11–30.

Dimand, Robert W. 1993a. "The Dance of the Dollar: Irving Fisher's Monetary Theory of Economic Fluctuations." *History of Economics Review* 20 : 161–172.

Dimand, Robert W. 1993b. "100% Money: Irving Fisher and the Banking Reform in the 1930s." *History of Economic Ideas* 1 (2) : 59–76.

Dimand, Robert W. 1994. "Irving Fisher's Debt-Deflation Theory of Great Depressions." *Review of Social Economy* 52 (1) : 92–107.

Dimand, Robert W. 1998. "The Quest for an Ideal Index - Irving Fisher and *The Making of Index Numbers*." In : M. Rutherford (ed.), *The Economic Mind in America. Essays in the History of American Economics*, 128–144. London, UK, et New York, NY : Routledge.

Dimand, Robert W. 1999a. "Irving Fisher's Monetary Macroeconomics." In : H.-E. Loef et H. G. Monissen (eds.), *The Economics of Irving Fisher*, 35–58. Cheltenham, UK, et Northampton, MA : Edward Elgar.

Dimand, Robert W. 1999b. "Minnie Throop England on Crises and Cycles: A Neglected

Early Macroeconomist.” *Feminist Economics* 5 (3): 107–126.

Dimand, Robert W. 2003a. “Irving Fisher on the International Transmission of Booms and Depressions through Monetary Standards.” *Journal of Money, Credit and Banking* 35 (1) : 49–90.

Dimand, Robert W. 2003b. “Competing visions for the U.S. monetary system, 1907-1913: The quest for an elastic currency and the rejection of Fisher’s compensated dollar rule for price stability.” *Cahiers d’économie politique* 45 (2) : 101–121.

Dimand, Robert W. 2005. “David Hume on Canadian Paper Money: An Overlooked Contribution.” *Journal of Money, Credit, and Banking* 37 (4) : 783–787.

Dimand, Robert W., ed. 2007. *Irving Fisher: Critical Responses.* 3 volumes. London et New York : Routledge.

Dimand, Robert W. 2011. “One Hundred Years from Today: Irving Fisher’s ‘The Purchasing Power of Money’.” *History of Economics Review* 54 : 131–143.

Dimand, Robert W. 2019. *Irving Fisher*. Cham : Palgrave Macmillan.

Dimand, Robert W., et Rebeca Gomez Betancourt. 2012. “Retrospectives - Irving Fisher’s *Appreciation and Interest* (1896) and the Fisher Relation.” *Journal of Economic Perspectives* 26 (4) : 185–196.

Dittmer, Kristofer. 2015. “100 Percent Reserve Banking: A Critical Review of Green Perspectives.” *Ecological Economics* 109 (January) : 9–16.

Doepke, Matthias, Martin Schneider, et Veronika Selezneva. 2019. “Distributional Effects of Monetary Policy.” Document de travail.

Douglas, Paul H. 1935. *Controlling Depressions*. New York, NY : Norton.

Dow, Sheila, Guðrún Johnsen, et Alberto Montagnoli. 2015. “A Critique of Full Reserve Banking.” Sheffield Economic Research Paper Series, No 2015008.

Drummond, Henry. 1826. *Elementary Propositions on the Currency*. Quatrième édition. London: James Ridgway.

Durand, Jean-Jacques. [1978] 1979. “La Création monétaire et la réforme du crédit. La Couverture intégrale des dépôts bancaires en monnaie de base.” Thèse de doctorat. Seconde version. Université de Paris 10, Paris.

Durand, Jean-Jacques. 1995. “Money, Credit and Monetary Dynamics in Maurice Allais’

Work.” In : B. R. Munier (ed.), *Market, Risk and Money. Essays in Honor of Maurice Allais*, 303–323. Dordrecht : Springer Netherlands.

Dutraive, Véronique, et Bruno Théret. 2017. “Two Models of the Relationship Between Money and Sovereignty: An Interpretation Based on John R. Commons’s Institutionalism.” *Journal of Economic Issues* 51 (1) : 27–44.

Dutton, George. 1857. *The Present Crisis, or The Currency*. Rochester, NY.

Dyson, Ben, Tony Greenham, Josh Ryan-Collins, et Richard A. Werner. 2011. “Towards a 21st Century Banking and Monetary System.” Soumission conjointe à la *Independent Commission on Banking*. Centre for Banking, Finance and Sustainable Development at the University of Southampton; New Economics Foundation; Positive Money.

Dyson, Ben, Graham Hodgson, et Frank van Lerven. 2016. “A Response to Critiques of ‘Full Reserve Banking.’” *Cambridge Journal of Economics* 40 (5) : 1351–1361.

Edgeworth, Francis Y. 1888. “The Mathematical Theory of Banking.” *Journal of the Royal Statistical Society* 51 (1) : 113–127.

El Herradi, Mehdi, et Aurélien Leroy. 2019. “Monetary Policy and the Top One Percent: Evidence from a Century of Modern Economic History.” Working Paper 632. De Nederlandsche Bank.

England, Minnie Throop. 1912. “Fisher’s Theory of Crises: A Criticism.” *The Quarterly Journal of Economics* 27 (1) : 95.

Fetter, Frank W. 1965. *Development of British Monetary Orthodoxy, 1797-1875*. Cambridge, MA : Harvard University Press.

Fischer, Stanley. 1990. “Rules versus Discretion in Monetary Policy.” In : B. M. Friedman et F. H. Hahn (Eds.), *Handbook of Monetary Economics, Vol. 2*. Amsterdam : North-Holland, 1155–1184.

Fisher, Irving. [1892] 1925. *Mathematical Investigations in the Theory of Value and Prices.* Réimpression, avec nouvelle préface. New Haven, CT : Yale University Press. Reproduit dans Barber *et al*. (1997), Vol. 1.

Fisher, Irving. 1896. *Appreciation and Interest.* Publications of the American Economic Association, First Series, 1 (4), 1-110. Reproduit dans Barber *et al*. (1997), Vol. 1.

Fisher, Irving. 1907. *The Rate of Interest.* New York, NY : Macmillan. Reproduit dans Barber

et al. (1997), Vol. 3.

Fisher, Irving. 1910. *Introduction to Economic Science.* [Première édition expérimentale de l'ouvrage *Elementary Principles of Economics*.] New York, NY : Macmillan.

Fisher, Irving. [1910] 1911. *Elementary Principles of Economics.* Seconde édition expérimentale. New York, NY : Macmillan.

Fisher, Irving. [1910] 1912. *Elementary Principles of Economics.* Troisième édition, version finale. New York, NY : Macmillan. Reproduit dans Barber *et al*. (1997), Vol. 5.

Fisher, Irving, assisté d'Harry G. Brown. 1911. *The Purchasing Power of Money.* Première édition. New York, NY : Macmillan.

Fisher, Irving, assisté de Harry G. Brown. [1911] 1913. *The Purchasing Power of Money.* Seconde édition. New York, NY : Macmillan. Reproduit dans Barber *et al*. (1997), Vol. 4.

Fisher, Irving. 1914. *Why Is the Dollar Shrinking?* New York, NY : Macmillan.

Fisher, Irving. 1920. *Stabilizing the Dollar.* New York, NY : Macmillan. Reproduit dans Barber *et al*. (1997), Vol. 6.

Fisher, Irving. [1922] 1927. *The Making of Index Numbers. A Study of Their Varieties, Tests, and Reliability*. Troisième édition, révisée. Boston, MA et New York, NY : Houghton Mifflin Company. Reproduit dans Barber *et al*. (1997), Vol. 7.

Fisher, Irving. 1923. "The Business Cycle Largely a 'Dance of the Dollar'." *Journal of the American Statistical Association* 18 (144) : 1024–1028. Reproduit dans Barber *et al*. (1997), Vol. 8.

Fisher, Irving. 1925. "Our Unstable Dollar and the So-Called Business Cycle." *Journal of the American Statistical Association* 20 (150) : 179–202.

Fisher, Irving. 1926. "A Statistical Relationship between Unemployment and Price Changes." *International Labour Review*, 13 (6) : 785-792. Reproduit sous le titre "Lost and Found: I Discovered the Phillips Curve – Irving Fisher", *Journal of Political Economy*, 1973, 81 (2) : 496-502.

Fisher, Irving. 1928. *The Money Illusion.* New York, NY : Adelphi. Reproduit dans Barber *et al*. (1997), Vol. 8.

Fisher, Irving. 1930. *The Theory of Interest.* New York, NY : Macmillan. Reproduit dans

Barber *et al*. (1997), Vol. 9.

Fisher, Irving. 1932a. Témoignage devant le sous-comité du *Committee on Banking and Currency*, U.S. House of Representatives, 72 :1, 28 mars, 333-415

Fisher, Irving. 1932b. Témoignage devant le *Committee on Ways and Means*, U.S. House of Representatives, 72 :1, 29 avril, 684-712.

Fisher, Irving. 1932c. *Booms and Depressions.* New York, NY : Adelphi. Reproduit dans Barber *et al*. (1997), Vol. 10.

Fisher, Irving, assisté d'Herbert W. Fisher. 1933a. *Inflation?* London : Allen et Unwin.

Fisher, Irving. 1933b. "The Debt-Deflation Theory of Great Depressions." *Econometrica* 1 (4) : 337.

Fisher, Irving, assisté d'Herbert W. Fisher. [1933] 1934. *After Reflation, What?* Seconde édition. New York, NY : Adelphi.

Fisher, Irving, assisté d'H. R. L. Cohrssen. 1934a. *Stable Money. A History of the Movement*. New York, NY : Adelphi

Fisher, Irving. 1934b. "Monetary Cure for Depression." Communication au *Controllers Institute of America*, 18 september 1934. *The Controller* (October) : 155–160.

Fisher, Irving. [1934] 1935. "Are Booms and Depressions Transmitted Internationally Through Monetary Standards?" *Bulletin of the International Statistical Institute* 28 (3) : 1-29. Initialement publié de manière privée par Fisher en 1934. Reproduit dans Dimand (2003a).

Fisher, Irving. 1935a. Témoignage devant le *Committee on Banking and Currency*, U.S. House of Representatives, 74 : 1, 22 mars, 517–553.

Fisher, Irving. 1935b. *100% Money; Designed to Keep Checking Banks 100% Liquid; to Prevent Inflation and Deflation; Largely to Cure or Prevent Depressions; and to Wipe out Much of the National Debt*. Première édition. New York, NY : Adelphi.

Fisher, Irving. [1935] 1945. *100% Money; Designed to Keep Checking Banks 100% Liquid; to Prevent Inflation and Deflation; Largely to Cure or Prevent Depressions; and to Wipe out Much of the National Debt.* Troisième édition. New Haven, CT : City Printing Company. Reproduit dans Barber *et al*. (1997), Vol. 11.

Fisher, Irving. 1936a. "100% Money and the Public Debt." *Economic Forum* 3 : 406–420.

Fisher, Irving. 1936b. “The Depression, Its Causes and Cures.” Papier présenté lors de la conférence de recherche en Économie et Statistique organisée par la *Cowles Commission for Research in Economics*, Colorado College Publication, General Series No 208, Study Series N° 21, Colorado Springs, CO : 104–107.

Fisher, Irving. 1936c. “Changes in the Wholesale Price Index in Relation to Factory Employment.” *Journal of the American Statistical Association* 31 (195) : 496–502.

Fisher, Irving. 1936d. “100% Money Again.” *Social Research* 3 (2) : 236–241.

Fisher, Irving. 1936e. “The Bankers’ Interest in 100% Money.” *The Bankers’ Magazine*, October.

Fisher, Irving. 1937a. “100 Percent Reserves—An Old System Adapted to Modern Needs.” *Commercial & Financial Digest*, Los Angeles, California, juin 1937. Reproduit dans I. Fisher, Témoignage devant un sous-comité du *Committee on Agriculture and Forestry*, U.S. Senate, 75 : 1, 12 août 1937, 292–296.

Fisher, Irving. 1937b. “Note Suggested by Review of ‘100 Per Cent Money.’” *Journal of the Royal Statistical Society* 100 (2) : 296–298.

Fisher, Irving. 1946. “Answers to Objections to the 100% Plan.” Fisher Papers, Yale University Library. Reproduit dans Barber *et al*. (1997), Vol. 11, 308–311.

Fisher, Irving. 1947. “Our Inflation and Deflation, How Come? How Conquered?” Papier daté du 26 février 1947, revisé le 26 mars 1947. Non publié. Archives d’Irving Fisher, Yale University Library.

Fisher, Irving. 1997. *Correspondence and Other Commentary on Economic Policy 1930-1947. The Works of Irving Fisher. Vol. 14.* Édité par W. J. Barber, assisté de Robert W. Dimand et Kevin Foster, éditeur consultant J. Tobin. London : Pickering & Chatto..

Fisher, Irving, Paul H. Douglas, Frank D. Graham, Earl J. Hamilton, Willford I. King, et Charles R. Whittlesey. 1939. “A Program for Monetary Reform.” Mémorandum non publié, daté de juillet 1939. Archives d’Irving Fisher, Yale University Library.

Fisher, Irving, John R. Commons, Paul H. Douglas, Frank D. Graham, Earl J. Hamilton, Willford I. King, et Charles R. Whittlesey. 1940. “A Program for Monetary Reform.” Mémorandum non publié, daté d’août 1940. Archives d’Irving Fisher, Yale University Library.

Fisk, Harvey E. 1935. “Review of Irving Fisher’s ‘100% Money’.” *The American Economic Review* 25 (3) : 569. Reproduit dans Dimand (2007), Vol. 3.

Fontana, Giuseppe, et Malcolm Sawyer. 2016. “Full Reserve Banking: More ‘Cranks’ Than ‘Brave Heretics.’” *Cambridge Journal of Economics* 40 (5) : 1333–1350.

Fontana, Giuseppe, et Malcolm Sawyer. 2017. “A Rejoinder to ‘A Response to Critiques of ‘Full Reserve Banking’’.” *Cambridge Journal of Economics* 41 (6) : 1741–1748.

Friedman, Benjamin M., et Frank H. Hahn, eds. 1990. *Handbook of Monetary Economics*. Vol. Volume 2. Amsterdam : North-Holland.

Friedman, Milton. 1948. “A Monetary and Fiscal Framework for Economic Stability.” *The American Economic Review* 38 (3) : 245–264.

Friedman, Milton. 1951. “Commodity-Reserve Currency.” *The Journal of Political Economy* 59 (3) : 203–232.

Friedman, Milton. [1960] 1992. *A Program for Monetary Stability*. Dixième impression, avec nouvelle préface. New York, NY : Fordham University Press.

Friedman, Milton. 1967. “The Monetary Theory and Policy of Henry Simons.” *The Journal of Law & Economics* 10 : 1–13.

Friedman, Milton. 1971. “Government Revenue from Inflation.” *Journal of Political Economy* 79 (4) : 846–856.

Friedman, Milton. 1976. Témoignage devant le *Subcommittee on Financial Institutions Supervision, Regulation and Insurance* du *Committee of Banking, Currency and Housing*, House of Representatives, 94 : 1-2, 22 janvier, 2151–2157.

Friedman, Milton. 1984. “Currency Competition: A Sceptical View.” In : P. Salin (ed.), *Currency Competition and Monetary Union*, 42–46. The Hague, Boston, Lancaster : Martinus Nijhoff Publishers.

Friedman, Milton. 1985. “The Case for Overhauling the Federal Reserve.” *Challenge* 28 (3) : 4–12.

Friedman, Milton, et Anna J. Schwartz. 1963. *A Monetary History of the United States: 1867-1960*. Princeton, NJ : Princeton University Press.

Furceri, Davide, Prakash Loungani, et Aleksandra Zdzienicka. 2018. “The Effects of Monetary Policy Shocks on Inequality.” *Journal of International Money and Finance*

85 (July) : 168–186.

Galand, Gabriel. 2012. “Une monnaie à garantie totale, une vieille idée qui fait son chemin.” Papier présenté lors de la Journée Création monétaire organisée par les Économistes atterrés, 24 mars 2012.

Geyer, Philip Joseph. 1865. *Banken Und Krisen*. Leipzig : Weigel.

Geyer, Philip Joseph. 1867. *Theorie Und Praxis Des Zettelbankwesens*. München : Fleischmann.

Gilbart, James W. 1841. “The Currency: Banking.” *Westminster Review* 35 (January-April) : 89–131.

Giraud, Gaël. 2012. “Rendre le monopole de la création monétaire aux banques centrales ?” *Revue Banque*.

Glasner, David. 2017. “Rules versus Discretion in Monetary Policy Historically Contemplated.” *Journal of Macroeconomics* 54 (December) : 24–41.

Gocht, Rolf. 1975. *Kritische Betrachtungen Zur Nationalen Und Internationalen Geldordnung*. Berlin : Duncker & Humblot.

Gomez Betancourt, Rebeca, et Adrien Vila. 2018. “From the Fisher Effect to a Cycle Theory: Genesis and Reception of Debt-Deflation Theory.” Papier présenté lors de la 22e Conférence annuelle de l’*European Society for the History of Economic Thought*, Universidad Complutense de Madrid, Madrid, 7-9 juin 2018.

Gomez, Christian. 2010. “Une ‘vieille’ idée peut-elle sauver l’économie mondiale ? Un réexamen de la proposition d’une réforme radicale du système bancaire : l’imposition d’un coefficient de réserves de 100%.” Papier présenté à l’Université Blaise Pascal, IUFM Auvergne, 9 février 2010.

Gomez, Christian. 2012. “La Pensée monétaire de M. Allais et la nationalisation de la monnaie.” Papier présenté lors de la conférence conjointe AHE, IIPPE et FAPE, 5-7 juillet 2012, Paris.

Goodhart, Charles A. E. 1988. *The Evolution of Central Banks*. Cambridge, MA : MIT Press.

Goodhart, Charles A. E., et Meinhard A. Jensen. 2015. “A Commentary on Patrizio Lainà’s ‘Proposals for Full- Reserve Banking: A Historical Survey from David Ricardo to Martin Wolf’. Currency School versus Banking School: An Ongoing Confrontation.”

Economic Thought 4 (2) : 20–31.

Gouge, William M. [1833] 1968. *A Short History of Paper Money and Banking in the United States*. New York, NY : A. M. Kelley.

Graham, Frank D. 1936. “Partial Reserve Money and the 100 Per Cent Proposal.” *The American Economic Review* 26 (3) : 428–440. Reproduit dans Dimand (2007), Vol. 3.

Graham, Frank D. 1941. “100 Per Cent Reserves: Comment.” *The American Economic Review* 31 (2) : 338–340.

Gregory, Theodore E. 1928. “Introduction.” In : T. Tooke et W. Newmarch, *A History of Prices and of the State of Circulation from 1792 to 1856*, 5–120. New York, NY : Adelphi.

Grjebine, André. 2015. *La Dette publique et comment s’en débarrasser*. Paris : Presses universitaires de France.

Groseclose, Elgin Earl. 1934. *Money, the Human Conflict*. Norman : University of Oklahoma Press.

Hansen, Alvin H. 1938. *Full Recovery or Stagnation?* London : Adam et Charles Black.

Hansen, Alvin H. 1946. “Notes on Mints’ Paper on Monetary Policy.” *The Review of Economics and Statistics* 28 (2) : 69–74.

Harris, Joseph. 1757. *An Essay upon Money and Coins. Part 1 - The Theories of Money, Commerce, and Exchanges*. London: Sold by G. Hawkins.

Hart, Albert G. 1935. “The ‘Chicago Plan’ of Banking Reform. A Proposal for Making Monetary Management Effective in the United States.” *The Review of Economic Studies* 2 (2) : 104–116.

Hart, Albert G. 1948. *Money, Debt and Economic Activity*. New York, NY : Prentice-Hall.

Hautcœur, Pierre-Cyrille. 2011. “Les Transformations du crédit en France au XIXe siècle.” *Romantisme* 151 (1) : 23–38.

Hawtrey, Ralph G. 1936. “Reviewed Work: ‘100% Money’, by Irving Fisher.” *Journal of the Royal Statistical Society* 99 (2) : 388–390. Reproduit dans Dimand (2007), Vol. 3.

Hayek (von), Friedrich A. 1937. *Monetary Nationalism and International Stability*. London : Longmans, Green.

Higgins, Benjamin. 1941. “Comments on 100 Per Cent Money.” *The American Economic Review* 31 (1) : 91–96. Reproduit dans Dimand (2007), Vol. 3.

Hotson, John H. 1987. “The Keynesian Revolution and the Aborted Fisher-Simons Revolution or the Road Not Taken.” *Économies et Sociétés*, 9 : 185–219.

Hotson, John H. 1994. “Financing Sustainable Development.” *Économies et Sociétés* Série MP 9 (janvier-février) : 351–373.

Hubbard, R. Glenn, et Anthony Patrick O’Brien. 2011. *Money, Banking, and the Financial System*. Première edition internationale. Boston : Prentice Hall.

Huber, Joseph. 1998. *Vollgeld. Beschäftigung, Grundeinkommen Und Weniger Staatsquote Durch Eine Modernisierte Geldordnung*. Berlin : Duncker & Humblot.

Huber, Joseph. 1999. “Plain Money. A Proposal for Supplying the Nations with the Necessary Means in a Modern Monetary System” Der Hallesche Graureiher 99-3.

Huber, Joseph. 2014. “Réforme Monnaie pleine. Une réforme de la création monétaire par la transformation de la monnaie scripturale en monnaie pleine et la création d’une banque centrale étatique indépendante.” Traduit de l’allemand par Modernisation Monétaire (MoMo). Association Modernisation Monétaire (MoMo).

Huber, Joseph. 2017. *Sovereign Money – Beyond Reserve Banking*. London : Palgrave Macmillan.

Huber, Joseph, et James Robertson. 2000. *Creating New Money: A Monetary Reform for the Information Age*. London : New Economics Foundation.

Hübner, Otto. 1854. *Die Banken*. Leipzig : Hübner.

Huerta de Soto, Jesús. [1998] 2012. *Money, Bank Credit, and Economic Cycles.* Troisième édition anglaise. Auburn : Ludwig von Mises Institute. Première édition espagnole : *Dinero, Crédito Bancario y Ciclos Económicos*, 1998, Madrid : Unión Editorial.

Hume, David. [1752] 1906. *Political Discourses*. London : Walter Scott Publishing Co.

Humphrey, Thomas M., et Richard H. Timberlake. 2019. *Gold, the Real Bills Doctrine, and the Fed: Sources of Monetary Disorder, 1922–1938*. Washington, D.C. : Cato Institute.

Ingrao, Bruna, et Claudio Sardoni. 2019. *Banks and Finance in Modern Macroeconomics. A Historical Perspective*. Cheltenham, UK, et Northampton, MA : Edward Elgar.

Jackson, Andrew, et Ben Dyson. 2013. *Modernising Money. Why Our Monetary System Is Broken and How It Can Be Fixed.* Avec un avant-propos du professeur Herman E. Daly. London : Positive Money.

Jacoud, Gilles. 1994. “Stabilité monétaire et régulation étatique dans l’analyse de Léon Walras.” *Revue économique* 45 (2) : 257–288.

Joplin, Thomas. 1823. *Outlines of a System of Political Economy*. London : Baldwin, Cradock and Joy.

Joplin, Thomas. 1825. *An Illustration of Mr. Joplin’s Views on Currency, and Plan for Its Improvement*. London : Baldwin, Cradock and Joy.

Joplin, Thomas. 1826. *Views on the Subject of Corn and Currency*. London : Baldwin, Cradock and Joy; and T. Ridgway.

Joplin, Thomas. 1832. *An Analysis and History of the Currency Question*. London : James Ridgway.

Joplin, Thomas. [1844] 1845. *An Examination of Sir Robert Peel’s Currency Bill of 1844*. Seconde édition. London : Pelham Richardson, Cornhill.

Jordà, Òscar, Moritz Schularick, et Alan M. Taylor. 2016. “The Great Mortgaging: Housing Finance, Crises, and Business Cycles.” *Economic Policy* 31 (85) : 107–152.

Juglar, Clément. [1862] 1889. *Des Crises commerciales et de leur retour périodique en France, en Angleterre et aux États-Unis*. Seconde édition. Paris : Guillaumin et Cie.

Juurikkala, Oskari. 2002. “The 1866 False Money Debate in the *Journal des Économistes*: Déjà Vu for Austrians?” *The Quarterly Journal of Austrian Economics* 5 (4) : 43–55.

Kaminow, Ira. 1977. “Required Reserve Ratios, Policy Instruments, and Money Stock Control.” *Journal of Monetary Economics* 3 (October) : 389–408.

Kareken, John H. 1986. “Federal Bank Regulatory Policy: A Description and Some Observations.” *The Journal of Business* 59 (1) : 3–48.

Kay, John A. 2009. *Narrow Banking: The Reform of Banking Regulation*. London : Centre for the study of financial innovation.

Keynes, John Maynard. [1923] 1971. *A Tract on Monetary Reform*. In : *The Collected Writings of John Maynard Keynes*, Vol. 2. Cambridge, UK : Cambridge University Press.

King, Mervyn. 1994. “Debt Deflation: Theory and Evidence.” *European Economic Review* 38 : 419–445.

King, Mervyn. 2016. *The End of Alchemy. Money, Banking, and The Future of The Global Economy*. New York, NY : W. W. Norton & Company.

King, Willford I. [1938] 1941. *The Causes of Economic Fluctuations. Possibilities of Anticipation and Control*. Version révisée. New York, NY : The Ronald Press Company.

Klein, Martin, et Manfred J. M. Neumann. 1990. “Seigniorage: What Is It and Who Gets It?” *Weltwirtschaftliches Archiv* 126 : 205–221.

Knight, Frank H. 1927. “Review of Frederick Soddy’s ‘Wealth, Virtual Wealth, and Debt’.” *The Saturday Review of Literature*, April 16 : 732.

Knight, Frank H., Garfield V. Cox, Aaron Director, Paul H. Douglas, Albert G. Hart, Lloyd W. Mints, Henry Schultz, et Henry C. Simons. [1933] 1995. Mémorandum sans titre, incluant un plan de réforme bancaire, daté du 16 mars 1933. Publié en tant qu’annexe dans R. J. Phillips, *The Chicago Plan and New Deal Banking Reform*, Armonk, N.Y : Routledge, 1995, 191–199.

Koo, Richard C. 2008. *The Holy Grail of Macroeconomics. Lessons from Japan’s Great Recession*. Hoboken, NJ : Wiley.

Kotlikoff, Laurence J. 2010. *Jimmy Stewart Is Dead. Ending the World’s Ongoing Financial Plague with Limited Purpose Banking*. Hoboken, NJ : John Wiley & Sons.

Krainer, Robert E. 2013. “Towards a Program for Financial Stability.” *Journal of Economic Behavior & Organization* 85 (January) : 207–218.

Kregel, Jan. 2012. *Minsky and the Narrow Banking Proposal: No Solution for Financial Reform*. Annandale-on-Hudson, NY : Levy Economics Inst.

Kregel, Jan A. 1996. “The Policy Implications of the Current Bank Crisis, or, ‘Is Free Market Capitalism Compatible with Endogenous Money?’” In : G. Deleplace et E. J. Nell (eds.), *Money in Motion. The Post Keynesian and Circulation Approaches*, 651–671. Basingstoke : MacMillan; New York : St. Martin’s Press.

Laidler, David. 1988. “British Monetary Orthodoxy in the 1870s.” *Oxford Economic Papers*, New Series 40 (1) : 74–109.

Laidler, David. 1991. *The Golden Age of the Quantity Theory*. Princeton, NJ : Princeton University Press.

Laidler, David. 1999. *Fabricating the Keynesian Revolution*. Cambridge, UK : Cambridge University Press.

Laidler, David. 2013. “Professor Fisher and the Quantity Theory – A Significant Encounter.” *The European Journal of the History of Economic Thought* 20 (2) : 174–205.

Laidler, David, et Roger J. Sandilands. 2002. “An Early Harvard Memorandum on Anti-Depression Policies: An Introductory Note.” *History of Political Economy* 34 (3) : 515–532.

Lainà, Patrizio. 2015. “Proposals for Full-Reserve Banking: A Historical Survey from David Ricardo to Martin Wolf.” *Economic Thought* 4 (2) : 1–19.

Lainà, Patrizio. 2018. “Full-Reserve Banking. Separating Money Creation from Bank Lending.” Thèse de doctorat. Université d’Helsinki.

Lainà, Patrizio. 2019. “Money Creation under Full-Reserve Banking: A Stock–Flow Consistent Model.” *Cambridge Journal of Economics* 43 (5) : 1219–1249.

Le Maux, Laurent. 2014. “Cantillon and Hume on Money and Banking: The Foundations of Two Theoretical Traditions.” *Journal of Economic Surveys* 28 (5) : 956–970.

Le Maux, Laurent. 2018. “Banque centrale et finance. La Banque d’Angleterre, le taux d’intérêt et le *Bank Act* de 1844.” *Revue économique* 69 (4) : 541–574.

Leeson, Robert, ed. 2003. *Keynes, Chicago and Friedman*. London : Pickering & Chatto.

Lehmann, Fritz. 1936a. “100% Money.” *Social Research* 3 (1) : 37–56.

Lehmann, Fritz. 1936b. “Rejoinder to Professor Fisher.” *Social Research* 3 (2) : 241–244.

Lester, Richard A. 1935. “Check-Book Inflation.” *The American Scholar* 4 (1) : 30–40.

Lester, Richard A. 1939. *Monetary Experiments. Early American and Recent Scandinavian*. Princeton, NJ: Princeton University Press.

Lester, Richard A. 1941. “Gold Money, Bank Money, and Real Money.” *The Virginia Quarterly Review* 17 (2): 251–264.

Levitin, Adam J. 2016. “Safe Banking: Finance and Democracy.” *The University of Chicago Law Review* 83 (1) : 357–455.

Lin Lin. 1937. “Are Time Deposits Money?” *The American Economic Review* 27 (1) : 76–86.

Litan, Robert E. 1987. *What Should Banks Do?* Washington, D.C. : The Brookings Institution.

Loef, Hans-E., et Hans G. Monissen. 1999. “Monetary Policy and Monetary Reform: Irving Fisher’s Contributions to Monetary Macroeconomics.” In : H.-E. Loef et H. G. Monissen (eds.), *The Economics of Irving Fisher*. Cheltenham, UK, et Northampton, MA : Edward Elgar, 81–108.

Loyd, Samuel J. 1837. *Reflections Suggested by a Perusal of Mr. J. Horsley Palmer’s Pamphlet on the Causes and Consequences of the Pressure on the Money Market*. London : P. Richardson.

Loyd, Samuel J. 1840a. *Remarks on the Management of the Circulation*. London : P. Richardson.

Loyd, Samuel J. 1840b. Témoignage devant le *Select Committee on Banks of Issue*. In : House of Commons, *Report of the Select Committee on Banks of Issue*, 211–296.

Loyd, Samuel J. [1840a] 1857. “A Letter to J. B. Smith, Esq., President of the Manchester Chamber of Commerce.” In : Lord Overstone, *Tracts and Other Publications on Metallic and Paper Currency*. London : Longman, Brown and Co., 159–183.

Loyd, Samuel J. [1840b] 1857. “Effects of the Administration of the Bank of England—A Second Letter to J. B. Smith, Esq., President of the Manchester Chamber of Commerce.” In : Lord Overstone, *Tracts and Other Publications on Metallic and Paper Currency*. London : Longman, Brown and Co., 185–236.

Loyd, Samuel J. 1844. *Thoughts on the Separation of the Departments of the Bank of England*. London : Pelham Richardson.

Loyd, Samuel J. [1857] 1858. *The Evidence Given by Lord Overstone before the Select Committee of the House of Commons of 1857 on Bank Acts*. London : Longman, Brown and Co.

Luttrell, Clifton B. 1975. “Thomas Jefferson on Money and Banking: Disciple of David Hume and Forerunner of Some Modern Monetary Views.” *History of Political Economy* 7 (2) : 156–173.

Lutz, Friedrich A. 1936. *Das Grundproblem Der Geldverfassung*. Stuttgart et Berlin: W.

Kohlhammer. Reproduit dans F. A. Lutz, *Geld und Währung: Gesammelte Abhandlungen*, Tübingen : J. C. B. Mohr, 1962, pp. 28–102.

Machlup, Fritz. [1931] 1940. *The Stock Market, Credit, and Capital Formation.* Traduit à partir d'une version révisée de l'édition allemande par Vera C. Smith, B. Sc. (Econ.), Ph.D. London, Edinburgh, Glasgow : William Hodge and Company.

Makinen, Gail E. 2005. "Seigniorage." In : J. J. Cordes, R. D. Ebel et J. Gravelle (eds.), *The Encyclopedia of Taxation & Tax Policy*, 356–357. Seconde édition. Washington, D.C. : The Urban Institute Press.

Marget, Arthur W. 1931. "Léon Walras and the 'Cash-Balance Approach' to the Problem of the Value of Money." *Journal of Political Economy* 39 (5) : 569–600.

Marget, Arthur W. [1938] 1966. *The Theory of Prices. A Re-Examination of the Central Problems of Monetary Theory*. 2 volumes. New York, NY : A. M. Kelley.

Market, Donald R. 1967. "The Theory of 100 Per Cent Reserve Banking - Historical Development and Critical Analysis." Thèse de doctorat. LSU Historical Dissertations and Theses, 1302, Louisiana State University.

McLane, Stephen E. 1980. "Improving Monetary Control: The Abolition of Fractional Reserves." Thèse de doctorat. New Brunswick, NJ : The Stonier Graduate School of Banking.

Means, Gardiner C. 1933. "The Present Crisis and a Proposal for Banking and Currency Reform." Mémorandum non publié. Archives de Gardiner C. Means, Franklin Roosevelt Library, Hyde Park, NY.

Meltzer, Allan H. 2003. *A History of the Federal Reserve. Volume 1 (1913–1951)*. Chicago : University of Chicago Press.

Minsky, Hyman P. 1986. *Stabilizing an Unstable Economy*. New Haven, CT : Yale University Press.

Minsky, Hyman P. 1994. "Financial Instability and the Decline (?) Of Banking: Future Policy Implications." Working Paper No. 127, octobre 1994. The Jerome Levy Research Institute of Bard College.

Minsky, Hyman P. 1995. "Would Universal Banking Benefit the U.S. Economy?" Hyman P. Minsky Archive, Paper 51, version révisée datée du 5 avril 1995.

Mints, Lloyd W. 1945. *A History of Banking Theory in Great Britain and the United States*. Chicago : University of Chicago Press.

Mints, Lloyd W. 1946. “Monetary Policy.” *The Review of Economics and Statistics* 28 (2) : 60–69.

Mises (von), Ludwig. [1912] 1953. *The Theory of Money and Credit*. Seconde édition. Traduction anglaise par H. E. Batson. New Haven : Yale University Press. Première édition allemande : *Theorie Des Geldes Und Der Umlaufsmittel*, 1912, München und Leipzig : Ferlag von Duncker & Humblot.

Mises (von), Ludwig. [1928] 1978. “Monetary Stabilization and Cyclical Policy.” In : P. L. Greaves, Jr., *On the Manipulation of Money and Credit*, 53–153. New York, NY : Free Market Books.

Mises (von), Ludwig. [1949] 1963. *Human Action. A Treatise on Economics*. Fourth revised edition. San Francisco, CA : Fox and Wilkes.

Mitchell, Wesley C. 1912. “Reviewed Work: ‘The Purchasing Power of Money’, by Irving Fisher”. *Political Science Quarterly* 27 (1) : 160–164. Reproduit dans Dimand (2007), Vol. 2.

Modeste, Victor. 1966. “Le billet des banques d’émission et la fausse monnaie.” *Journal des Économistes* 25 (3) : 181–212.

Nersisyan, Yeva, et L. Randall Wray. 2016. “Modern Money Theory and the Facts of Experience.” *Cambridge Journal of Economics* 40 (5) : 1297–1316.

Nersisyan, Yeva, et L. Randall Wray. 2017. “Cranks and Heretics: The Importance of an Analytical Framework.” *Cambridge Journal of Economics* 41 (6) : 1749–1760.

Neuman, Andrew M. 1937. “100 Per Cent. Money.” *The Manchester School* 8 (1) : 56–62. Reproduit dans Dimand (2007), Vol. 3.

Niehans, Jürg. 1978. *The Theory of Money*. Baltimore, MD : John Hopkins University Press.

Norman, George W. 1838. *Remarks on Currency and Banking*. London : Pelham Richardson.

Norman, George W. 1840. Témoignage devant le *Select Committee on Banks of Issue*. In : House of Commons, *Report of the Select Committee on Banks of Issue*, 141–211.

Norman, George W. 1841. *Letter to Charles Wood, Esq., M.P., on Money, and the Means of Economizing the Use of It*. London : Pelham Richardson.

Nosal, Ed. 2014. “Comment on: ‘On the Social Usefulness of Fractional Reserve Banking’ by V.V. Chari et Christopher Phelan.” *Journal of Monetary Economics* 65 (July) : 14–16.

O’Brien, Denis P. 1993. *Thomas Joplin and Classical Macroeconomics. A Re-Appraisal of Classical Monetary Thought*. Aldershot, UK : Edward Elgar.

O’Brien, Denis P. 1994a. “Introduction.” In : D. P. O’Brien (ed.), *Foundations of Monetary Economics – Volume 4. The Currency School*, vii–xxx.

O’Brien, Denis P. 1994b. “Introduction.” In : D. P. O’Brien (ed.), *Foundations of Monetary Economics – Volume 5. The Banking School*, vii–xxiv.

Paganelli, Maria Pia. 2014. “David Hume on Banking and Hoarding.” *Southern Economic Journal* 80 (4) : 968–980.

Pahlke, Jürgen. 1970. *Steuerbedarf Und Geldpolitik in Der Wachsenden Wirtschaft. Geldschöpfung Als Mittel Der Staatsfinanzierung*. Berlin : Walter de Gruyter.

Patinkin, Don. 1993. “Irving Fisher and His Compensated Dollar Plan.” Federal Reserve Bank of Richmond, *Economic Quarterly* 79 (3) : 1–34.

Pennington, James. [1827] 1840. Memoranda à Huskisson. Écrits en 1827 ; reproduits dans J. Pennnington, *A Letter to Kirkman Finlay, Esq*. London: Simpkin, Marshall and Co., and Pelham Richardson, 82–88. Reproduit dans R. S. Sayers (ed.), *Economic writings of James Pennington*, London : London School of Economics and Political Science, 1963.

Pennington, James. 1840. *A Letter to Kirkman Finlay, Esq.* London : Simpkin, Marshall and Co. Reproduit dans R. S. Sayers (ed.), *Economic writings of James Pennington*, London : London School of Economics and Political Science, 1963.

Phillips, Ronnie J. 1988. “Veblen and Simons on Credit and Monetary Reform.” *Southern Economic Journal* 55 (1) : 171–181.

Phillips, Ronnie J. 1992. “The Chicago Plan and New Deal Banking Reform.” The Jerome Levy Economics Institute of Bard College, Working Paper No. 76.

Phillips, Ronnie J. 1994. “An End to Private Banking: Early New Deal Proposals to Alter the Role of the Federal Government in Credit Allocation.” *Journal of Money, Credit and Banking* 26 (3) : 552–568.

Phillips, Ronnie J. 1995. *The Chicago Plan and New Deal Banking Reform.* Avec un avant-

propos d'Hyman P. Minsky. Armonk, NY : Routledge.

Poole, William. 1976. "A Proposal for Reforming Bank Reserve Requirements in the United States." *Journal of Money, Credit and Banking* 8 (2) : 137–147.

Rebeyrol, Antoine. 1988. "À propos des théories prékeynesiennes du cycle : Wicksell, Fisher et Hayek." Œconomia (9), série PE, *Économies et Sociétés* : 95–133.

Reeve, Joseph E. 1943. *Monetary Reform Movements. A Survey of Recent Plans and Panaceas*. Washington, D.C. : American Council on Public Affairs.

Reich, Jens. 2017. *Seigniorage. On the Revenue from the Creation of Money*. Cham : Springer.

Reinhart, Carmen M., et Kenneth S. Rogoff. 2009. *This Time Is Different. Eight Centuries of Financial Folly*. Princeton, NJ : Princeton University Press.

Ricardo, David. [1816] 1951. *Proposals for an Economical and Secure Currency.* London : John Murray, Albemarle-Street, 1816. *Reproduit* dans *The Works and Correspondence of David Ricardo*, Vol. 4, édité par P. Sraffa, 43-141. Cambridge, UK : Cambridge University Press, 1951.

Ricardo, David. [1817] 1951. *On The Principles of Political Economy and Taxation*. Troisième édition. London : John Murray, Albemarle-Street, 1821. Reproduit dans *The Works and Correspondence of David Ricardo*, Vol. 1, édité par P. Sraffa. Cambridge, UK : Cambridge University Press, 1951.

Ricardo, David. [1824] 1951. *Plan for the Establishment of a National Bank*, London : John Murray, Albemarle-Street, 1824. Reproduit dans *The Works and Correspondence of David Ricardo*, Vol. 4, édité par P. Sraffa, 271-300. Cambridge, UK : Cambridge University Press, 1951.

Ricardo, David. 1951. Letters 1810-1815. In : *The Works and Correspondence of David Ricardo*, Vol. 6, édité par P. Sraffa. Cambridge, UK : Cambridge University Press, 1951.

Rist, Charles. [1938] 1951. *Histoire des doctrines relatives au crédit et à la monnaie depuis John Law jusqu'à nos jours.* Seconde édition. Paris : Sirey.

Robbins, Lionel. 1958. *Robert Torrens and the Evolution of Classical Economics*. London : MacMillan and Co.

Robbins, Lionel. 1998. *A History of Economic Thought. The LSE Lectures.* Édité par S. G. Medema et W. J. Samuels. Princeton, NJ : Princeton University Press.

Robertson, James. 2012. *Future Money - Breakdown or Breakthrough?* Totnes : Green Books.

Robinson, George Buchan. 1937. "100% Bank Reserves." *Harvard Business Review* 15 : 438–447. Reproduit dans Dimand (2007), Vol. 3.

Rothbard, Murray N. 1962a. "The Case for a 100 Per Cent Gold Dollar." In : L. B. Yeager (ed.), *In Search of a Monetary Constitution. Cambridge*, MA : Harvard University Press, 94–136.

Rothbard, Murray N. 1962b. *The Panic of 1819: Reactions and Policies*. New York, NY : Columbia University Press.

Rothbard, Murray N. 1995a. *An Austrian Perspective on the History of Economic Thought. Volume 1, Economic Thought before Adam Smith*. Aldershot, UK : Edward Elgar.

Rothbard, Murray N. 1995b. *An Austrian Perspective on the History of Economic Thought. Volume 2, Classical Economics*. Aldershot, UK : Edward Elgar.

Sandilands, Roger J. 1990. *The Life and Political Economy of Lauchlin Currie. New Dealer, Presidential Adviser, and Development Economist*. Durham et London : Duke University Press.

Sandilands, Roger J. 2004. "Editor's Introduction." *Journal of Economic Studies* 31 (3/4) : 171–193.

Schemmann, Michael. 1991. *Money in Crisis*. Vancouver : Schemmann.

Schiming, Richard C. 1996. "Reviewed Work: 'The Chicago Plan & New Deal Banking Reform', by Ronnie J. Phillips." *The Journal of Economic History* 56 (1) : 264–265.

Schobert, Franziska. 2003. "Euroisation: Assessing the Loss of Seigniorage and the Impact on the Interest Premium in Central European Countries." *Revue économique* 54 (5) : 915–935.

Schumpeter, Joseph A. 1939. *Business Cycles*. New York, NY : McGraw Hill.

Schumpeter, Joseph A. 1948. "Irving Fisher's Econometrics." *Econometrica* 16 (3) : 219–231.

Schumpeter, Joseph A. 1954. *A History of Economic Analysis*. New York, NY : Oxford

University Press.

Schwartz, Anna J. [1987] 2008. “Banking School, Currency School, Free Banking School.” In : S. N. Durlauf et L. E. Blume (eds.), *The New Palgrave Dictionary of Economics*, Seconde édition. Houndmills, Basingstoke : Palgrave Macmillan.

Sherman, Lawrence F., Case M. Sprenkle, et Bryan E. Stanhouse. 1979. “Reserve Requirements and Control of the Money Supply: Note.” *Journal of Money, Credit and Banking* 11 (4) : 486–493.

Sigurjónsson, Frosti. 2015. “Monetary Reform. A Better Monetary System For Iceland.” Rapport commandé par le Premier ministre d’Islande.

Simons, Henry C. [1934] 1948. “A Positive Program for Laissez-Faire.” In : H. C. Simons, *Economic Policy for a Free Society*, Chicago, IL : University of Chicago Press, 1948. Originellement publié dans : H. C. Simons, *A Positive Program for Laissez-Faire.* Public Policy Pamphlet No 15, Chicago, IL : University of Chicago Press, 1934, 40–77.

Simons, Henry C. 1935. “Reviewed Work: ‘The Supply and Control of Money in the United States’, by Lauchlin Currie.” *Journal of Political Economy* 43 (4) : 555–558.

Simons, Henry C. 1936. “Rules versus Authorities in Monetary Policy.” *Journal of Political Economy* 44 (1) : 1–30.

Simons, Henry C. 1944. “On Debt Policy.” *Journal of Political Economy* 52 (4) : 356–361.

Simons, Henry C. 1946. “Debt Policy and Banking Policy.” *The Review of Economics and Statistics* 28 (2) : 85–89.

Simons, Henry C., Garfield V. Cox, Aaron Director, Paul H. Douglas, Albert G. Hart, Frank H. Knight, Lloyd W. Mints, et Henry Schultz. [1933] 1994. “Banking and Currency Reform.” Mémorandum daté de novembre 1933, publié pour la première fois dans : W. Samuels (ed.), *Research in the History of Economic Thought and Methodology*, Archival Supplement 4, JAI Press Inc., 31–40.

Smith, Vera C. 1936. *The Rationale of Central Banking and the Free Banking Alternative*. Westminter, England : King and Son.

Soddy, Frederick. [1926] 1933. *Wealth, Virtual Wealth and Debt. The Solution of the Economic Paradox.* Seconde édition. London : Britons Publishing Company.

Soddy, Frederick. 1933a. *Money versus Man*. London : Elkin Mathews & Marrot.

Soddy, Frederick. 1933b. “Wealth, Capital, and Money. A Résumé of My Theories.” *Economic Forum* (Summer) : 291–301.

Soddy, Frederick. 1934. *The Rôle of Money. What It Should Be, Contrasted to What It Has Become*. London : George Routledge and Sons.

Spahr, Walter E. 1938. *The Fallacies of Professor Irving Fisher’s 100% Money Proposal*. New York, NY : Farrar & Rinehart. Reproduit dans Dimand (2007), Vol. 3.

Sprague, O. M. W. 1911. “Reviewed Work: ‘The Purchasing Power of Money’, by Irving Fisher.” *The Quarterly Journal of Economics* 26 (1) : 140–151. Reproduit dans Dimand (2007), Vol. 2.

Tavlas, George S. 2018. “On the Controversy over the Origins of the Chicago Plan for 100 Percent Reserves: Sorry Frederick Soddy: It Was Knight and (Most Probably) Simons!” Document de travail.

Tavlas, George S. 2019a. “‘The Group’: The Making of the Chicago Monetary Tradition, 1927–36.” *History of Political Economy* 51 (2) : 259–296.

Tavlas, George S. 2019b. “A Reconsideration of the Doctrinal Foundations of Monetary-Policy Rules.” Papier présenté lors de la 46ème Conférence annuelle de l’*History of Economics Society*, Columbia University, New York City (États-Unis), 20-23 juin 2019.

Tellkampf, J. Louis. 1842. “The Currency—Method of Correcting the Currency without the Aid of a United States Bank.” *Hunt’s Merchants’ Magazine and Commercial Review* 6 (1) : 65–71.

Tellkampf, J. Louis. 1859. “Money and Banks.” In : *Essays on Law Reform, Commercial Policy, Banks, Penitentiaries, Etc.* London : Williams and Norgate, 137–184. Reproduit dans *Hunt’s Merchants’ Magazine and Commercial Review*, 55 (2-3), 1866 : 95-104, 169–184.

Tellkampf, J. Louis. 1867. *Die Prinzipien Des Geld-Und Bankwesens*. Berlin : Julius Springer.

Tellkampf, J. Louis. 1873. *Erforderniss Voller Metalldeckung Der Banknoten*. Berlin : Julius Springer.

Théret, Bruno. 2018. “Politiques de définanciarisation de la monnaie. Diversité des pratiques et stratégies possibles de définanciarisation à l’international et dans les États unitaires.” Document de travail.

Thomas, Rollin G. 1940. “100 Per Cent Money: The Present Status of the 100 Per Cent Plan.” *The American Economic Review* 30 (2) : 315–323. Reproduit dans Dimand (2007), Vol. 3.

Thornton, Henry. [1802] 1939. *An Enquiry into the Nature and Effects of the Paper Credit of Great Britain.* Édité avec une introduction de F. A. von Hayek. London : George Allen & Unwin.

Tobin, James. 1985. “Financial Innovation and Deregulation in Perspective.” Bank of Japan, *Monetary and Economic Studies*, 3, 19–29.

Tobin, James. 1987a. “The Case for Preserving Regulatory Distinctions.” In : *Restructuring the Financial System,* Kansas City : Federal Reserve Bank of Kansas City, 167–183.

Tobin, James. 1987b. “Financial Intermediaries.” In : J. Eatwell, M. Milgate et P. Newman (eds.), *The New Palgrave: A Dictionary of Economics*, 3470–3487. London : Palgrave Macmillan.

Tolley, George S. 1962. “100 Per Cent Reserve Banking.” In : L. B. Yeager (ed.), *In Search of a Monetary Constitution.* Cambridge, Massachusetts : Harvard University Press, 275–304.

Tooke, Thomas. 1838. *A History of Prices and of the State of the Circulation, from 1793 to 1837. Volume 2*. London : Longman, Orme, Brown, Green and Longmans.

Tooke, Thomas. 1840. *A History of Prices and of the State of the Circulation, 1838–1839. Volume 3*. London : Longman, Orme, Brown, Green and Longmans.

Tooke, Thomas. 1844. *An Enquiry into the Currency Principle*. London : Longman, Brown, Green and Longmans.

Toporowski, Jan. 2010. “Henry Simons and the Other Minsky Moment.” *Studi e Note Di Economia* 15 (3) : 363–368.

Torrens, Robert. 1837. *A Letter to the Right Honourable Lord Viscount Melbourne on the Causes of the Recent Derangement in the Money Market and on Bank Reform.* Seconde édition, avec des ajouts. London : Longman, Rees, Orme, Brown and Green.

Torrens, Robert. 1840. *A Letter to Thomas Tooke, Esq.* London : Longman, Orme, Brown, Green and Longmans.

Torrens, Robert. [1848] 1857. *Sir Robert Peel's Act, Explained and Defended.* Troisième édition, révisée et élargie. London : Longmans, Paternoster Row; Ridgway, Piccadilly.

Torrens, Robert. 1858. "Lord Overstone on Metallic and Paper Currency." *Edinburg Review* (107) : 248–293.

Turner, Adair. 2015. *Between Debt and the Devil. Money, Credit, and Fixing Global Finance*. Princeton, NJ : Princeton University Press.

Vanderlint, Jacob. 1734. *Money Answers All Things*. London: Printed for T. Cox.

Vila, Adrien. 2018. "Cycles et instabilité chez I. Fisher : le libéralisme à l'épreuve de la monnaie." Thèse de doctorat. École des Hautes Études en Sciences Sociales, Paris.

Viner, Jacob. 1937. *Studies in the Theory of International Trade*. New York, NY : Harper.

von der Becke, Susanne, et Didier Sornette. 2017. "Should Banks Be Banned From Creating Money? An Analysis From the Perspective of Hierarchical Money." *Journal of Economic Issues* 51 (4) : 1019–1032.

Von Peter, Goetz. 2005. "Debt-Deflation: Concepts and a Stylised Model." Bank for International Settlements. BIS Working Papers, No 176.

Wagemann, Ernst. 1932. *Monetary and Credit Reform*. Berlin : Reichsdruckerei.

Walker, Charles H. 1935. "The 'Chicago Plan' of Banking Reform. The Application of the Proposals in England." *The Review of Economic Studies* 2 (2) : 117–121.

Wallich, Henry C. 1984. "A Broad View of Deregulation." Discours donné à la *Conference on Pacific Basin Financial Reform*, San Francisco, CA, 2 décembre 1984.

Walras, Léon. [1879] 1898b. "Théorie mathématique du billet de banque." In : L. Walras, *Études d'économie politique appliquée. Théorie de la production de la richesse sociale*, Lausanne : F. Rouge ; Paris : F. Pichon, 339–375.

Walras, Léon. [1884] 1898b. "Monnaie d'or Avec Billon d'argent Régulateur." In : L. Walras, *Études d'économie politique appliquée. Théorie de la production de la richesse sociale*, Lausanne : F. Rouge ; Paris : F. Pichon, 3-19. Originellement publié dans la *Revue de Droit international et de Législation comparée*, 16, 1884 : 575-588.

Walras, Léon. [1885] 1898b. "D'une méthode de régularisation de la variation de valeur de la

monnaie." In : L. Walras, *Études d'économie politique appliquée. Théorie de la production de la richesse sociale*, Lausanne : F. Rouge ; Paris : F. Pichon, 26–49.

Walras, Léon. [1886] 1898b. "Théorie de la monnaie." In : L. Walras, *Études d'économie politique appliquée. Théorie de la production de la richesse sociale*, Lausanne : F. Rouge ; Paris : F. Pichon, 63–153.

Walras, Léon. [1898a] 1898b. "La Caisse d'épargne postale de Vienne et le comptabilisme social." In : L. Walras, *Études d'économie politique appliquée. Théorie de la production de la richesse sociale*, Lausanne : F. Rouge ; Paris : F. Pichon, 376-398. Originellement publié dans la *Revue d'économie politique*, 12 (3), mars 1898, 202-220.

Walras, Léon. 1898b. *Études d'économie politique appliquée. Théorie de la production de la richesse sociale*. Lausanne : F. Rouge ; Paris : F. Pichon.

Walras, Léon. [1898] 1992. *Études d'économie politique appliquée. Théorie de la production de la richesse sociale.* Lausanne : F. Rouge ; Paris : F. Pichon, 1898. In : P. Dockès *et al*. (eds.), *Œuvres économiques complètes d'Auguste et Léon Walras*, Vol. 10, *Études d'économie politique appliquée*, préparé par Jean-Pierre Potier. Paris: Economica.

Walras, Léon. [1898] 2004. *Studies in Applied Economics.* Vol. 1. Traduction anglaise de L. Walras, *Études d'économie politique appliquée*. Lausanne : F. Rouge ; Paris : F. Pichon, 1898. Traduit et introduit par Jan van Daal. Milton Park : Routledge.

Walras, Léon. [1898] 2005. *Studies in Applied Economics.* Vol. 2. Traduction anglaise de L. Walras, *Études d'économie politique appliquée*. Lausanne : F. Rouge ; Paris : F. Pichon, 1898. Traduit et introduit par Jan van Daal. Milton Park : Routledge.

Walsh, Carl E. [1998] 2010. *Monetary Theory and Policy*. Troisième édition. Cambridge, MA : MIT Press.

Warburton, Clark. 1949. "The Secular Trend in Monetary Velocity." *The Quarterly Journal of Economics* 63 (1) : 68–91.

Watkins, Leonard L. 1938. *Commercial Banking Reform in the United States: With Especial Reference to the 100 Per Cent Plan and the Regulation of Interest Rates on Bank Deposits*. Vol. 5. Michigan Business Studies 8. Ann Arbor, MI : University of Michigan.

Whale, P. Barrett. 1944. "A Retrospective View of the Bank Charter Act of 1844."

Economica 11 (43) : 109–111.

Whalen, Charles J. 1988. “The Minsky-Simons Connection: A Neglected Thread in the History of Economic Thought.” *Journal of Economic Issues* 22 (2) : 533–544.

Whalen, Charles J. 1994. “Henry Simons on Banking and Currency Reform: An Introduction.” *Research in the History of Economic Thought and Methodology*, Archival Supplement 4 : 23–29.

Whittlesey, Charles R. 1935. *Banking and the New Deal*. Public Policy Pamphlet No. 16. Chicago, IL : University of Chicago Press.

Wolf, Martin. 2014a. *The Shifts and the Shocks: What We’ve Learned – and Have Still to Learn – from the Financial Crisis*. London : Penguin Books.

Wolf, Martin. 2014b. Discours donné lors de la conférence ‘Does Money Grow on Trees?’, ICAEW, London, 9 septembre 2014.

Wood, Elmer. 1939. *English Theories of Central Banking Control, 1819-1858*. Cambridge, MA : Harvard University Press.

Wray, L. Randall. [2012] 2015. *Modern Money Theory: A Primer on Macroeconomics for Sovereign Monetary Systems.* Seconde édition. Houndmills, Basingstoke, Hampshire ; New York, NY : Palgrave Macmillan.

Wright, Quincy, ed. 1932. *Gold and Monetary Stabilization. Lectures on the Harris Foundation*. Chicago, IL : University of Chicago Press.

Yeager, Leland B., ed. 1962a. *In Search of a Monetary Constitution*. Cambridge, MA : Harvard University Press.

Yeager, Leland B. 1962b. “Introduction.” In : L. B. Yeager (ed.), *In Search of a Monetary Constitution. Cambridge,* MA : Harvard University Press, 1–25.

Zarlenga, Stephen. 2002. *The Lost Science of Money*. Valatie, NY : American Monetary Institute.

INDEX DES NOMS D'AUTEURS

A

Adams, John 30
Adams, John Quincy 30
Alchian, Armen A. 14
Aliber, Robert Z. 13-14
Allais, Maurice 18, 20-21, 31, 58-59, 66, 102, 108-109, 114, 120, 124, 162, 171-174, 182, 184
Anderson, Benjamin M. 56
Angell, James W. 20, 35, 38, 52-53, 56, 68, 75, 86, 102, 108, 120, 164, 169
Arakie, Ralph 140
Arnon, Arie 76
Assous, Michaël 140

B

Bagehot, Walter 94-95
Baltensperger, Ernst 63
Barber, G. Russell 20, 169
Barber, William J. 19, 36, 38, 44, 47, 50-52, 54, 102, 104, 139
Ben-El-Mechaiekh, Hichem 186
Benes, Jaromir 68-69, 102, 123, 162
Béraud, Alain 19
Bernholz, Peter 56
Black, S. 155, 157
Blanchard, Olivier 157
Blaug, Mark 19
Block, Walter 63
Bromberg, Benjamin 31
Brown, Harry Gunnison 54-55, 122-123, 169
Buchanan, James M. 71
Buiter, Willem H. 157, 159
Burns, Scott 71

C

Cagan, Phillip 157, 160
Cairnes, John Elliott 185
Cantillon, Richard 156, 185
Cargill, Thomas F. 37
Carroll, Charles Holt 13, 18, 30-31, 70, 81, 102, 118
Cernuschi, Henri 32
Challe, Édouard 140
Chapin, Ned 20, 169
Chari, V.V. 71
Chiarella, Carl 70
Chuilon, Raymond 65
Cochrane, John H. 67
Commons, John R. 51, 75
Courcelle-Seneuil, Jean-Gustave 32
Cox, Garfield V. 38-39, 42, 75, 102, 129, 161
Cummings, John R. 31
Currie, Lauchlin B. 15, 18, 20, 22-23, 37-38, 40, 45-46, 48-50, 53, 56, 67-68, 75, 77, 82, 87, 90, 96, 101-103, 106-119, 122, 124-125, 153-155, 161-162, 164-169, 173, 177, 181

D

Daly, Herman E. 19, 34-35, 66, 71
de Boyer des Roches, Jérôme 19, 94, 132, 136
Demeulemeester, Samuel 75-76, 78, 81-83, 90, 101, 129, 145, 147-148, 151, 153, 160, 162, 167, 182
Diamond, Douglas W. 123
Diatkine, Sylvie 19, 77, 85, 94, 181
Dimand, Robert W. 20, 26, 36-37, 39, 47, 49, 54, 56, 101-102, 116, 129-130, 132-134, 136, 139-140, 144, 186
Director, Aaron 38-39, 42, 75, 102, 129, 161
Dittmer, Kristofer 66, 71
Dix, John 30
Doepke, Matthias 185
Douglas, Paul H. 38-40, 42- 44, 51-52, 75, 86, 102, 129, 161-162, 170
Dow, Sheila 70
Drummond, Henry 28, 84
du Puynode, Gustave 32
Durand, Jean-Jacques 20
Dutraive, Véronique 51
Dutton, George 30
Dybvig, Philip H. 123
Dyson, Ben 66, 71, 102, 162

E

Eccles, Marriner S. 46, 48-50
Edgeworth, Francis Y. 95
El Herradi, Mehdi 185
Ellsworth, Paul T. 38
England, Minnie Throop 138-139

F

Faccarello, Gilbert 19

Farley, Joshua C. 71
Fetter, Frank W. 28, 76, 82-84, 92-94
Fischer, Stanley 19
Fisher, Irving 15-20, 22-24, 27, 32-34, 36-38, 40-54, 56, 58-60, 62, 64-70, 75-76, 78, 80-82, 85-87, 91-93, 95-96, 98-99, 101-119, 122-125, 129-151, 153-156, 158-159, 161-169, 171, 173, 177, 179-181, 183-184, 186
Fisk, Harvey E. 47
Flaschel, Peter 70
Fontana, Giuseppe 71, 169
Friedman, Benjamin M. 19
Friedman, Milton 18, 19, 20, 22, 36, 37, 49, 59, 60, 61, 62, 67, 71, 87, 102, 108, 109, 111, 112, 114, 120, 121, 157, 162, 168
Fullarton, John 76
Furceri, Davide 185

G

Galand, Gabriel 67
Geyer, Philip Joseph 31
Gilbart, James W. 91
Giraud, Gaël 67
Glasner, David 124
Gocht, Rolf 65
Gomez Betancourt, Rebeca 101, 129, 132, 136, 140
Gomez, Christian 20, 66, 70
Goodhart, Charles A. E. 71, 77, 123, 159
Gouge, William M. 30
Graham, Frank D. 51, 53-54, 75-76, 157, 162
Gregory, Theodore E. 76
Grjebine, André 67, 162
Groseclose, Elgin Earl 56

H

Hahn, Frank H. 19
Hamilton, Earl J. 51, 75
Hansen, Alvin H. 56, 77, 86, 169
Hardy, Charles O. 38, 42
Harris, Joseph 26
Harrod, Roy 35
Hart, Albert G. 39-40, 46, 52, 57, 75, 87, 102, 104, 129, 153-154, 161, 166, 168-173, 179
Hartmann, Florian 70
Hautcœur, Pierre-Cyrille 16
Hawtrey, Ralph G. 53, 58, 62, 130, 184
Hayek (von), Friedrich A. 27, 44, 55-56, 61, 77, 184-185
Higgins, Benjamin 54-56, 123, 169
Hoover, Herbert 37-38, 40, 67
Hoppe, Hans-Hermann 63
Hotson, John H. 61, 65
Hubbard, R. Glenn 19
Huber, Joseph 65-66, 70, 102, 162, 185
Hübner, Otto 31
Huerta de Soto, Jesús 20, 63, 105
Hume, David 18, 25-26, 30
Humphrey, Thomas M. 37

I

Ingrao, Bruna 13, 75

J

Jackson, Andrew 66, 102, 162
Jacoud, Gilles 20
Jefferson, Thomas 30
Jensen, Meinhard A. 71, 77, 123
Jevons, William Stanley 33, 87, 94
Joplin, Thomas 19, 27-28, 30, 32, 84
Jordà, Òscar 185
Juglar, Clément 16
Juurikkala, Oskari 32

K

Kaminow, Ira 63
Kareken, John H. 63
Kay, John A. 68
Keen, Steve 70
Kendall, Amos 30
Keynes, John Maynard 34, 51, 56-57, 64, 70, 186
Kindleberger, Charles P. 13-14
King, Mervyn 13-15, 69-70, 124, 140
King, Willford I. 51, 56, 75
Klein, Benjamin 14
Klein, Martin 157-159
Knight, Frank H. 35-36, 38-39, 41-42, 66, 75, 86, 102, 129, 161, 169
Koo, Richard C. 14
Kotlikoff, Laurence J. 19, 67, 102
Krainer, Robert E. 71
Kregel, Jan 20, 65, 157, 186
Kumhof, Michael 68-69, 102, 123, 162

L

Laidler, David 19, 38, 81, 85, 94-95, 102, 132, 136, 185
Lainà, Patrizio 21, 69, 71, 102
Le Maux, Laurent 26, 75, 92-93, 101, 129
Leeson, Robert 20
Lehmann, Fritz 56, 122-123, 169
Leroy, Aurélien 185
Lester, Richard A. 52, 118, 162
Levitin, Adam J. 67, 102, 119, 124
Lin Lin 53
Litan, Robert E. 63, 103
Loef, Hans-E. 130
Longfield, Mountifort 29
Loyd, Samuel J. 29, 76, 78-80, 82, 84, 86, 88-90, 92
Luttrell, Clifton B. 26, 30
Lutz, Friedrich A. 56

M

Machlup, Fritz 56
Makinen, Gail E. 157
Malthus, Thomas Robert 26, 161, 185
Mannequin, Théodore 32
Marget, Arthur W. 19, 32, 35
Market, Donald R. 20, 169
Marshall, Alfred 81, 184
McCulloch, John Ramsay 29
McLane, Stephen E. 20, 119, 169
Means, Gardiner C. 43, 68
Meltzer, Allan H. 46, 49
Mill, John Stuart 76, 185
Minsky, Hyman P. 18, 20, 36, 64-65, 102, 114, 120, 182
Mints, Lloyd W. 17, 19, 27, 30, 38-39, 42, 59, 75-76, 78, 102, 118, 129, 161, 186
Mises (von), Ludwig 18, 20, 32-34, 56, 81, 105, 161, 182, 184
Mitchell, Wesley C. 138
Modeste, Victor 32
Monissen, Hans G. 130
Morgenthau, Henry 43, 46, 168

N

Nersisyan, Yeva 71
Neuman, Andrew M. 56, 122-123
Neumann, Manfred J. M. 157-159
Niehans, Jürg 19
Norman, George W. 29, 76, 78, 80, 86, 88-89, 92
Nosal, Ed 71

P

Paganelli, Maria Pia 26
Pahlke, Jürgen 65
Patinkin, Don 136, 150
Peel, Sir Robert 91-92
Pennington, James 28, 84, 89, 91
Phelan, Christopher 71
Phillips, Ronnie J. 20-22, 34-36, 38-39, 41, 43-44, 46, 48-50, 55, 57, 61, 63-65, 68, 75, 77, 101-103, 120, 122, 129-130, 144, 149, 154, 168-169, 181
Poole, William 63
Proaño, Christian R. 70

R

Raguet, Condy 30
Randolph, Thomas 30
Raymond, Daniel 30
Rebeyrol, Antoine 139
Reeve, Joseph E. 57, 122, 169
Reich, Jens 3, 153, 156-159
Reinhart, Carmen M. 13
Ricardo, David 18, 26, 28-29, 33, 69, 79, 87, 101, 154, 157, 160-161, 166
Rist, Charles 19, 76
Robbins, Lionel 19, 56, 86, 90
Robertson, James 65-66, 102
Robinson, George Buchan 56, 116, 118, 122-123
Rogoff, Kenneth S. 13
Roosevelt, Franklin Delano 39, 41, 43, 47-48, 50, 158, 169
Rossi, Sergio 70
Rothbard, Murray N. 20, 26, 30-31, 56, 62-63, 105
Ruml, Beardsley 42

S

Salerno, Joseph T. 63
Sandilands, Roger J. 3, 20, 38, 46, 48-50, 101-102
Sardoni, Claudio 13
Sawyer, Malcolm 71, 169
Schemmann, Michael 65
Schiming, Richard C. 22, 102

Schobert, Franziska 157, 159
Schularick, Moritz 185
Schultz, Henry 38-39, 75, 102, 129, 161
Schumpeter, Joseph A. 19, 27, 77-78, 130, 140, 142
Schwartz, Anna J. 29, 36-37, 49, 67, 80, 111
Sherman, Lawrence F. 63
Sigurjónsson, Frosti 66, 102
Simons, Henry C. 15, 17, 20, 22, 24, 36, 38, 40-45, 48, 50, 53-56, 59-60, 64-65, 68-69, 75-76, 78, 82-83, 86, 90, 96, 102-103, 105, 108-109, 111-114, 119-123, 125, 129, 148, 150, 153-154, 161-163, 166, 169, 173, 177, 183, 186
Skousen, Mark 63
Smith, Vera C. 31
Soddy, Frederick 18-19, 34-36, 53, 66, 81, 102, 161-162
Sornette, Didier 71
Spahr, Walter E. 56
Sprague, O. M. W. 138
Sylvester, Isaiah W. 31

T

Tavlas, George S. 20, 36, 38, 43, 86
Taylor, Alan M. 185
Tellkampf, J. Louis 31-32
Théret, Bruno 51
Thomas, Rollin G. 54-55, 122-123, 169
Thornton, Henry 81, 185
Timberlake, Richard H. 37
Tobin, James 18, 63-64, 102, 118, 120, 182
Tolley, George S. 62, 66, 115, 118, 169
Tooke, Thomas 76, 89, 93
Toporowski, Jan 64
Torrens, Robert 29, 76, 80, 82, 86, 89, 92-93
Tugwell, Rexford Guy 43, 68
Turner, Adair 66-67, 69, 124

V

Vanderlint, Jacob 25-26
Vila, Adrien 21, 101, 129, 140
Viner, Jacob 27-29, 46, 76, 84, 93, 168-169, 173
von der Becke, Susanne 71
Von Peter, Goetz 141

W

Wagemann, Ernst 63
Walker, Amasa 30
Walker, Charles H. 52
Wallace, Henry A. 40-41, 169
Wallich, Henry C. 63
Walras, Léon 18-20, 32-34, 81, 87, 102, 118, 161, 186
Walsh, Carl E. 157, 159
Warburton, Clark 37, 111
Watkins, Leonard L. 56, 77, 87, 104, 118, 122-123, 169
Werner, Richard A. 66
Whale, P. Barrett 93
Whalen, Charles J. 20, 64, 102, 114, 123
White, Harry D. 38
Whittlesey, Charles R. 51-52, 75, 120
Wicksell, Knut 81, 184
Wolf, Martin 13, 66, 69, 124, 181, 185
Wood, Elmer 76
Wray, L. Randall 71, 105
Wright, Quincy 38, 44, 50

Y

Yeager, Leland B. 62, 171

Z

Zarlenga, Stephen 65