

Money Creation, Banks and Macroeconomic Instability

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Synopsis

The function of money creation by banks remains a mystery to many. Galbraith remarked “The process by which banks create money is so simple that the mind is repelled.” (Galbraith 1975: 18) Creating money *ex nihilo* is an extraordinary phenomenon which has profound economic consequences.

Curiously though, orthodox economic theory relegates money creation to the periphery. The convention is that the role of banks in macro-theories is solely to facilitate the conversion of savings into investment via the money market. Major macroeconomic schools maintain that governments (or central banks) have control over the money supply, that the money supply exhibits inelasticity and that the financial sector is a benign responder to the decisions taken by authorities. Although the genesis of macroeconomic instability is hotly contested, the role of banks is generally regarded as passive rather than active.

In the history of economic thought, however, some notable economists have taken a very different view. They argued that the role of banks as money creators is the principal cause of macroeconomic instability. Banks are not passive agents whose balance sheets are directed by external causes. Rather banks are seen by them as the engine that drives the business cycle.

What sparked this dissertation was my surprise discovery that Leon Walras identified banks as the chief cause of macroeconomic instability. Walras is well remembered for his derivation of the general equilibrium framework through which is demonstrated the efficient operations and optimality of a free-market system. So it came as a revelation to learn that Walras did not support the application of the free-market principles he had espoused for goods and services markets to financial markets. Walras stated unreservedly: "So the industry of credit and discount with the issue of bank notes is not an

industry like any other; *it is an industry that must be regulated and not given freedom.*" (Walras 1936: 368, emphasis added)

Other eminent mainstream economists who came to a similar conclusion as Walras were Irving Fisher and members of the Chicago School – Henry Simons, Frank Knight, Lloyd Mints and Jacob Viner. They were all strongly committed to a policy of *laissez faire* with one crucial exception, the creation and supply of money. Milton Friedman also accepted the position but did not actively endorse it for practical and theoretical reasons.

The argument put forward by Walras and others to arrest the institutionalized nature of money creation by private banks, stands in stark contrast to the widespread deregulation of banking and financial markets that began in the 1980's. This deregulation effectively dismantled the constraints imposed by governments to support and sustain their countries' economies in the face of the difficulties posed by deep recessions or depressions. The great monetary and banking debates in England through the course of the 19th century had linked those disturbances with the operations of financial markets and the British Parliament opted for regulatory measures in order to stave off similar events. Other nations in the developed world took Britain's lead and also imposed regulatory measures upon banks for the same reasons. Yet the current orthodoxy it seems has either ignored those reasons or no longer deems them valid.

This dissertation explores and extends Walras' original insight in the context of the contemporary deregulated financial environment. Mainstream macro-theories are critically assessed and it is argued that insufficient regard is being paid in them to the role of money creation by private banks. A descriptive model of the money market is presented which highlights the effect of money creation. Finally, a policy proposal is offered as a solution for limiting financial sector sourced macroeconomic instability.

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Signed.....

Date.....

I gratefully acknowledge the able guidance and assistance of my supervisors, Athol Fitzgibbons, John Forster and Tony Makin.

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CHAPTER 1

INTRODUCTION

This PhD dissertation grew out of an interest in two related areas. Firstly, the nature of money and the origins of modern banking. Secondly, early economists' understanding of money and the process of money creation by banks.

The line of research pursued upon that interest led to the formulation of an idea that present day understanding of the money creation process and its interpretation could be questioned and open to reappraisal. In particular, the way in which that process is separated in formal general equilibrium analysis under both Classical and Keynesian conventions, can be argued to be incongruous and in need of refinement. In contrast with those conventions, there are a number of historical authors who highlighted money creation in their macroeconomic frameworks and considered the role of banks as money creators to be the chief cause of the business cycle.

The proposition of certain earlier writers - that money creation by private banks engenders macroeconomic instability - was not considered when nations throughout the world embraced financial deregulation in the 1970s and 80s. Microeconomic efficiency gains were alone emphasized and argued in defence of the revision of financial institution arrangements. It seemed

plausible that banking practice could be a source of macroeconomic disturbance, and that insufficient attention had been given to it in the literature.

Moreover, in consequence of deregulation there exists an opportunity to test the validity of the proposition. Given that bank controls and restrictions were dismantled permitting the role of banks as money creators to be enhanced, the proposition implies that macroeconomic instability should ensue. Detrimental macroeconomic consequences did appear to be realized with the advent of pronounced economic cycles throughout those nations that embraced deregulation. The method by which money is created via the issue of loans directly links the money supply to the overall level of debt and in turn the collateral to that debt, being asset values and income/profit streams. The post-deregulatory period is notably characterized by debt and asset-price boom/bust episodes across a broad range of countries.

The major task of the thesis is to explore the conjecture that the creation of money by private banks is the principal cause of boom/bust episodes practically and theoretically. The essential question addressed is can that proposition put by historical figures be supported by the recent evidence of economic experience, and are current trends in economic theory demonstratively inadequate in terms of their treatment of money creation? The thesis borrows, therefore, a historical conjecture and examines it against current practical and theoretical regimes.

1. HISTORICAL ADVOCATES FOR THE ABOLITION OF MONEY CREATION BY PRIVATE BANKS

Leon Walras held the heterodox position that banks should not be permitted a money creating facility and that the banking industry was the *one* industry that had to be regulated. Walras stated:

"So the industry of credit and discount with the issue of bank notes is not an industry like any other; *it is an industry that must be regulated and not given freedom.*" (Walras 1936: 368, emphasis added)

Walras reasoned that the role of prices in a market system was detrimentally impacted by money-creation and that this process was the principal cause of the business cycle.

A crucial device of his general-equilibrium theory was the '*numeraire*'. The *numeraire* was the commodity-standard by which the relative prices of all other goods and services were determined. Walras directly linked the *numeraire* with the monetary instrument. Walras identified the precious metals - gold - as possessing the necessary characteristics to perform the appropriate functions of the *numeraire*-money. It became clear to Walras that redeemable bank notes upset the operation of the *numeraire*, because they behaved like a money substitute for gold. Manipulations of the quantity of

these notes in circulation would markedly affect the relative price of the *numeraire* itself which had a domino effect upon the rack of all other prices:

"... the addition into circulation of a certain quantity of paper money with a quantity of metallic money depreciates the latter, raises prices and troubles the workings of exchange." (Walras 1936: 367-368)

What was essential for the efficient operations of a *numeraire* was stability in its own relative price. Of course, it was not only changes in the supply of bank notes that would prove to be disruptive but also changes in the supply of precious metals themselves:

"We shall see, in our study of applied economics, how far-reaching are the consequences of this law (i.e. the Quantity Theory) which places the whole equilibrium of the market *at the mercy of mine operators, issuers of bank notes and drawers of cheques.*" (Walras 1954: 366-367, emphasis added)

However, while changes in the supply of the metal-money would be detrimental, it was much easier to generate fluctuations in the supply of paper-money, and this was frequently happening through the institutional practices of banks. That is why he established "the school for the prohibition of all issues of bank notes". (Walras 1936: 366) Walras wanted the power to create (and destroy) money removed from private banks.

Given the importance of Walras' general equilibrium analysis, as it provides the essential framework for present-day macroeconomic theory, his conclusion regarding banking practice is striking. A question posed was whether or not other mainstream economists had also adopted this position, and could their position be interpreted in and contrasted with the current orthodoxy which promotes free markets including financial markets.

In pursuit of that endeavour, the methodology needed to be both historical and analytical. It was discovered that during the depression years and its aftermath there was a significant company of mainstream economists who championed the same idea as Walras.¹ Most importantly were Irving Fisher and members of the Chicago School – Henry Simons, Frank Knight, Lloyd Mints and Jacob Viner.² They were all strongly committed to a policy of *laissez faire* with one crucial exception, the creation and supply of money.

Irving Fisher was the most prominent and passionate advocate for the wresting of money creation and destruction away from private banks. Other figures who supported the idea at this time include Fritz Machlup, Henry Schultz, G.V. Cox, Aaron Director, Paul Douglas, A.G. Hart, Lauchlin Currie, James Angell, Leonard Watkins, Benjamin Higgins and, in Europe, Maurice

¹ Although it seems they were unaware of his stance. I could find no reference to Walras made in that era in relation to his unorthodox position on banking. Walras was an economics professor at the University of Lausanne in Switzerland. Walras's works were published in French and his major piece on general equilibrium theory *Elements of Pure Economics*, was translated by William Jaffe only in 1954. His position on banking was explained in his 'applied' work which was not translated.

² Major references follow in the chapters later.

Allais. Fisher claimed that almost one quarter of the members of the American Economics Association had offered support for this proposal.

A statement entitled a “Program for Monetary Reform” was sent to President Roosevelt in 1940 presenting a scheme to enforce 100% reserves upon banks halting their ability to create and destroy deposit-money. It was drafted by Irving Fisher, Paul Douglas, Frank Graham, Earl Hamilton, Wilford King, Charles Whittlesey and John Commons, and “in behalf of some 400 economists”. (Allen 1993: 714)

Less orthodox economists and non-economists have also supported the argument. Notably Ludwig von Mises, and a number of adherents within the Austrian school, and the Nobel laureate (Chemistry) Frederick Soddy, who was a contemporary of the founders of the Chicago School.

The argument put forward by Walras and others to arrest the institutionalized nature of money creation by private banking companies, stands in stark contrast to the recent deregulation of financial markets. This deregulation effectively dismantled the constraints imposed by governments to support and sustain their countries’ economies in the face of the difficulties posed by deep recessions or depressions. The great monetary and banking debates in England through the course of the 19th century had linked those disturbances with the operations of financial markets and the English Parliament opted for regulatory measures in order to stave off similar events. Other nations in the

developed world took Britain's lead and also imposed regulatory measures upon banks for the same reasons. The current orthodoxy which endorses deregulation seems to have either ignored those reasons or no longer regards them to be valid.

2. FINANCIAL DEREGULATION AND FREE-MARKET ETHOS

The moves throughout the industrialized world to embrace a general free-market ethos in politics and economics, is perhaps unparalleled in history in light of the depth and breadth of practical change it has ushered in. The ideas that undergird these commitments are not new; they are as old as the science of economics itself and find their champion in Adam Smith. The Depression years had called into question the adequacy of capitalism to provide macroeconomic stability and consequently Keynesian economic management became popular in the Post-War era. However, government management and control which seemed so necessary at those times has largely been swept aside by Classical *laissez-faire* philosophy. A curious mix of events over the last three decades of the 20th century may be attributed to decisively altering politico-economic perceptions. These events included:

(1) demand management techniques proved inappropriate in dealing with the problems of stagflation which plagued most of the industrialised world during the course of the 1970's. This heralded the

demise of Keynesian economics that had provided the intellectual mandate for government activism, and it presented the platform for the re-emergence of Classical free-market ideas;

(2) the collapse of the Soviet Union in face of the realisation of the social and economic failure of the communist system. The Soviet mechanism of State control had proved incapable of matching economic growth and development experienced in the West, let alone fulfilling the Marxian vision;

(3) the phenomenal growth of the Asian 'tiger' economies which was widely regarded to be the result of their free-market structures;

(4) the information technology revolution which profoundly impacted markets by creating international networks and altering mind-sets away from national boundaries to observe inter-regional domains if not a world-wide perspective. The IT revolution has made it more difficult for governments to enforce regulations because national boundaries are less of a barrier, and perhaps it has made the imposition of government controls less advisable as the consequences are more difficult to foresee.

The drive to establish free-market conditions has impacted a range of sectors in which regulatory controls had been imposed e.g. public utilities, the labour market and the financial sector.

The question arises whether the arguments presented to support free markets are sustained in the case of the unique conditions of the banking industry which is able to manufacture its product at or near an effective marginal cost rate of zero, and taking into account that its output affects the general price level and the efficiency of the whole price system.

The case of Australia's experience is instructive. The macroeconomic consequences of financial deregulation were ignored by the various Committees of Inquiry into the Australian financial sector, established in the 1970's to examine the viability of deregulation. They concentrated upon the microeconomic efficiency gains that a deregulated system would provide, with the financial intermediary role of banks emphasised. The principal role of banks, however, is two-fold. They are on one hand financial intermediaries converting savings into expenditure via the transfer of existing funds between economic agents and, on the other hand, they are purveyors of created (ex nihilo) money injecting this new and additional money into the economic system via loans.

Australia experienced a dramatic growth in credit and boom/bust in asset prices in the late 80's early 90's, immediately following the deregulation of the

financial system. This could have been readily deduced from the position put by Walras and others. Macfarlane, the Governor of Australia's central bank, whilst acknowledging there was "a significant element of truth in th(e) assertion" that the macroeconomic instability was attributable to financial deregulation, considered it only a transitory phenomena between "the old and the new regime". He described the experience as "unforeseen consequences" and due to the lack of experience in the banking industry. (Macfarlane 1995: 8, 12) Since that time, however, Australia has again seen an astonishing rise in money stock, debt levels and asset prices, with the possibility of encountering another significant contraction. Macfarlane has since acknowledged

"I think the really fundamental answer is, if they can't sort them [financial crises] out, then the only ultimate answer is some form of re-regulation. I'm not for a minute thinking it's going to happen in the next decade. But I would not rule out the possibility that in twenty-five years, if we had a lot of bad experiences, and we go through another cycle, we must seek some very clearly thought out regulations." (Bell 2004: 395)

This dissertation seeks in part to address the omission by the Committees of Inquiry and highlight the macroeconomic consequences of the creation of money by banks. It examines the hypothesis encapsulated by the view of Walras and others, that the deleterious macroeconomic consequences, as a

cost to society, outweigh the benefits of the microeconomic efficiency gains derived from financial deregulation. It argues that instruments of regulation are ultimately insufficient to contain the effects of money creation/destruction by private banks and that a major revision of financial practices is necessary.

3. THESIS STRUCTURE AND CHAPTER SUMMARIES

The structure of the thesis is first to establish the hypothesis through an inspection of the historical figures and their reasoning. **Chapter 2** identifies past economists who have argued that the chief cause of macroeconomic instability is the manipulation of the money stock by private banks which possess the means of creating money *ex nihilo*. It systemizes their ideas.

Logically, the next step is to consider the current evidence provided by the deregulatory framework and whether there is support for their argument. In **Chapter 3** the experience of certain countries in the latter 20th century which deregulated their financial markets is canvassed. If the argument of Walras and others is valid, there should be evidence of monetary/debt expansion and economic crises arising out of the liberalization of financial markets since the 1970's. It investigates whether there is a marked increase in cyclical fluctuations in countries which have embraced deregulation.

If as suggested by the evidence presented in Chapter 3 there does indeed exist considerable support for the hypothesis, the question naturally arises

why does the current orthodoxy appear to find no place for it? The next two chapters are devoted to that task.

Chapter 4 critically assesses conventional ideas on money and banking and conjectures that there are certain inherent difficulties associated with those views. These difficulties, it is posited, inhibit the acceptance and assimilation of the argument of Walras and others.

It has proved to be a feature of economic thought from its earliest foundations, that all financial instruments used to facilitate transactional payments are grouped together as 'money'. The orthodoxy through the years has been to identify money by its functions. This functional approach to defining money, however, is problematic because it inhibits the analysis of the different types of financial instruments and their influences.

The difficulty that modern economists have been encumbered with, in comprehending the nature and essence of money, is exemplified by the mutually exclusive views of significant modern contributors to the field of money, banking and finance: namely, Gurley and Shaw (1960) and Pesek and Saving (1967). The former authors presented the view that all money was debt, while the latter argued in contradiction that all money was wealth. The origins and subsequent history of bank instruments, however, reveals that there are distinct classes of financial instruments and that they can be

separated. A case is presented here that the dilemma can be overcome by observing the distinction in the different classes of financial instruments.

Furthermore, it is conjectured that the development of monetary theory developed upon an inappropriate footing on two accounts. First, the conventional approach to defining money did not permit bank-created instruments to be distinguished. Secondly, fundamental banking practice i.e. the method by which banks are able to augment and diminish the money supply, was not adequately understood and incorporated into mainstream macroeconomic theory. It is contended that these deficiencies are evident in the literature of recent times.

There was much attention given by theorists in the latter part of the last century to the question of just how far deregulation of the banking system should go. A number argued for the complete removal of all controls. Their views have been collected under the title of 'The New Monetary Economics' (NME). Certain publications appeared in the 1970's which sparked renewed interest in *laissez faire* or free-banking that was fanned into flame with the implementation of measures to deregulate the financial systems of many industrialized nations in the 1980's. These works were authored by Black (1970), Fama (1980) (both of whom sourced their ideas from Tobin (1963)) and Friedrich von Hayek (1976, 1978). It is argued that a systemic flaw exists in NME literature, stemming from the seminal works, because advocates inappropriately develop their concepts and theories on a truncated

understanding of the role of banks. In their opinion, banks are purely financial intermediaries, and it is an easy matter from this standpoint to argue the micro-efficiency gains of unregulated banking. However, they ignore or simply set-aside the important macroeconomic implications of money creation by private banks. Consequently, it is posited that their conclusions require revision.

Chapter 5 critically examines the representation of the money market in orthodox theories. It is shown that the central role of the money market in conventional macro-theory - Keynesian and Classical streams - is solely to facilitate the conversion of savings into investment. Banks are presented merely as passive financial intermediaries that pool the funds of savers and make those funds available to investors. Similarly, the basic reason given for the availability of international capital, is that excess savings by some nations are made available in international financial markets.

However, the function of banks is much more than that which that orthodoxy is founded upon. They do not solely perform the role of financial intermediaries, passively assisting macroeconomic equilibrium determination. They are also the purveyors of new money which is injected into the macroeconomy and so actively impacting equilibrium determination with profound consequences. Accordingly, this money-creating ability of banks should be given emphasis in the constitution of the money market, along with

financial intermediation. In so doing, the argument of Walras and others is given theoretical justification.

The recent asset-price boom/busts experienced throughout the world, which will be canvassed in Chapter 3, have understandably attracted considerable attention. There is a burgeoning literature that addresses the macroeconomic problems produced by financial imbalances and it should be assessed against the views presented in this thesis. **Chapter 6** canvasses that literature and comments upon it. The literature reveals that, at first, analysts and practitioners were reticent to contemplate the need for the re-imposition of controls upon banks and money production, however, the extent of the troubles faced is forcing a few to reconsider this position. It is argued that any measures that fall short of the abolition of *ex nihilo* money creation by private banks, as put forward by Walras and others, will prove ineffective in dealing with the endemic problem.

Chapter 7 presents the conclusion to the dissertation and offers a model of the money market which highlights the function of banks as creators of money. There are certain logical inferences which flow from this apparatus pointing to the potential problems attended with common banking practice in the vein of Walras. Finally, a policy proposal is offered to contain macroeconomic instability sourced from financial imbalances.

CHAPTER 2

ADVOCATES FOR THE ABOLITION OF FRACTIONAL-RESERVE BANKING

1. INTRODUCTION

The purpose of this chapter is to establish the hypothesis in the historical record. It identifies those economists, who would generally be regarded as mainstream, who posited the view that the chief cause of macroeconomic instability was fractional-reserve banking. And who argued from that premise that the remedy to contain such volatility was the abolition of fractional-reserve banking. The ideas of two leading proponents – Walras and Fisher – are examined in detail.

The containment of monetary expansion afforded by fractional-reserve banking has long been the subject of investigation. The great monetary and banking debates in the 19th century in England, between first the Bullionists and the Anti-Bullionists and subsequently the Currency and the Banking Schools, have proved the precursor and model for a periodical and continuing investigation throughout literally the entire industrialized world. (Hollander 1910, Smith 1990, Skaggs 1999)

When countries experience rapid monetary expansion with attended boom and bust, it is an easy step to correlate the two – the former being the cause

and the latter the effect - and advocate the containment of monetary aggregates. This was the core recommendation of the Currency School in the 19th century. Banking School adherents, on the other hand, regarded monetary growth as a symptom rather than the cause of the macroeconomic instability. This division in understanding the nature of economic cycles attended by financial imbalances, and their remedies, remained a feature of economic theory and analysis throughout the 19th and 20th centuries.

The debate in practice has generally concluded with additional measures of control to restrict monetary expansion. Currency School ideas therefore have historically won the debate. One factor that has engendered this result is that Currency School ideas rest on more solid arguments than those of the Banking School. Yeager explains

“The currency school accepted the quantity theory of money and generally wanted to make a mixed system of gold and paper currency behave much as pure gold money would have done. The banking school accepted doctrines *tinged with fallacy*, doctrines about "real bills," about accommodating the quantity of money, even over the business cycle, to changes in the supposed needs of trade, and about a supposed automatic reflux of excessive bank notes.” (Preface to Smith 1990, emphasis added)

In the early 20th century, members of the Chicago School argued for the complete abolition of fractional-reserve banking, the wresting of *ex nihilo* money creation from the private banks and the enforcement of 100 per cent reserve for demand deposits. They stated that they were only endeavouring to better implement the Currency School's proposals, and that their proposals were therefore orthodox and not radical. (Allen 1993: 706)

Testifying before a House Committee in 1975, Milton Friedman in referring to the debate in America centred around the Chicago School in the 1930's, said:

“I have long believed that the most effective way to reduce regulation is to separate the monetary functions of commercial banks from their credit conscience. The way to do this would be to require all institutions offering demand deposits to keep 100-percent reserves; make them depository institutions in fact and not, as now, simply in name.... This is not a new proposal. It dates back over 40 years. It was supported in the 1930's by Henry Simons at the University of Chicago. It was proposed in a book by the great Yale economist, Irving Fisher. It has had a great deal of backing from the academic community. I believe it emerges naturally whenever banking reform is discussed, and I believe it deserves serious consideration as a feasible way to combine monetary security and stability with free and open competition in the capital market.” (U.S. House 1975: 2156-57)

The 100 percent reserve proposal in fact dates much earlier.

2. 19TH CENTURY ADVOCATES

In England, the Bullionist v Anti-Bullionist debate of the early 19th century which evolved into the Currency v Banking School controversy, produced the first writers to propose 100% reserves. Up until that time, Adam's Smith's views on money and banking were generally accepted and bank note issues (which according to Smith merely *replaced* gold rather than adding to the money stock) were regarded favourably. However, the suspension of specie payments by the Bank of England in 1897, and the monetary and economic events surrounding and continuing from that suspension, caused a pall of doubt to rise over Smith's ideas and a great deal of inquiry ensued. (Hollander 1910)

Monetary upheavals were also experienced in European countries and the debate was also mirrored elsewhere. Two camps emerged. The currency school argued that the problems were directly linked to excess note issues by banks. Amongst the ranks of the currency school were those who proposed the implementation of 100% reserves. Jacob Viner identifies the first authors to put the 100% reserve proposal in that era:

“The currency principle appears first to have been formulated during the 1820's. Joplin, in 1823, proposed a system of regulation of the issue of paper notes whose essence was the requirement of 100 per cent bullion reserves, so that "a paper circulation, by this system, would dilate and contract precisely in the same manner as a metallic currency." Henry Drummond, in 1826, similarly urged that the amount of paper money should be kept constant, so that all variations in the quantity of the currency should consist of corresponding variations in the quantity of specie.” (Viner 1937: V9)³

There was a large group of prominent individuals, both in England and the Continent, who comprised the currency school and most thought that regulating the note issue of the central bank would achieve the result of enforcing paper money to act like a purely metallic money. (Smith 1990: XII.15; Rothbard 1988: 234) That view prevailed and, in England, Peel's Act (1844) eventuated.

Within that currency group there was an important minority who advocated the imposition of a general 100% rule over all banks. That minority Smith called in her classic work “The Rationale of Central Banking”, the “strict” or “extreme” section of the currency school and she located them not in England but on the Continent (she did not mention Drummond and discussed Joplin

³ Rothbard regards Hume as an advocate for 100% reserves, however, this is not completely certain. (Rothbard 1988: 239) Hume also promoted a creeping inflation and the employment of paper money towards that end. What Rothbard is perhaps relying upon is Hume's insistence that bank notes were a “counterfeit money”. (Hume 1964: 309-340)

only as much as he had favoured joint stock banking). Smith's "strict" currency school adherents in the 19th century included, Otto Hubner, Henri Cernuschi and Victor Modeste.

In 1854, Hubner published his multi-volume "Die Banken", in which he presented the idea, which became popular in Germany at the time, to restrict note issues in such a way that it would ensure that banks only lent what they received. In France during the 1860s, Cernuschi and Modeste emerged as two strong contenders for 100% reserves during the false-money debate. (Smith 1990, Juurikkala 2002, Rothbard 1988)

Rothbard identifies an additional minor group in England during the early 19th century called the Manchester School. This group argued against the discretionary issue of notes of not only the Bank of England – the common Currency School position – but also of commercial banks in general. They advocated the erection of a National Bank that functioned on a 100% reserve note issue. (Rothbard 1988: 235-237)

In the United States during the same era there were also a few authors who advocated 100% reserves. Mints acknowledged that in the period just prior to the American civil war "there were some half-dozen men who would have required banks to carry 100 per cent reserves against demand deposits as a means of restricting the currency to "hard money" or its equivalent". (Mints 1945: 154-155)

In Switzerland, Leon Walras advocated in the late 19th century the abolition of money creation by banks. Walras regarded his view as forming “the school for the prohibition of all issues of bank notes”. (Walras 1936: 366) Although Walras did not explicitly recommend 100% reserve banking, his proposal was identical in its effect and its implementation would have required it. Walras’s stance on banking is virtually unknown, yet his general equilibrium analysis provides the framework for virtually all present day macroeconomic theory.

3. 20TH CENTURY ADVOCATES

As indicated by Friedman, early 20th century principal advocates include the founding members of the Chicago School – Henry Simons, Frank Knight and Lloyd Mints.⁴ They were strongly committed to a policy of laissez faire with one crucial exception, the creation and supply of money. Irving Fisher was the most prominent and passionate advocate in this era for 100% reserves. Notably, Fritz Machlup and Ludwig von Mises were also strong supporters. Other figures include Henry Schultz, G.V. Cox, Aaron Director, Paul Douglas, A.G. Hart, Lauchlin Currie, James Angell, Frank Graham, Leonard Watkins, Benjamin Higgins and Maurice Allais. (Philips 1995) Frederick Soddy, who was a Nobel laureate in the physical sciences and a contemporary of the

⁴ Jacob Viner, the fourth founding member of the Chicago School, was regarded as agreeing in principle with 100 per cent reserve banking, however, he viewed such a proposal as politically unachievable (see Philips 1995: 130).

Chicago School, wrote extensively on monetary economics and also advocated 100 percent reserve banking.⁵

The 100 per cent proposal had widespread acceptance during the 1930-40s amongst economists in the United States of America. Fisher claimed that almost one quarter of the members of the American Economics Association had offered support for the scheme. A statement entitled a “Program for Monetary Reform” was sent to President Roosevelt in 1940 presenting the 100% proposal, which was drafted by Irving Fisher, Paul Douglas, Frank Graham, Earl Hamilton, Wilford King, Charles Whittlesey and John Commons, and “in behalf of some 400 economists”. (Allen 1993: 714)

⁵ Phillips (1995) regards Soddy as the originator of the idea that was taken up by Knight and others at Chicago. He writes disparagingly “Hence Frank Knight, acknowledged as one of the greatest economic minds of the twentieth century, embraced the heretical proposal of a noneconomist to transform radically the banking system.” (Phillips 1995: 47) Phillips reason for believing this is based solely on the evidence of a positive review Knight wrote in 1927 on Soddy’s book. While Knight was in agreement with Soddy, it is a long bow to draw saying Soddy was the progenitor of the Chicago position on banking for the following two reasons:

1. As mentioned above Viner and Mints, colleagues of Knight’s and co-founding members of the Chicago School, identified authors who wrote in support of the 100% proposal in the 19th century. Soddy was certainly not the first to offer the idea.
2. Phillips himself references David Ricardo’s “Plan for the Establishment of a National Bank” and the Bank Charter Act of 1844 in relation to the Chicago Schools proposals. Allen writes that the drafting of the 1933 Chicago Memorandum “was done by Simons, who “got started toward the scheme” some ten years earlier, in “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.” “This Act would have been an almost perfect solution of the banking problem,” Simons added, “if bank issue could have been confined to notes.”” (Allen 1993: 706). Allen writes that the Memorandum was composed “evidently with little if any influence from Soddy” (Allen 1993: 705)

It seems much more reasonable to presume that the Chicago School was influenced by the ideas of earlier writers and that it did not originate with the “heretical proposal of a noneconomist”.

Knight's review of a book by Soddy contains a good summary of the position of the 100% reserve advocates in America even prior to the Great Depression:

“The practical thesis of this 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 for 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: 732)

The advent of the Great Depression firmed the opinion that economic crises were primarily caused by the fractional-reserve banking system, and the idea gained a substantial number of adherents. The prominence of the Chicago school and in particular the efforts of Fisher together with Whitehouse interest, debate and legislative initiatives brought the proposal to the attention of not only the academic community but also the community at large.

In the latter 20th century, the significant proponents of the 100% reserve proposal were Milton Friedman and a group within the Austrian school including Murray Rothbard and Harry Hazlett.⁶

Friedman stated unequivocally early in his career that to achieve economic stability “reform of the monetary and banking system [was necessary] to eliminate both the private creation or destruction of money and discretionary control of the quantity of money by central-bank authority”. (Friedman 1948: 247). Later, he gave the impression that he had backed away from this position, however, the reason he provided for appearing to abandon the 100% proposal was because in his opinion it was no longer a political possibility:

“When I wrote in 1948, we were already halfway toward one-hundred percent reserves because so large a fraction of the assets of the banks consisted of either government bonds or high-powered money. One-hundred percent reserves at that time did not look impossible of achievement. We have moved so far since then that I am very skeptical indeed that there is any political possibility of achieving one-hundred percent reserves. That does not mean that it is not desirable.”

(Philips 1995: 174)

⁶ “Narrow banking” proponents are not included because they argue merely for tighter controls upon banking rather than a radical revision and abolition of private debt-money creation.

Thus, according to Friedman's assessment of inopportunity, the 100% proposal was not actively promoted by the Monetarists. In consequence, their influence led to the practice only of tinkering with monetary targeting rather than radical monetary reform.

Another constraining factor – not mentioned by Friedman and yet perhaps the decisive factor - was the Monetarists' position that the money supply was *exogenously* determined and under the control of authorities. This was a core component of Monetarist theory. In their view banks did not exercise independently the power to augment and diminish the supply of money, but only passively responded to decisions taken by authorities to adjust the stock of cash or base money. Thus the Monetarist school's understanding of the nature of the money supply caused them to regard any necessary reform to be directed at government (mis)management not to the institutionalized practice of money creation by banks. (In Chapter 5 it is argued that under the conditions of modern banking the money supply is best understood as *endogenous*. If it is endogenous then the whole Monetarist theoretical framework is overturned.)

The group now most associated with monetary reform, the New-Monetary Economists advocate complete free-banking, however, none support the abolition of fractional-reserve banking *per se* (see Chapter 3).

The Austrian school is unable to exert much influence for the 100% reserve proposal because the school is absolutely divided over what would constitute the best banking system for a truly free or laissez-faire society. Their driving philosophy has produced two distinct groups. On one hand there are those who advocate 100% reserve because fractional-reserve banking constitutes fraud which is an implicit use of force. The other group accuses the 100% reserve advocates of explicitly condoning force by legally prohibiting banks to engage in fractional-reserve banking. Morris Markovitz writes:

“Periodically the debate flares up, and each side reasserts its logically self-consistent argument. Neither side, however, refutes the other’s argument. Finally, everyone throws up his hands in exasperation and the debate peters out once again. Each side tries to be cordial to the other, but, because such moral issues are involved, the debate has to be an obstacle to genuine goodwill between the two factions.”
(Markovitz 1988)

The impasse exists because the contradictory sides are caught up in a fallacy named intellectual package dealing - treating two different concepts as a single complete entity. To resolve the dilemma it is necessary to distinguish the two elements of banking, i.e. deposit-keeping and loan brokering, and apply the Austrian moral argument to both independently. (Markovitz 1988) In general, the distinction between demand deposits and time deposits is very important amongst 100% reserve advocates. The 100% reserve requirement

applies only to demand deposits. While time deposits alone constitute loanable funds.

Conclusion

The 100% reserve position has a long history. At present because of the pervading influence of a deregulatory political philosophy throughout the industrialized world, it is largely forgotten and abandoned amongst the ranks of academic or professional economists, except for an enclave within the Austrian school.

Nevertheless, if the argument of Walras and others is valid then this proposition is the foremost policy necessary to obviate macroeconomic disturbances sourced from the financial sector. Under the present conditions of deregulated financial markets throughout the industrialized world, according to their reasoning, any economic fragility engendered by the fractional-reserve system should be more pronounced. This fragility may be observed in the Third World debt crisis, the Asia financial crisis, the corporate crashes of the 1990's, the looming industrialized world debt crisis and country specific experiences - such as Australia – which all reveal a common pattern (see Chapter 3). The English experience of the 18th and 19th century with continual, consecutive macroeconomic fluctuations that prompted the great monetary/banking debates and implementation of bank controls, may now again be revisited. Although most would probably disregard it as an impossibility, the build up of monetary aggregates and debt throughout the

world may eventually cause an economic collapse similar to the Great Depression.

4. LEON WALRAS AND IRVING FISHER

The authors who championed 100% reserves all argued that the power possessed by banks to create and destroy money was the principal cause of macroeconomic disturbances. Many also put an additional legal argument that bank created money was false or fraudulent. The remainder of this chapter explains the development of the first by two leading contenders, Leon Walras and Irving Fisher. The latter argument is discussed in Chapter 4.

Joseph Schumpeter hailed Walras as “the greatest of all economists”. (Schumpeter 1954: 827) William Allen regarded Fisher as “the leading American economist of his generation – and perhaps of all generations through our own”. (Allen 1993: 703-717) It is significant that these principal figures should come to such an important and radical conclusion regarding banks and money creation. Curiously, Walras’s stance on banking is virtually unknown, yet his general equilibrium analysis provides the core for macroeconomics and in particular, affords the intellectual apparatus for the belief in efficient markets. Fisher was the leading figure in the attempt to implement the 100% proposal in the years following the Depression. It is

instructive to explain how these two influential authors came to such a decisive conclusion.

Leon Walras

Walras was the first significant modern economist to advocate the abolition of debt-money creation by banks. Walras adopted this controversial position because he attributed macro-instability primarily to the easy formation of a money *substitute* in the form of the bank note.⁷

Walras came to this decisive conclusion between the publications of his first and second editions of his book "*Elements d'Economie Politique Pure*".⁸ He related how his work on 'pure' theory, in which he devised the system of general-equilibrium, led him to the opinion in his 'applied' work that bank manipulations of the supply of bank-notes were the chief cause of initiating macroeconomic disequilibria, financial crises and collapses.

The Numeraire, Money and the Bank Note

A crucial device of his general-equilibrium theory was the '*numeraire*'. The *numeraire* was the commodity-standard by which the relative prices of all other goods and services were determined. Walras directly linked the

⁷ This proposal was as controversial in Walras' day as it is today. In regard to his statement that the disadvantages of bank notes outweigh their advantages he wrote "But this statement is nearly impossible to say at present." (Walras 1936: 374)

⁸ Walras explained his position in a paper entitled "The Mathematical Theory of Bank Notes", which he presented to the Society of Natural Sciences in November 1879. This paper was included in a single volume of his collected works on applied theory.

numeraire with the monetary instrument. Walras identified the precious metals - gold - as possessing the necessary characteristics to perform the appropriate functions of the *numeraire*-money. (Hilton 2000)

It became clear to Walras that redeemable bank notes possessed the ability to upset the operation of the *numeraire*-money, because they behaved like a money substitute for gold. Manipulations of the quantity of these notes in circulation would markedly affect the relative price of the *numeraire* itself which had a domino effect upon the rack of all other prices: "... the addition into circulation of a certain quantity of paper money with a quantity of metallic money depreciates the latter, raises prices and troubles the workings of exchange". (Walras 1936: 367-368) What was essential for the efficient operations of a *numeraire* was stability in its own relative price. Of course, it was not only changes in the supply of bank notes that would prove to be disruptive but also changes in the supply of precious metals themselves:

"We shall see, in our study of applied economics, how far-reaching are the consequences of this law (i.e. the Quantity Theory) which places the whole equilibrium of the market *at the mercy of mine operators, issuers of bank notes and drawers of cheques*". (Walras 1954: 366-367, emphasis added)

However, while changes in the supply of the metal-money would be detrimental, it was much easier to generate fluctuations in the supply of

paper-money, and this was frequently happening through the institutional practices of banks. That is why he established "the school for the prohibition of all issues of bank notes". (Walras 1936: 366)

Walras argued that bank notes were differentiated from other debt instruments, such as bills of order and bills of exchange, because the latter did not circulate in trade like the former. Bank notes alone were used like metal currency because they were immediately redeemable for that currency. Other commercial debt instruments did not possess this guarantee.⁹ It was not necessary to prohibit the formation and use of all debt instruments, only those that were representative of the metal currency which was the commodity-money and therefore used as money substitutes.

Note in this regard that although Walras referred to "drawers of cheques" (see above) as possessing the ability to also affect disequilibrium, he did not elaborate how cheques could be instrumental in achieving this result. He presented no explanation as to how banks were able to create 'deposits' and permit borrowers to utilise these 'funds' via cheque facilities. The process of deposit creation and cheque usage is identical to the production and issue of

⁹ Walras wrote "As for paper of commerce, bills of order and bills of exchange, it is not in their nature to circulate Bank paper forms the acceptances of bankers, which circulates and which regulates the exchanges from region to region and country to country. Without doubt it is paper money which takes the place of a large amount of metallic money. But amongst those acceptances of bankers, the ones which have the shortest terms, are uniquely the instruments of circulation; the others which have longer terms are instruments of credit, they don't stay indefinitely in circulation: they multiply when business is active and disappear when business is slow. This is not so with bank notes. When business is slow or active, the necessary quantity of circulating capital will always be provided in the first place by bank issues, because of the relative ease of discount." (Walras 1936: 369)

bank notes. Bank 'deposits' are a money substitute equal in every respect to bank notes. It is likely that Walras did not understand 'deposit' creation, but this was not unusual for his time - the members of the Currency School in England were likewise unaware and their policy prescriptions failed because banks were able to circumvent the intention of the Act of 1844 that placed restrictions upon their note issue, via deposit creation and requiring their customers to use cheques. Walras's conclusion should be augmented, therefore, to encompass all methods of debt-money creation practiced by banks, and this is how he should be interpreted.

The Principal Cause of Crises and Remedy

Walras only provided a sketchy outline of the process by which the issue of bank notes created the circumstances of a financial collapse.¹⁰ It basically entailed first a period of inflation as note issues increased and then a panic ensued followed by a period of deflation and down-turn in economic activity. Both the ascent and then descent of prices were costly in Walras's schema because they both produced the need to realign prices in order to preserve the respective price-relativities. Walras's general-equilibrium analysis

¹⁰ "The increase in prices arising from the fall in the value of the commodity money definitely constitutes trouble for exchange relations. The trouble is most favourable for the entrepreneurs who see an increase in the prices for their products before an increase in the prices of resources. But this also is most unfavourable for landowners who receive farm-rents that have been fixed in the long term, to the capitalists who lose on the interest which they are paid and on the principal when they receive it back, to the workers who are obliged to increase their salaries, always by recourse to burdensome strikes, and to the public servants who have no way of increasing their salaries; but we always have to be at the mercy of a panic when, suddenly, the rise in the price of money causes a drop in the prices of all merchandise, leading to the ruin of producers and after that of consumers" (Walras 1936: 368)

revealed how the efficient operation of markets, through the price-mechanism which depended upon the stability of the numeraire, could be unsettled with devastating consequences. Periods of recession/depression were due to influences which had played upon the *numeraire*, and the bank note was singled out by Walras as the chief culprit. The remedy was simple: to control the banking industry and forbid the supply of a debt-money substitute.

Of course, this recommendation was contrary to the 'laissez-faire' philosophy which lay at the heart of Walras general-equilibrium framework. Walras reasoned, however, that "... the industry of credit and discount with the issue of bank notes *is not an industry like any other, it is an industry that must be regulated and not given freedom*" (Walras 1936: 368, emphasis added). And he selectively quoted Adam Smith's well-known remark from the "Wealth of Nations" that a financial system that uses "paper money" rests upon "Daedalian wings", and asserted that "... after the rectifications and additions that we have given to the theory of A. Smith, its accuracy is that much more remarkable". (Walras 1936: 370)

Walras was under no illusion that his controversial policy would be welcomed by others. Smith had argued for the use of paper money because it provided capital savings, and this had become the accepted orthodoxy which Walras sought to challenge. In fact, it was easy to extend Smith's line of logic and argue for the complete abandonment of gold altogether and operate a pure

debt-money system, which is just what Wicksell proposed, and which is the position of the present-day school of New Monetary Economics.

Walras's recommendation was not taken up. (He remained a Professor at the University of Lausanne, Switzerland, his whole career. He did not influence the debate in England or the Continent.) It would not be for over half a century and on the other side of the Atlantic, before the proposal would receive serious consideration in the face of the economic catastrophe of the Great Depression. Mints observes "Only in the event either of a severe depression or of danger of serious inflation is it likely that the elimination of fractional reserve banking could be had without a disturbing amount of opposition." (Mints 1945: 270)

Irving Fisher

Like Walras, Fisher also after some initial enquiry and analysis came to the conclusion that fractional-reserve banking should be abolished. While Walras discovered it independently, Fisher was influenced strongly by the members of the Chicago School. He readily adopted their proposal for he eventually accepted it as the best means to defeat the business cycle. He believed that macroeconomic experience of cyclical booms and depressions was principally driven by financial causes. In particular, depressions were the direct result of overindebtedness and deflation. These factors he eventually

saw could be readily and decisively controlled by the abolition of private creation of debt-money through the imposition of 100% reserves. The development of his ideas can be traced in his two books, “Booms and Depressions” and “100% Money”.

“Booms and Depressions”

In his book “Booms and Depressions”, Irving Fisher set out to describe his debt-deflation theory of economic depressions.¹¹ He nominated nine main contributing factors to a depression that were linked in a chain of cause and effect: (1) debt liquidation and distress selling → (2) contraction of deposit-money and lower velocity of circulation → (3) falling prices → (4) the net worth of businesses falls further → (5) a drop in company profits → (6) a reduction in output, trade and employment → (7) pessimism and loss of confidence → (8) hoarding and further decrease in velocity → (9) a fall in the nominal rate of interest but a rise in the real rate. He singled out two of these as the most significant: over-indebtedness, which he called “The Debt Disease”; and, deflation, which he called the “Dollar Disease”. (Fisher 1932: 13, 27; 1933: 342) Fisher argued that over-indebtedness was the primary agent, because it represented the necessary condition that merely awaited a trigger to plunge an economy into depression. However, in the event of a crash being initiated, the problem of debt was superseded in importance by

¹¹ This theory was also published in a condensed version in *Econometrica*, 1, 1933, pp337-357

the problem of deflation, and he focused upon the latter in deriving remedies for macroeconomic instability. (Fisher 1932: 121)

Over-indebtedness

Fisher understood well the mechanism of the monetisation of debt. He explained how bank money essentially constituted debt-money and went so far as to say that "... what is called the 'money market' is really the debt market." (Fisher 1932: 8) Debt was an essential element of the modern economy, however, it carried with it a barb. Debt could grow to such an extent that it constituted a threat to macro-stability.

Unfortunately, he did not devise some method by which it was possible to gauge when a community had reached the threshold of over-indebtedness. Using bank loan practice as an example, he explained that different sorts of lending criteria were used for different borrowers, and that these standards were inexact: "The line of balance (whether judged to be under- or over-gear) is more or less a twilight zone". (Fisher 1932: 10) Fisher did refer to "some interesting remarks made by Mr. Warren F. Hickernell" who had determined that in order to avoid large-scale insolvencies, it was necessary to keep total bank liabilities within one half of a nation's annual income and that the actual bank reserve ratio should not fall below 9 per cent.¹² But in the end he chose to remain vague on what constituted over-indebtedness: "Over-

¹² Fisher also went on to explain how the erection of trade restrictions by a creditor nation would force a debtor nation into an untenable situation.

indebtedness means simply that debts are out-of-line, too big relatively to other economic factors". (Fisher 1932: 11) Writing *ipso facto* to the Great Depression, Fisher merely drew attention to the tremendous growth of debt levels preceding the 1930's without pinpointing some threshold level of over-indebtedness. (Fisher at this stage, did not consider the possibility that it was the money-debt system itself which was responsible for engendering over-indebtedness.)

Furthermore, Fisher foresaw an immediate and logical step in his analysis, that not only could debt be the source of a down-turn, but also that a continuing economic cycle could be initiated by debt processes that were fundamental to the financial and economic system. Beginning at the aftermath of an economic collapse caused by over-indebtedness, borrowers and lenders would naturally be cautious but gradually their caution would return to optimism and debt levels would commensurately begin to rise once again. This debt expansion would continue reaching once again heights of over-indebtedness and precipitating another economic down-turn *ad infinitum*. Nevertheless, he believed this cycle to behave like a 'pendulum' with ever decreasing swings producing a convergent long-run equilibrium state, unless some external shock upset the diminishing oscillations. (Fisher 1932: 12)

As to the remedies to inhibit over-indebtedness, he suggested a number of initiatives aimed at lowering gearing ratios (see Fisher 1932: 117), however,

he saw these as secondary in importance to the currency reforms needed to fight the “Dollar Disease”.

The ‘Starters’

Fisher identified three factors responsible for producing the conditions of over-indebtedness. Firstly, large-scale “unproductive debts” incurred because of misfortune - including “earthquake, conflagration, flood, drought, pestilence, or war” - which were unable to be repaid in the short-run because of the loss of income, itself attributable to the hardship (Fisher 1932: 44). This reason he thought of very minor importance in contrast to the second causal factor which he argued was responsible for most financial crises, the formation of large-scale “productive debts” arising from “new inventions, new discoveries, or new business methods”.¹³ (Fisher 1932: 45) Fisher argued that the growth of debt initiated by these new investment opportunities subsequently took on a different character as the boom progressed. Speculators were soon attracted having the objective not of real investment but of merely buying and selling to achieve a (non-productive) profit. Then

¹³ Fisher cited the five major depressions of the nineteenth century, identifying in each case the rise of productive debts associated with certain commercial ventures: 1819, a land boom in east; 1837, a land boom in the west and southwest abetted by speculation in cotton, canal building, steamboats and turnpikes; 1857, the discovery of the Californian gold-fields and the beginning of the growth of the rail industry and the opening of the Northwest; 1873, the tremendous expansion of the transcontinental railways system and speculation in farmlands in the west; and 1893, speculation in the production of farm equipment, however, he attributed the major cause to difficulties of the financial system with the influx of (Mexican) silver.

would appear “less scrupulous promoters; and finally downright crooks”.¹⁴ (Fisher 1932: 48) In this regard Fisher prefigured Minsky (1986).

Thirdly, Fisher argued that price inflation due to *commodity- or paper-*currency expansion created a period of rising profitability and encouraged business expansion and therefore rising debt levels.¹⁵ However, like Walras, he also did not anticipate the same result from deposit creation, at this stage.

Deflation

Fisher regarded deflation as the major influence which drove the economy into the depths of recession/depression, once a down-turn was initiated, and also the reason for a sustained state of depressed economic activity. Deflation produced the effect of enlarging the real level of existing debts thereby exacerbating the debt problem i.e. over-indebtedness persisted despite large-scale repayments and foreclosures resulting from the collapse. The reduction of the price level was itself the cause of another ‘Main Factor’, which was the shrinkage of the volume of money. People and firms tried to sell off assets (and commodities) in order to repay their debts once prices had begun to fall at the first stage of a downturn, creating a state of ‘stampede liquidation’. Prices were directly affected by this distress selling, and indirectly

¹⁴ Fisher added: “Probably no great crash has ever happened without shady transactions. Indeed, the disclosure of these is often the last straw which breaks the camel’s back and precipitates the calamitous liquidation. Fraud enters as one link or mesh in the net-work, being both effect and cause - an effect of genuine opportunities to invest, and a cause of over-indebtedness” (Fisher 1932: 48).

¹⁵ Fisher noted the potential for a combination of starters to be operative at any one time. (Fisher 1932: 49-50)

by the reduction in bank-deposit money as debts were repaid. Just as bank money was created through the issue of a loan, conversely, Fisher explained, money was destroyed when a loan was repaid:

“New ‘money’ is thereby created, not by the mint nor the Bureau of Engraving, but merely by the pen and ink of the banker and his customer. But when the customer pays the note, he undoes the whole transaction; that is, he wipes out an equal amount of circulating credit.”

(Fisher 1932: 15)

Thus the repayment of a debt to the bank was distinguished from the repayment of a trade debt, in that it entailed the cancellation of circulating money. This wholesale destruction of bank-money under the conditions of distress, forced prices to fall.

Fisher reasoned that this collapse of prices could be easily counteracted, thereby forestalling the downward spiral and correcting the growth of real debts. What was necessary was a device which would simply reflate prices under such conditions and thereby provide an immediate and effective remedy. Moreover, by stabilising the dollar, it was possible to sustain macroeconomic prosperity. Being an advocate for the Quantity Theory of Money, Fisher recommended a number of means to influence the money supply and therefore the price level:

- use of interest rate controls

- open market operations
- manipulation of reserve requirements
- loan controls
- unification of the banking system
- the use of government bonds as reserves
- control of gold stocks
- ‘compensated dollar’ plan whereby gold certificates would replace coins, and the price of their redemption value would be varied to counter general price movements
- a deposit insurance scheme
- a subsidy for borrowers in depression
- ‘stamped dollar’ plan whereby circulating notes would incur a regular charge thereby stimulating their quick usage and combat the problems of hoarding (Fisher 1932: 126-142)

Although his recommendations were wide and varied, they were none the less peripheral to the engine which drove monetised-debt levels and produced the conditions for instability, namely the fractional-reserve banking system. Eventually, Fisher addressed this oversight and he corrected it in his book “100% money”.

“100% Money”

In “100% Money”, Fisher amended his thesis to identify the principal cause of crises. The debt-deflation features attended with crises he had discussed in “Booms and Depressions” remained the same. The difference now was that he attributed the inherent instability of the macroeconomy, i.e. the primary reason debts were allowed to grow to unsustainable levels with grievous results, directly to banks.

The Power to Create and Destroy Money

Fisher pointed the finger at the power possessed by banks to create and destroy money. This *modus operandi* of banking produced the conditions for boom and bust episodes. His recommendation to overcome this systemic weakness was simple, remove the power to create and destroy money from banks:

“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*. A purely incidental result would be to make banking safer and more profitable; but by far the most important result would be the prevention of great booms and depressions by ending the chronic inflations and deflations which have ever been the great economic curse of mankind and *which have sprung largely from banking* ... I have come to believe that that plan ... is the best proposal

ever offered for speedily and permanently solving the problem of depressions; for it would remove the *chief cause* of both booms and depressions, namely, the instability of demand deposits, tied, as they are now, to bank loans.” (Fisher 1935: xvii-xviii emphases added)

Whereas Fisher had avoided laying blame at the feet of institutionalised money creation and destruction in his book “Booms and Depressions”, he now unequivocally and determinedly argued that banking practice was the “chief cause” of macroeconomic instability, and Fisher used phrases now which were very disparaging of banking. He described banking practice as a “faulty system” and banks as “irresponsible private mints”. (Fisher 1935: 7) The consequences of the system he described as “dangerous - dangerous to depositors, dangerous to the banks, and above all dangerous the millions of ‘innocent bystanders’ and the general public”. (Fisher 1935: 8) He now identified deposit creation as being synonymous with note issue in the days of America’s ‘wild cat’ banking: “It is essentially the same unsound practice”. (Fisher 1935: 8) And he quoted the following highly critical line in a memorandum written by Simons et al at the University of Chicago:

“If some malevolent genius had sought to aggravate the affliction of business-and-employment cycles, he could hardly have done better than to establish a system of private deposit banks in the present form”. (Fisher 1935: 47)

Fisher's objective in *100% Money* was to paint a very derogatory picture of fractional-reserve banking, because of its implications for macroeconomic stability as he now understood them. Institutionalised money creation/destruction was the root from which sprang the fruit of macroeconomic disturbances and the tragic costs to society, which were then very vivid as America was in the grip of the Great Depression.

The Remedy

Fisher's solution was quite simple in its design. In order to remove the money creating/destroying capabilities of banks, all that was necessary was to impose the requirement that banks hold 100% reserve against their current deposits. The essential reason banks were endowed with the power to manufacture money Fisher traced to the development of fractional-reserve by the English goldsmiths whom he observed began on the principle of 100% reserve:

“... before they began lending out improperly what was entrusted to them for safekeeping. It was this abuse of trust which, after being accepted as standard practice, evolved into modern deposit banking”.

(Fisher 1935: 19)

However, he was not recommending a return to a gold standard. Although that would have been an improvement on the present system, it still left the monetary standard prone to some variability as it was staked to the relative

price of a single commodity. Fisher favoured a 100% reserve of government bonds, which could be manipulated by a monetary authority - a "Currency Commission" - in order to preserve stability in the general level of prices. The "dollar" therefore became an index unit of account, computed using the weighted average of the prices of a number of commodities, that was distinct from the medium of exchange which was a government bond issue.

The adoption of his proposal, he argued, would completely negate the potential for debt escalation: "Banks could no longer overlend by manufacturing money out of thin air so as to cause inflation and a boom". (Fisher 1935: 17) The past experiences of "Great inflations and deflations would be eliminated; because banks would be deprived of their present power virtually to mint check-book money and to destroy it". (Fisher 1935: 13) No longer would the money supply be linked directly to the function of borrowing and lending. The control of money would rest solely in the hands of the government, whereas banks would be confined to provide warehouse services for demand deposits, and only lend out what was made available through savings in the form of time deposits. Thus demand deposits would always be supported by 100% of currency.

Other benefits he argued that would flow from his proposal included

- runs on banks would be virtually eliminated and fewer banks would fail

- government debt would be reduced through the operations of the Currency Commission
- the monetary system would be simplified (Fisher 1935: 11-14)

Conclusion

Both Walras and Fisher, after an initial period of analysis and development of theory, came to the conclusion that private banks should be prohibited from creating money because this facility was the primary source of macroeconomic disturbances. It is important to note that they both were supporters of free market ideology. They were not advocates of socialist dogma. It was the money market that they singled out for exceptional and special treatment.

In summary and collating their ideas: boom periods characterized by inflation were driven by an augmentation of the money supply as banks extended new loans. This additional debt-money was created *ex nihilo* and not sourced from real savings. The money supply and debts grew in boom periods at unsustainable levels, creating the conditions ripe for a collapse. Recessions and depressions characterized by falling prices were driven by the destruction of debt-money as banks called in loans. Price movements were directly linked, therefore, to the money stock which was under the control of privately-owned banks. The institutional nature of debt-money creation/destruction, was the source of errant changes to the money supply, which in turn

produced the repetitive cyclical experience of boom and bust. In order to remove the propensity for macroeconomic fluctuations, the power to manipulate the money supply was to be wrested from the hands of the private banks. The financial industry, unlike any other industry, was to be strictly controlled. If this policy were implemented, macroeconomic stability would ensue.

This is the essential argument of all who have advocated 100% reserve banking. Private banks endowed with the power to create and destroy money produce the conditions which give rise to macroeconomic instability. It is the chief cause of boom/bust episodes and to defeat those experiences radical banking reform is necessary; nothing else is sufficient. Regulations and controls designed to limit the money-creating power of fractional reserve banking have invariably proved ineffective. The English Parliament's Act of 1844 is the classic example of an attempt by the government legislator to restrict the *ex nihilo* creation of money by private banks to stave off financial crises which was circumvented by financial innovation, and its goal quickly vanquished. The Act only impacted upon note creation, but left deposit creation untouched. The inability of authorities to effectively contain monetary aggregates is a feature of a debt-money system, such as fractional-reserve banking. This type of system allows for the evolution of financial instruments (i.e. the proliferation of debt linked near-monies) and the avoidance of controls. (Phillips 1995: 185 and 209)

A 100 per cent reserve system, utilizing for instance a gold standard, would overcome the near monies problem. Under such a system, banks would be required to hold 100% gold reserves for demand deposits, while time deposits alone would constitute loanable funds. Business or trade credit would continue to be permitted. However, the debt instruments tied to this form of credit would be prohibited from being traded indefinitely because they would not be enshrined as legal tender and would be legally insufficient for the repayment of debts. Therefore, such instruments could not constitute a general means of payment i.e. money substitute.

CHAPTER 3

THE EVIDENCE OF DEBT ESCALATION AND CRISES IN THE POST DEREGULATION ERA

1. INTRODUCTION

If the basic proposition of Walras and others - that an unregulated banking sector endowed with the capacity to create money *ex nihilo* will automatically give rise to financial and economic crises, predicated upon unwarranted debt escalations – then it would be reasonable to surmise that there should be growing evidence of such crises since the deregulation of financial markets in the 1970s. There is substantial economic data, across a broad range of countries, which lends support to their view. Bell writes:

“Since the 1970s, in successive cycles, many economies – Japan, East Asia, Australia, Britain, the Nordic countries of Europe, Mexico, parts of Latin America, and most recently the United States – have experienced acute bouts of systemic financial instability. Steeply rising debt levels, ‘irrational exuberance’, in property and equity markets and soaring asset prices have been followed by inevitable corrections and crashes, often with severe effects on the wider economy....

“The financial liberalization of the last three decades marks a major transformation from a heavily regulated financial system to an increasingly market-led system, albeit one which still emphasizes various forms of regulatory oversight. The net effect of the changes has been a surge in credit in an environment where monetary stability and investor exuberance have produced major price increases in asset markets.” (Bell 2005: 392)

The evidence examined covers several country specific examples in the developed world - including Japan, Finland, Norway, Sweden and Australia - and crises which have affected groups of nations in the developing world - namely the South-East Asian financial collapse and the Third World debt crisis.

2. DEREGULATION, DEBT AND THE DEVELOPED WORLD

Introduction

Countries which deregulated their financial markets display a similar pattern in the rapid escalation of debt and crises following that deregulation. In its 1993 Annual Report, The Bank for International Settlements (BIS) spelt out the apparent relationship with the liberalization of financial markets and

resultant boom-bust cycle, which had become evident in numerous industrialized nations over two distinct cycles. It states

“Asset prices have played a prominent role in the present business cycle, both in terms of the amplitude of their fluctuations and because of their impact on financial institutions and economic activity. Such medium-term swings are of course not new; the last similar episode took place in the early 1970s. What has drawn attention to the recent asset price movements is not only their absolute size and geographical compass; it is also the fact that the prolonged upswing, in contrast to the previous one, occurred against a background of positive inflation-adjusted interest rates. *An examination of the two episodes suggests that the distinguishing characteristic of the recent experience has been the ample availability of credit in the wake of market-driven and policy-determined structural changes in the financial industry.*” (BIS 1993: 12, emphasis added)

The report explained that the 1970s boom-bust cycle was easily accounted for, in an environment characterized by accelerating inflation and real interest rates which were low or negative. In the 1980s however, the opposite was true; inflation was decelerating and real interest rates were high. The late 1980's early 90's boom-bust cycle did not accord with then conventional wisdom. Hence, there had to be some other explanation. The BIS argued that the only reason that could be given for the boom/bust cycle across so many

countries all in the same period of time was “the behaviour of credit”, resulting from the relaxation of credit controls in the financial sectors across the industrialized world. (BIS 1993: 15)

It noted that

“..deregulation was especially broad in Sweden, Norway and Finland, which moved from a system where credit was rationed to one of open competition, all in the space of a few years in the mid-1980s. A similar process took place in Australia in the early 1980s. Deregulation was also extensive in the United Kingdom where (direct and indirect) restrictions on credit were abolished and greater competition between banks and building societies was encouraged in the early to mid-1980s, thereby reinforcing an underlying market trend...In Japan deregulation has been more gradual, but as from the mid-1980s restrictions on corporations’ access to international markets was relaxed and deposit rates partly freed, while less regulated non-bank credit institutions thrived. By contrast, in Germany, where the financial system underwent little structural change, there was no major cycle in asset prices.” (BIS 1993: 17)

The BIS report demonstrated the correlation between the surge in credit together with a measure they devised for ‘real aggregate asset prices’, in selected countries which embraced financial deregulation and experienced a

concomitant asset price boom/bust cycle; including Japan, Finland, Sweden, Norway, the United Kingdom, Denmark, the United States and Australia.

In a more recent report (2005), the BIS in reviewing the trends in the global economy over the last two decades, persisted with the view they expressed in 1993 and acknowledged

“...the single most remarkable feature in the financial area has been the recurrence of credit, asset price and investment booms and busts. A first cycle began in the industrial countries in the 1970's, affecting both equities and real estate. A second cycle started in the mid-1980s, ending in a property bust a few years later. While the Nordic countries, Germany and Japan were most affected, each made vulnerable by other domestic problems, many other countries were also caught up by the exuberance. Moreover, it seems increasingly evident that we are today well into the boom phase of a third such cycle, dating from the economic upturn of the mid-1990s. Equity prices were affected first but, after their sharp decline in early 2001, the upward momentum of demand was transferred to the housing market. Indeed, it is not an exaggeration to say that, over the last year or so, the house price phenomenon has achieved a global sweep. Most industrial countries are showing symptoms of overheating in the housing market.” (BIS 2005: 6)

The BIS went on to explain the problems that flow from these credit and boom/bust asset price cycles, ranging from crisis in the banking system, as occurred in the Nordic countries in the late 1980s, Mexico in 1994 and a number of Asian countries in 1997-98, to the restriction of lending impairing economic activity, and the problems of “overstretched corporate and household balance sheets and the overhang of unprofitable capital investment.” (BIS 2005: 6)

Furthermore it put the proposition that “liberalized financial systems, while more efficient than repressed ones, might be *inherently prone to instability* if competitive pressures occasionally lead to excessive risk-taking. A second point is that they also seem to be *inherently procyclical* ... (and) these normal tendencies to boom-bust behaviour might be aggravated by easy monetary conditions.” (BIS 2005: 9, emphasis added)

This accords with the central proposition Walras and others, that an unregulated financial system that permits the creation of money *ex nihilo* will give rise to macroeconomic disturbances. The experience of countries throughout the industrialized world seems to support this view.

The core characteristics of asset bubbles, according to Allen and Gale, are defined by three distinct phases. (Allen and Gale 2000)

In phase 1, financial market conditions are changed enabling the money supply to rapidly expand, either through financial liberalization, central bank intervention, or other autonomous event. As the money supply expands, property and equity prices rise. This asset-price inflation persists for some time, even over the course of several years, as the bubble inflates.

In phase 2, the bubble bursts and asset-prices are revised downwards, normally very swiftly over a period of days or months, however, the price collapse can continue for years.

Phase 3 sees the sell-off of assets by highly-leveraged asset holders, who bought at the top end of the market. Loan defaults rise that may lead to a banking crisis and/or a foreign exchange crisis. This financial distress impacts detrimentally upon the real sector, the effects of which can be sustained for a number of years.

As is suggested by their schema, the catalyst for the experience of recent bubbles was the liberalization of financial markets. This is the pattern evident in the countries examined below.

Japan

In the late 19th century and early 20th century, the Japanese banking industry was largely unregulated and no minimum reserve requirements were laid

down by legislation. Successive banking crises in the 1920's prompted the Government to impose controls and these were strengthened at the time of the 2nd World War. During the U.S. occupation in the post-war era some reform was enacted, however, these changes only served to fortify the system of regulations and controls imposed upon the banking industry. This framework remained largely intact until the mid-1970s. At that time, the Government began to enact measures that resulted in a reduction of its control over the financial industry.¹⁶ (Hoshi and Kashyap, 1999: 133-134)

Initially, international capital flow constraints were relaxed, the bond market was liberalized and interest rates were deregulated. Large firms were now permitted to secure funds from overseas sources and this forced domestic banks to aggressively find new recipients of loan funds. Consequently, consumer loans, property loans and small business lending escalated. The client base proportions for Japanese banks shifted away from manufacturing to non-manufacturing sectors including real estate, construction, distribution and finance. (Kawai 2005: 313-314)

The process of deregulation continued in the 1980s. Restrictions on non-bank lending were lifted and small financial institutions were permitted to access new markets, importantly the real estate industry. (Kawai 2005: 311) The competition amongst lenders intensified, against the backdrop of successive

¹⁶ Cargill remarks that in the case of Japan, the process of financial liberalization was not directed by a market philosophy which downgraded the role of government, but rather was a coalescence to "well-organized internal and external interest groups that demanded liberalization for reasons of self interest". (Cargill 2004: 13)

decades of astonishing growth and low inflation.¹⁷ The banks provided a massive increase in the money supply, as asset prices soared. Total loans and assets from Japanese banks grew from 201 trillion yen in 1983 to 421 trillion in 1991. (Kawai 2005: Table 1) Both land prices and the stock market grew in the order of 20-50% per year at the height of the boom between 1987 and 1990. (Shiratsuka 2003: Figure 1) Low prices and low interest rates together with expectations of continued economic growth fueled the euphoria. Despite concerns expressed by the Bank of Japan at an early stage in the bubble that the substantial augmentation of the money supply would lead to inflation, non-asset prices did move upwards. Inflation remained under 2% and this led to the belief that relationship between the money supply and prices had broken down. (Shiratsuka 2003: 14)

The Bank of Japan finally acted raising interest rates sharply throughout 1989-91 and introducing bank loan limits for real estate. As well, a new land tax was announced. These initiatives triggered the collapse of the bubble. (Kawai 2003: 313)

The downwards revision of Japan's asset-prices was dramatic. The Nikkei stock index fell some 37% from 38,915 at the end of 1989 to 14,309 in August 1992. The consequential reduction in both wealth – on OECD figures the

¹⁷ Japan's annual growth rate was 8.8% from 1950-73 and despite slowing to 3.8% from 1973-1990 this rate was higher than other OECD countries. (Arne Bigsten 2004: 3)

The rate of inflation in Japan remained under 2% during the course of the bubble's ascendancy. (Shiratsuka 2003: 30, Figure 14)

equivalent of two years of GDP - and bank lending caused the Japanese economy to enter a period of stagnation. The growth rate in Japan slowed to an average of 1.3% for the period 1990-2000 and in some years was negative. (This contrasts with a growth rate of 8.8% between 1950 and 1973, and 3.8% between 1973 and 1990. (Bigsten2005: 598))¹⁸ Over the next decade, the stock market fell a further 50%, the Nikkei hitting 7000 in early 2003.¹⁹ (Bigsten 2005: 602-603) Land prices also plummeted losing over 60% of their value from 1990-1995, and falling continually dropping a further 50% up to 2003. (Shiratsuka 2003: 20)

During the boom's ascendancy there was pressure for the manifestly undercapitalized Japanese banks to comply with the 1988 Basel Accord capital requirements. In an attempt to meet the requirements the banks lobbied successfully for special treatment to have their current-value equity in non-financial firms – of which they held 5% due to a special feature of the Japanese industrial organization - to be counted in their tier II capital requirements.²⁰ (Cargill 2004: 20) This greatly enhanced the banks' capital base which had now become endogenous to equity values, and as the share market continued its remarkable climb it permitted banks to sustain their rapid expansion of loans.

¹⁸ Despite the growth rate falling in the second period it was still at the top end of OECD countries.

¹⁹ The decline in the Japanese economy throughout the 1990s was influenced by other contributing factors including the appreciation of the yen, the effects of the S-E Asian crisis and the bursting of the IT bubble. (Bigsten 2004: 5). Cargill also attributes some of the difficulty the Japanese economy experienced as due to inappropriate monetary policy (Cargill 2004: 27).

²⁰ They were permitted to count 45 per cent of these equity holdings.

However, this dispensation was eventually to impact detrimentally upon them; the collapse of equity prices and inability of banks to raise new capital, added to the ensuing difficulties faced by the banks. As non-performing loans escalated in the subsequent down-turn, the already thin capital base was eroded with catastrophic consequences for many financial institutions.

Indeed, any reserve ratio nominated under fractional-reserve banking and regarded as prudentially adequate cannot not be guaranteed under all conditions to prove adequate. What is regarded to be sufficient for current economic conditions can prove manifestly insufficient as conditions change. Only a one hundred per cent reserve for demand deposits will ensure that the banking sector remains virulent. And the imposition of prudential controls has never proved sufficient to contain monetary growth, because of financial innovation. The business of banking, under the current fractional-reserve regime, is to create money *ex nihilo* and lend it out for profit. The Japanese banks in the run-up of the asset-price boom were acting in accordance with this mandate and the favourable conditions that confronted them. Kawai (2005) described the performance of the Japanese banks in the second half of the 1980s, during the period of the inflation of the bubble as “stellar”. He remarked “During the second half of the 1980s, bank loans expanded against the expectation of robust growth, a stable price level, and an expansionary monetary policy. High loan growth was accompanied by high growth of deposits.” (Kawai 2005: 311) It is contended, therefore, that the argument of Walras and others, that the fractional-reserve system is inherently fragile and

prone to produce economic and financial cycles, is aptly demonstrated in the Japanese experience.

The result of the asset-price free-fall was eventually to create a systemic financial crisis in Japan. In the mid-1990s, numerous small financial institutions - including credit unions, building societies and regional banks – became insolvent and were liquidated. Subsequently, a major city bank stopped operations, two large security companies became bankrupt and two principal banks – Nippon Credit Bank and the Long-Term Credit Bank of Japan – had to be rescued by the Government. (Kawai 2005: 312) In 2001, more than forty financial institutions were in receivership under the Financial Reconstruction Law. (Bigsten 2005: 605) The Japanese economy has most recently experienced a prolonged period of deflation, unheralded since the 1930s, and regarded to be floundering in a Keynesian liquidity trap.²¹ (Bigsten 2004: 602, 606) The financial crisis arising out of the asset-bubble boom/collapse is arguably the chief reason why the Japanese economy has experienced sluggish growth and endemic pessimism.

The problems the Japanese economy experienced during the 1990s is referred to as the “lost decade” and there are signs that the Japanese economy will continue to struggle. Cargill (2004) notes that the nonperforming loan problem continues to plague Japanese financial institutions:

²¹ Japan's GDP deflator declined in every year from 1994 to 2002, with the exception of 1997 which saw a slight improvement. (Cargill 2004: 1)

“Non-performing loans are now higher than at any time since 1990. The percentage of bank loans classified as nonperforming ranges from 7 to 10 per cent depending on how nonperforming loans are defined. Nonperforming loans for all depository institutions combined represent about 30 per cent of GDP. There is evidence that nonperforming problem is far more serious than previously estimated.” (Cargill 2004: 2)

The fractional-reserve system becomes more and more unstable in the face of mounting nonperforming loans, because bad loans must be written off against capital.

The extreme economic difficulties that Japan has been beleaguered with since the collapse of the asset bubble stands in stark contrast to its economic miracle and overall outstanding performance of the previous four decades, which saw Japan become the second largest economy in the world. Of course, a return to the remarkable growth rates of the earlier period is not likely because of the diminishing returns of capital and labour. Nevertheless, while the debt overhang and the large size of nonperforming loans persist, the banking system will remain stifled and the Japanese economy will languish, bound to relatively low growth rates. Friedman writes:

“...the once vaunted Japanese financial system, which “revisionist” thinkers hailed for creating so many competitive advantages for

Japanese industry, and which even mainstream western economists closely studied as a consistent provider of lower cost capital, is now widely perceived as a cripple standing in the way of any serious prospect for Japan's economic recovery." (B. Friedman 1998: 376)

The Scandinavian Countries

Finland

"Like Chile in the 1980s and Mexico in the 1990s, the UK and Sweden at about the same time, and the Asian countries in 1997-8, Finland witnessed a huge expansion of bank lending following financial market deregulation, major inflows of foreign capital during the boom, speculative currency attacks and a major banking crisis as part of the depression." (Honkapohja and Koskela 1999: 401)

Financial deregulation in Finland began in the early 1980s and accelerated in the latter half of the decade. The policies which were adopted included the abolition of interest rate ceilings, relaxation of controls upon domestic lending and foreign-sourced loans and the exemption of certificates of deposits from reserve requirements. Following the deregulation, money and credit volumes expanded rapidly. In the words of Honkapohja and Koskela there was "an explosion of bank credit and large capital inflows". Money stock grew on

average between 1985 and 1990 at 12.4% p.a. and total lending 17.7% p.a. (Honkapohja and Koskela 1999: 403)

The expansion of funds fuelled a boom in asset markets. Property prices rose appreciably increasing 150% throughout the decade of the 1980s, and share prices soared rising by around 400%. (Honkapohja and Koskela 1999: 408)

The impact of deregulation not only affected asset markets, but also the goods and services sector.²² From 1986-87 to 1989-90, inflation rose from 2-3% to around 7% and unemployment fell from 4% to 2.5%.

The collapse of the bubble was dramatic. The common trigger again was the raising of interest rates which occurred in early 1989, although the rationale for the restrictive monetary policy was to defend the Finnish currency rather than to dampen the booming economy. GDP growth abruptly turned around, from +5.4% in 1989 to -6.5% in 1991. From 1990 to 1993, real GDP fell in total around 14%, and unemployment rose from 3% to 20%.²³ From their peak in 1989 until 1993, prices of both property and shares fell some 60%. The economic crisis proved to be more severe in its impact than the depression of the 1930s. In the face of the abrupt contraction after the rapid expansion of loans, it was inevitable that the banking sector itself would fall into crisis and it proved particularly severe. The government was forced to

²² Another significant factor contributing to the overheating in the economy was the sharp increase in the terms of trade as energy prices fell while forest product prices appreciated. (Honkapohja and Koskela 1999: 404)

²³ Other contributing factors to the slow-down included the loss of export income with a fall in the terms of trade and the collapse of the Soviet Union which saw trade with Russia drop immediately by 70%.

inject funds to support the sector, and total fiscal cost was estimated at approximately 7.5% of GDP by 1994. Major restructuring occurred throughout the industry with mergers of major commercial banks and the regrouping of most of the 250 savings banks into one conglomerate, the Savings Bank of Finland.

Norway

Throughout the decade of the 1980s, Norwegian authorities followed a similar path to liberalise the domestic financial industry. Again lending limits and interest rate controls were dismantled and foreign banks were permitted to set up local operations. (Drees and Pazarbasioglu 1998: 8-9) Consequently there was a tremendous surge in lending and money aggregates grew rapidly. From 1980 to 1990 total bank lending increased from around 100 million krone to 450 million krone. The ratio of bank loans to GDP jumped from approximately 30% to 65%. (Drees and Pazarbasioglu 1998: 13, 16)

Again the expansion in money aggregates fueled a boom in asset markets. Real estate prices quadrupled from 1980 to their peak in 1987. (Drees and Pazarbasioglu 1998: 23) Share prices soared, increasing six-fold from 1983 to 1990.²⁴ The ensuing collapse was similarly dramatic. By 1994 real estate prices had fallen back to their post-boom levels, and by late 1992 the share market had halved in value in comparison to its peak. The number of

²⁴ <http://www.oslobors.no/ob/index-history> link to Totalindeksen 1983-2001 (xls)

unemployed persons rose over 150% between 1986 and 1992.²⁵ The recession was precipitated in 1986 by a tightening of monetary policy and the effects of the sharp decline in oil prices, and occurred earlier than in Finland and Sweden.²⁶ (Drees and Pazarbasioglu 1998: 22)

In the aftermath of the collapse the financial sector went into crisis. Finance companies involved in property lending were the first to be affected and many ceased trading or were restructured. Banks began to experience difficulties in 1988-89 because of their associations with the finance companies, and those difficulties sharply escalated in 1991 when loan losses surged to 6% of GDP. The deepening recession led to large and robust companies to default on their loans. By 1993 non-performing loans increased to 11% of GDP. The banking industry was in danger of collapsing and the Government was forced to intervene and support it with the injection of substantial sums of capital. (Ongena, Smith and Michalsen 2000: 7-8) In the event, many smaller commercial banks closed permanently with only eight remaining in operation, and the Government became the sole owner or majority shareholder of the three largest commercial banks, representing 85% of the total assets of all commercial banks. (Ongena, Smith and Michalsen 2000: 8, 23, 26-29)

²⁵ <http://www.norges-bank.no/front/pakke/en/foredrag/2005/2005-02-17/charts/charts-2005-02-17.pdf>

²⁶ The Norges Bank's key interest rate was raised from 11.36% in 1985 to 14.16% in 1986 (see http://www.norges-bank.no/english/statistics/interest_rates/a_styr_e.html)

Sweden

Prior to deregulation, Sweden also possessed a restricted financial market similar to Finland and Norway which was subject to interest rate controls and quantitative loan limits to contain monetary expansion. Additionally, an imposition was placed upon the Swedish banks to favour lending to the government and housing sectors. Finance companies which were not subject to the same limiting measures flourished and the Swedish banks circumvented the controls by establishing their own finance companies.

Beginning in the late 1970s, the government initiated a process of financial market reform and deregulation which was completed during the course of the 1980s. Price and quantity controls were dismantled, and both bond and foreign capital markets were liberalized. (Drees and Pazarbasioglu 1998: 9-10)

As a consequence of deregulation, Swedish monetary aggregates exploded. Total lending by banks doubled from around 1980 to 1986 (from 200 to 400 krona) and doubled again from 1986 to 1990 (peaking at 800 krona). In line with this expansion, Sweden experienced an asset-price boom. Real estate and share prices catapulted in the order of 1000% during the course of the 1980s. (Drees and Pazarbasioglu 1998: 16, 23)

Again, the boom came to an abrupt end in the early 1990s. Asset-prices crashed, non-performing loans escalated and the banking sector went into

crisis. The recession was particularly severe. Output fell by 5% and the unemployment rate quadrupled reaching higher levels than those experienced in the Great Depression of the 1930s. (Kiander 2003: 6, 8)

Australia

The Australian banking system in the three decades immediately after WWII was the most heavily regulated industry in Australia. (Merrett 1997: 1) The raft of controls had developed from the experience of the 1930s depression and Australia's war-time needs. In the post WWII era, macroeconomic stability issues were the main concern and banking regulation, it was believed, enabled authorities to engage in monetary management in order to ameliorate the business cycle. (Merrett 1997)

The ability of the authorities to implement monetary policy was thwarted in the main, however, by the existence of non-bank financial institutions which lay outside of the gamut of controls. Consequently, the growth of these institutions was significant, particularly throughout the 1970's and first half of the 80's, prior to deregulation. This is demonstrated in the growth of Broad Money which outstripped that of M3 up until deregulation, when this pattern was reversed. (Bell and Quiggin 2006: 21)

During the 1980's the Australian financial landscape undertook a massive transformation. J.O.N. Perkins remarked "The sweeping changes that have

occurred by way of reductions of controls over the Australian financial system during the 1980s changed it from one of the most controlled banking systems in the world to one of the least controlled". (Perkins 1989: 1)

The impact of the dismantling of controls saw monetary aggregates jump by around 50% in the post-deregulation period. (Ackland and Harper 1992: 27) A monetary growth rate above the long-term growth, however, is unsustainable and distortive. It must coincide with inordinate movements in debt levels and commodity and/or asset prices. During the 1980's, the substantial additions to the money supply were mostly channeled into the corporate sector, where audacious entrepreneurs were running up huge debts as they sought to build their empires. The growth in the monetary aggregates fuelled a debt balloon and price escalation in the share and commercial property markets, which were unsustainable. The crash unfolded with the fall of the All Ordinaries Index in October 1987 by the order of 25 per cent. Sykes writes in his exhaustive study of that period:

"The corporate booms and busts of the 1980s were the greatest ever seen in Australian history. The boom saw a bunch of corporate cowboys financed to dizzy heights by greedy and reckless bankers...

"The ensuing bust saw awesome destruction. The collapses included Australia's largest industrial group ... the ninth largest enterprise in the nation ...nearly half the brewing industry...all three major commercial

television networks...Australia's largest car renter...the second largest newspaper group...Victoria's largest building society...and Australia's largest media group. Severe problems were faced by Australia's largest company...it's largest media group...and the other half of the brewing industry...

“The devastation was equally great among the financiers. Total write-offs and provisions by banks and financiers amounted to \$28 billion. Australia's largest three merchant banks ... had to be rescued by their parents. Two of Australia's four state banks ... suffered devastating losses...” (Sykes: 1994: 1-2)

Sykes attributed the boom/bust experience mostly to the banks: “The key factor underlying the crashes of the late 1980s was the prostitution of the banking system. The breakdown of the Australian banking system was both financial and moral.” (Sykes: 1994: 2)

The next crisis looming in Australia appears to be found in the private sector. Household debt levels have escalated dramatically over the last decade and a half. In total, bank lending to households jumped from 24% of GDP in 1990 to 67% in 2005. (Senate Committee 2005: 62) The Australian Senate Economics and References Committee reported in October 2005:

“A significant cultural change seems to have taken place in the attitude of many Australians towards debt. Twenty years ago Australian households averaged about \$50 in debt for every \$100 of income. That figure has now risen to about \$150 in debt for every \$100 of income...the total amount lent to persons by banks has ...risen dramatically, from \$92.4 billion in 1990, to \$579.1 billion in 2005. From having one of the most conservative approaches to debt in the OECD, Australians are now amongst the heaviest borrowers...” (Senate Committee 2005: 61)

The Senate Committee in the first instance attributed the debt escalation to the demand side. While it is true that borrowers had to be willing to assume higher debt levels, the rate of increase and the heights which have been reached could not have occurred unless the supply side was endowed with the appropriate vehicle of money-creation. It is debatable whether it is demand or supply driven – very often a thorny issue. Moreover, the fact that interest rates have remained historically low for over a decade would suggest supply factors were a crucial element. If demand had risen juxtaposed *without* an accommodating expansion in the money supply, it would have been reflected in an upward shift of those rates. The Governor of the Reserve Bank of Australia, appearing before the House of Representatives Standing Committee on Economics, Finance and Public Administration, on 12 August 2005 said “There is a very big industry out there which is utterly determined to put out as much credit as it can”. (Senate Committee 2005: 83)

Whereas the growth in money during the 1980s was channeled into the share and commercial property markets via lending to the corporate sector, during the 1990s the growth was fed into the domestic property market and the purchase of household consumption items. Commercial borrowings remained fairly flat.

As per the 1980s experience with bank lending and the corporate sector, that experience is being repeated currently with the household sector. The Economics Committee Report states:

“The finance droughts of the pre-deregulation years have given way to the reverse, a flood of finance into the market that lenders are anxious to place. The commercial incentives for doing this are understandable but can also have negative aspects. There is evidence that at least some lenders have sought to increase their share of the housing mortgage market and the size of their mortgage portfolios through lending practices that are unsound and in some cases, unscrupulous. This appears to be a particular problem among non-conforming lenders and mortgage brokers.” (Senate Committee 2005: 90)

At present, most households which are heavily indebted are coping with repayments and default rates are low. However, the high levels of household debt make the household sector vulnerable to a change in financial and

economic conditions and a significant fall-out is imminently possible. (RBA 2005: 2, 15)

The Asian Financial Crisis

The experience of the Asian Financial Crisis also lends support to the thesis of Walras and others. It is marked again by financial vagaries which produced macroeconomic instability.

There are numerous factors that analysts have identified in the lead-up, trigger, velocity and extent of the Asian financial crisis. Despite a wealth of literature on the subject, however, there is no consensus of opinion:

“Contrary to the impression conveyed by many economic journalists and commentators as well as by the international monetary fund, there is little agreement on how to understand and characterise this crisis.”

(Jomo 1998: 1)

The problem that economists have encountered is that the crisis did not arise out either “fiscal profligacy or macroeconomic indiscipline”. (Jomo 1998: 1) Therefore, the normal causes identified in such circumstances under laissez-faire principles – government interference or market inefficiencies – were not present. The macroeconomic fundamentals amongst the South-East Asian

nations were all strong - low inflation, strong export performance, large foreign exchange reserves, stable exchange rates, high savings and investment levels; and in addition there was fiscal balance or surplus. (Lissakers 1999 :4) Noble and Ravenhill write that the crises “came as a shock to virtually all observers”. (Noble and Ravenhill 2000: 1) Indeed these economies were known as the Asian tigers and had experienced remarkable growth based upon export performance for a prolonged period of time.²⁷

Moreover, the Asian financial markets were amongst the most unregulated in the world. According to the market ethos, therefore, there should have been minimal inefficiencies and vagaries unanticipated; certainly not the extent of the financial meltdown that eventuated.

Despite the quandary amongst orthodox economists that such an event occurred, this crisis demonstrates once again the essential features of a boom-bust scenario predicated upon an inordinate debt expansion made possible by an unregulated banking system endowed with the capacity to create money *ex nihilo*.

²⁷ There were some who discounted the claims of the SE Asian economic miracle. Krugman (1994) had pointed out that these SE Asian economies would be caught by diminishing returns because their productivity growth had been insufficient. Jomo et al, (1997) argued that these economies had not performed as well as had occurred in the case of Japan. In the wake of the Mexican crisis in 1995, attention was drawn to the growing current account deficits in the Southeast Asian region. But no-one anticipated the magnitude and extent of the meltdown.

The Cause: Debt Escalation

An overarching feature of the affected countries is the rapid rise in overseas borrowings by the private sector prior to the crisis. Jackson writes that it is “the hallmark of this crisis”. (Jackson 1999: 3) Noble and Ravenhill concur “The most fundamental change in the majority of east Asian economies in the 1990’s was the dramatic increase in inflows of international capital.” (Noble and Ravenhill 2000: 3) In 1996, the year before the crisis broke, total net capital flows were \$US110 billion in comparison to an average rate of \$US17 billion during the period 1983-89. (Noble and Ravenhill 2000: 3) As a proportion of total private capital flows to the developing world, funds directed to East Asia increased from 12% in the early 1980s to 43% by the 1990’s. (De Brouwer and Puppavesa 1999: 1)

It is indisputable that the crisis could not have occurred without this feature, given the raft of healthy macroeconomic fundamentals.

In the years immediately leading up to the crisis, cheap foreign credit arising out of the liberalization of Western financial markets, had poured into the affected countries. These funds, however, did not translate into profit streams sufficient to repay the debt but, together with domestic monetary expansion, fueled an unwarranted asset price boom. It was foreseeable, according to the proposition of Walras and others, that this flow of funds could eventually be stymied with the potential to produce a crisis of confidence and a financial collapse.

Another feature of the crisis was the impact of financial liberalization in the Asian economies themselves. (Hunter, Kaufman and Krueger 1999) This development was arguably a necessary precursor to the rapid growth of foreign capital inflow, because it was the banks and other financial intermediaries that were sourcing the foreign funds:

“Financial liberalisation led to a dramatic increase in the number of financial institutions and their range of activities. In Indonesia, for example, a wide range of financial liberalisation reforms in 1988 - 89 led to a dramatic expansion in the banking sector, with the number of private banks (including foreign and joint venture banks) nearly tripling from seventy-four in 1988 to 206 in 1994. In Thailand, credit expansion by commercial banks was limited by regulation, but financial liberalisation in the 1990s led to the emergence of other non-bank intermediaries that were largely unregulated. In Korea, interest rate controls and restrictions on corporate debt financing and cross-border borrowing were reduced. In both Thailand and Indonesia, banks were allowed to finance equity purchases on margin. Domestic financial liberalisation permitted greater maturity mismatching between assets and liabilities and increased the potential for illiquidity problems; it also exposed domestic commercial banks to greater competition and increased the pressure on banks to engage in riskier activities as well as allowed banks to evade restrictions on riskier activities.” (Hunter, Kaufman and Krueger 1999: 45-46)

The relaxation of controls permitted the influx of foreign funds and domestically sourced monetary expansion. The ensuing experience followed the familiar pattern put by Walras and others.

Critique of Krugman

Krugman's (1998) analysis is worth singling out and discussing because he came to the conclusion that the crisis was caused by financial excess which precipitated financial collapse. This bears resemblance to the essential proposition of Walras and others, however, there are important and distinct differences.

His seminal paper on the cause of balance of payments crises (Krugman 1979) did not provide an explanation for the SE Asia experience. He observed that the normal indicators of currency crises were not evident and so he looked elsewhere for an answer. He found it in the moral hazard model of financial crises. (Akerlof and Romer 1993) The basic premise of this model is that excessively risky investments are undertaken by banks and other financial institutions because governments provide implicit and/or explicit guarantees for their liabilities. This set of circumstances inevitably gives rise to financial fragility and ultimately financial distress. He noted that SE Asian financial intermediaries were able to obtain substantial sums from Western banks because they:

“...were perceived as having an implicit government guarantee, but were essentially unregulated and therefore subject to moral hazard problems. The excessive and risky lending of these institutions created inflation -- not of goods, but of asset prices. The over pricing of assets was sustained, in part, by a sort of circular process, in which the proliferation of risky lending drove up the prices of risky assets, making the financial condition of the intermediaries seems sounder than it was.”

The crash according to Krugman, was a bubble which had to burst:

"The mechanism of crisis ... involved that same circular process in reverse: falling asset prices made the insolvency of intermediaries visible, forcing them to cease operations, leading to further asset deflation. This circularity, in turn, can explain both the remarkable severity of the crisis and the apparent vulnerability of the Asian economies to self-fulfilling crises -- which in turn helps us understand the phenomenon of contagion between economies with few visible links."

The moral hazard model employed by Krugman which enabled him to adduce the errant behaviour of the Asian financial intermediaries supplied with international capital from Western banks, is arguably only partial and does not address the core issue. The corollary of their theory is that the fractional-reserve

banking system is efficient and functional provided there is satisfactory capitalization and prudential management.²⁸ Walras and others saw otherwise (see Chapter 2). The nature of fractional reserve banking produces the situation whereby banks push capitalization ratios to further and further extremes in order to secure higher and higher profits. This has always been the case since the inception of modern-banking by the English goldsmiths in the 17th century. Arguments that prudential controls would suffice, also in the light of this history, are not credible for two reasons: first, banks and other financial institutions have always sought and found ways to circumvent restrictions imposed upon their money creating powers. Examples abound - English banks in the 19th century utilized cheques and deposit accounts to escape controls on their note issues, Australian banks in the 1960s and 70s channeled funds through building societies to avoid loan and interest rate limits, and banks the world over evaded the 1988 Basle Accord agreement via off-balance sheet activities. (Conant 1927, Carmichael and Esho 2001, Basle Committee on Banking Supervision 1995)

Secondly, while capital adequacy provisions are designed for 'normal' trading conditions, the continuance of these conditions can never be guaranteed. Harvests fail, wars are declared and sentiments turn. The only provision which can provide an iron-clad guarantee is a 100% reserve. Hunter,

²⁸ A number of authors pointed to the lack of financial supervision and regulation as a causal agent of the SE Asia crisis (see for example Hunter, Kaufman and Krueger 1999: 46).

Kaufman and Krueger noted in relation to the SE Asia experience “some observers argue the Basle accord’s risk-adjusted capital ratios of eight percent are too low for emerging markets since they do not take into account the fact that emerging market economies tend to be more vulnerable to shocks”. (Hunter, Kaufman and Krueger 1999: 46) The fact is though that all economies are vulnerable to shocks and fractional capital ratios can always prove themselves insufficient. What figure would they judge to be a ‘safe’ ratio for emerging markets? Who possesses perfect foresight to make sufficient allowance for every contingency?

As has already been stated, banks have generally sought to avoid the limits imposed by regulators, by inventing new means of money creation and distribution. Capital adequacy may bolster confidence in a banking system and delay financial and economic collapse, however, while banks possess the power of *ex nihilo* money creation, crises - according to Walras and others - will be inevitable.

3. THIRD WORLD DEBT CRISIS

How the Crisis Arose

In the aftermath of World War 2, many colonies throughout the regions of the Pacific, the Sub-Sahara, South Asia and Latin America, sought and obtained independence. They joined the international community as free and self-governed states during the period of post-war reconstruction and accompanying commodity price and trade booms. The opportunity to realize substantial economic growth was therefore very present. Infrastructure development was necessary and funds began to flow from Western governments and banks to support these programs.²⁹ The channels and incentive to extend loans to the Third-World, were well established therefore at the genesis of financial deregulation in the 1970s.

With the commencement of financial liberalization, Western banks were also delivered a tremendous augmentation of their reserves as massive sums of 'petro-dollars' poured into their coffers. These sums originated from the actions of OPEC to restrict oil output which caused a sharp increase in the price of oil, while demand remained inelastic. Extensive loans were offered to developing nations at very low rates of interest, as banks sought out profit

²⁹ There was also political groundswell for international development emanating from the U.S., initiated by President Harry Truman in 1949 when "he called for the first-ever peacetime foreign aid program for poor nations The giving of advice, grants and loans to help poor nations." (Roodman 2001: 143)

opportunities.³⁰ Sovereign debt was thought to be the safest, and major Western banks competed strongly to place additional loans with Third-World governments.³¹ The subsequent growth of Third-World indebtedness throughout the 1970's and into the 80's was staggering. In 1972, the Third World nations had an external debt position of around \$100 billion. Over the next ten years that figure swelled to \$800 billion, representing an annual growth rate of 25%. This contrasts with an annual growth rate in GDP of 12%. (Khusro 1999: 9)

Analysts have noted that there were a number of contributing factors which brought the Third-World debt situation into crisis:

1. Most of the loans were not used to establish or enhance projects that would provide a future profit stream sufficient to repay the debt.
- 80% of Third World debt was incurred by Third World governments

³⁰ The Third World debt crises may have still eventuated without the liberalization of financial markets, because significant loans were being sourced by developing nations from Eurocurrency markets which have always operated outside the perimeter of government oversight and regulation. These particular money markets purportedly operate on a zero-reserve basis.

³¹ The essentially autonomous and unsupervised World Bank also contributed significantly to the rapid rise in Third World debt. It actively pursued an agenda to promote development in the Third World, extending loans itself and organizing loans from other lenders. "The World bank is the Third World's single largest creditor. Of the \$1.3 trillion the Third World owes to thousands of creditors, \$182 billion, or one dollar in seven, came from this one bank ... The World Bank's role in the debt crisis extends beyond its loans however. More than any other single institution, the World Bank influences development financing and policy in the Third World. As the best endowed development agency on earth, with the largest staff and an army of economists, the bank has drawn up investment plans for Third World governments, arranged financing packages for major capital projects, offered financial guarantees to private lenders, provided information about investment opportunities in the Third World, signed special "framework agreements" with the industrial countries' national aid agencies, managed multi-million dollar "trust funds" for cash-rich countries, and organised "consultative group" meetings of other aid donors to coordinate tens of billions of dollars' worth of loans. As a result of these efforts, for every dollar the World Bank lent to a Third World project, another \$2 to \$3 was attracted from other sources, both public and private." (Adams 1991:65, 68)

and though designated as investments, the borrowings were in effect more like expenditures. Moreover, investigations have shown that vast amounts of money were simply pocketed and squandered by corrupt dictators and their cronies, for example Mobutu in Zaire and Marcos in the Philippines. The World Bank estimates that up to 30% of loans from Western governments went directly into the pockets of corrupt officials and dictators. (Adams 1991)

2. The loan build-up accelerated as past loans were rolled-over and new loans extended to cover repayments. The overall debt level of Third World nations continued to spiral upward but there was really no capacity for these nations to repay the sum of debt. Much like an individual who has reached a state of insolvency yet staves off the day of reckoning by securing new loans with higher limits and rolls over their old debt. However, the overall size of the Third World debt, did not just bode ill for the borrowing nations it also threatened the viability of the lending banks themselves. A collapse of confidence was foreseeable and banks were therefore forced to present an appearance that these countries remained solvent, though they were clearly in default:

“The banks are no worse off in terms of cash flow, if a debtor stops paying interest altogether and if the debtor pays his interest with one hand, only to borrow it back with the other. This is precisely what happened in the five years between 1978

and 1983. The banks received about \$125 billion in interest from developing countries and then advanced the very same countries \$140 billion in 'new money'". (Kaletsky 1985: 44)

3. In the early 1980's, there was a downturn in the international economy largely created by the US when it raised interest rates in order to quell domestic inflation. This caused export prices and income to fall, and interest rates to rise for Third-World nations. Consequently these heavily indebted nations were caught in a tightening vice – they were required to increase their repayments, while their ability to repay any of their debt was shrinking.

It all came to a head in 1982 when Mexico threatened to default on its loan repayments. This created panic amongst the Western banks which immediately stopped making further loans. There was a very real prospect of an international financial collapse, as Mexico's action triggered a domino effect bringing down one bank after another. Several governments and international agencies led by the United States, stepped in to ensure that the Mexican loans were repaid and stave off such disastrous consequences. Effectively they stood as lender of last resort, preventing default and placating the international community. However, the situation was not one that could be resolved in the short-term. These developing nations were left with a huge debt-burden, the money which had been borrowed was literally gone and their ability to repay the debt was nominal. Moreover, they could no longer obtain additional funds because governments and banks refused to make

further loans until inevitably they were forced into providing roll-over provisions, which has occurred ad infinitum since then, to avoid again an international financial melt-down.

Crisis Aftermath

These countries have now come under IMF scrutiny and control. However, the structural-adjustment programs imposed by the IMF have not significantly reduced the debt burden, and have placed incredible social hardship upon the citizens of the affected nations.³² It is estimated that the Third World pays the developed world, thirteen times more in debt repayments than it receives in aid from those same nations.³³ It is arguable that many of these nations are presently caught in an intractable debt trap, since they remain unable to make

³² In its 1989 Annual Report, UNICEF attributed the death over the previous year of 500,000 children directly to the debt crisis (see Adams 1991: 160). It does not seem unreasonable to extrapolate from that figure and deduce that a wholesale slaughter of millions has occurred, and will continue. Roodman observed: "The governments of poor nations now owe so much to those of rich nations ...that many are spending more upon foreign debt payments than on basic social services for their desperately poor citizens. Zambia devoted 40 percent of its national budget to foreign debt payments in 1997 and only 7 percent to basic health and education, clean water, sanitation, family planning, and nutrition. Yet the death rate among children there is rising, partly because a third of them are not fully vaccinated. Meanwhile, the number of Zambian children not in school rose to 665,000 in 1998. In Mozambique, the government spends \$7 per person on debt service, compared with \$3 dollars on health, even though 160,000 children under five are dying each year partly from lack of basic drugs and health services. (Roodman 2001: 144) Roodman further observed "In many countries, budget cuts combined with economic recession and rising prices to raise unemployment and reduce the buying power of those still working. All this led World Bank Chief Economist Stanley Fischer to conclude in 1989 that "most of the burden has been borne by wage earners in the debtor countries." In Mexico, inflation -- adjusted wages halved between 1982 and 1988. Turkey's 1980 adjustment program led to price increases for goods sold by government companies, ranging from 45 percent for gasoline to 400 percent for fertiliser. This helped cut the buying power of workers' wages by 45 percent between 1979 and 1985 and the real value of crop prices for farmers by 33 percent.' (Roodman 2001: 147 -148)

³³ <http://www.jubileeresearch.org/jubilee2000/faq.html>

even the interest repayments on the outstanding principal. The figures demonstrate a debt overhang which continues to feed upon itself raising the overall debt level higher and higher. In 1991, the developing world as a whole owed a total external debt of \$1.3 trillion.³⁴ In 1997 the total reached \$2.2 trillion. (Dent and Peters 1991: 39) This contrasts with the fact that the terms of trade have deteriorated for these nations since the late 70's (Dent and Peters 1991: 8), which is due itself largely to the crisis. They have been forced to adopt "adjustment", "stabilization" or "austerity" measures by the World Bank and IMF, in order to boost export income and earn sufficient international currency to repay their foreign debt. This has directly caused a glut of commodities on world markets and consequent collapse of commodity prices. Roodman writes:

"Whatever the details, austerity needed to quickly extract national wealth such as food and tropical hardwood for sale abroad. This it had to do even though rich industrial relations were erecting import barriers against shirts and sugar and other exports of developing countries -- and indeed were subsidising their own exports of those products. Worse, each debtor had to compete with dozens of others pursuing the same strategy. As gluts developed, the IMF index of dollar prices for

³⁴ The actual figures could be substantially higher. Much of the loans incurred by the third world nations were sourced from the Eurocurrency markets. Frank writes "Nobody knows how much is really lent out on the Eurocurrency market or to whom, and some analysts suggest that real Euromarket ... loans to the Third World are double the haphazardly reported ones." (Crisis: In the Third World p 135)

commodities fell 56 percent between 1980 and 1999, accounting for inflation.” (Roodman 2001: 145)

Compared with other historical crises, the Third-World debt crisis is marked by the size and extent of the problem. The number of countries affected is magnified and the figures dwarf that of previous crises across groups of developing countries. (Suter 1992)

4. CONCLUSION

This chapter has canvassed the evidence connecting financial deregulation and macroeconomic instability. Beginning in the 1970's, financial liberalization was implemented in many countries throughout the world. It marked a significant departure from previously heavily regulated and controlled regimes. It was shown first that a clear pattern was apparent in the experience of nations in the developed world. In general, financial liberalization precipitated periods of steeply rising debt levels and soaring asset prices, followed by inevitable corrections, financial distress and wider detrimental impacts upon the macroeconomy.

The similarities of experience in the industrialized nations which undertook deregulation is striking. The nations examined in this chapter – Japan, Australia, Finland, Norway and Sweden – all display the same episodes of financial deregulation followed by marked macroeconomic instability. Other nations which were not canvassed also reveal a similar pattern. These include the United Kingdom, the United States, and Denmark. These nations also implemented financial deregulation and exhibited exactly the same concomitant macroeconomic problems. In contrast, Germany which did not embrace deregulation as these other countries did in the 1970-80s, did not suffer such economic volatility at that time.

Thus, the record amongst industrialized nations represents strong support for the view of Walras and others, that a banking system endowed with the capacity to create money *ex nihilo*, is a direct causal agent of macroeconomic instability.

This view is also demonstrated to be applicable not only in the developed world but also in the developing world. The SE Asian crisis represents particularly strong support for the conjecture of Walras and others because prior macroeconomic fundamentals for the affected nations were all positive. It was a crisis that surprised everyone because the cause went undetected. The processes that gave rise to the Asian experience it is argued are not just specific to that region for that particular time, but rather endemic, the direct product of the fractional-reserve banking industry. The funds supplied by the Western banks to the Asian countries were not excess savings chasing profitable opportunities in the East. They were funds created *ex nihilo* in abundance assisted by financial deregulation in the developed world. These funds were further augmented by domestic monetary expansion driven by localised financial liberalization. These two factors produced an unwarranted debt-asset price spiral and a dangerous investment climate that precipitated the crash.

Finally, the experience of the Third-World also lends weight to the view of Walras and others. The evidence points to the conclusion that the rapid rise in Third-World indebtedness and the heights to which it reached was the

direct result of the greater ease of money creation afforded to Western banks via financial deregulation.^{35 36}

It is unnecessary and inappropriate to place the responsibility for the problems encountered by Third-World nations solely upon the demand side. That these nations should have been aware of the risks they were assuming and therefore they alone should bear the consequences of their actions. The availability of loan-moneys made possible through *ex nihilo* money creation is a vehicle it appears that has always and perhaps will always enable reckless borrowing. Money is lent after all by the banks with open-eyes and with confidence that market conditions are such that the funds will be repaid.³⁷ It is an entirely reasonable proposition, therefore, that it is the supply side which must be transformed, as Walras and others foresaw, to contain unwarranted financial expansions and their detrimental consequences.

³⁵ It should be noted that significant sums are owed by Third-World nations not to banks but to international agencies and Western governments. The moneys loaned by these former institutions were granted for development purposes, and of course were sourced from banks so banks are still implicated. Also, governments have assumed some of the debt that originated in the first instance directly from the banks to relieve the potential distress upon banks of the non-performing loans.

³⁶ With the caveat, already acknowledged, that the crisis may have eventuated any way because large amounts of loan-moneys were being sourced from Eurocurrency markets. The essential point of the thesis is not harmed, if anything it is further enhanced, because of the unbridled opportunity banks operating in Eurocurrency markets have to create money *ex nihilo*. The development of Eurocurrency markets has coincided with the liberalization of financial sectors throughout the Western world.

³⁷ In the Third World debt crisis there is evidence that Western banks were flagrantly inept. Third World countries were never safe and secure nations for capital borrowings. In fact, risks were very evident before the huge build-up of debts during the 1970's. Adams writes "Third World governments have been close to default on the foreign loans since capital transfers begin after World War II, with new loans being used to pay back old loans. In 1965, a senior vice president at first National Citibank castigated Argentina, Bolivia, Brazil, Chile, and Uruguay for playing fast and loose with their treasuries, leading them to ...(come) back to Washington for bailout loans and foreign debt stretch-outs. In 1969, the Pearson Commission, pointing to a series of debt crises throughout the late 1950s and the 1960s, warned the world the day of reckoning was fast approaching." (Adams 1991: 105)

APPENDIX 1 - Congdon

Congdon in his insightful book “The Debt Trap” (1988) explains that there are natural limits to debt growth, beyond which debt becomes unsustainable. He made the observation that the 1930’s Great Depression was characterized by “a sudden and massive rise in the ratio of debt to national income” and that there was a parallel with that period and the early 1980’s. Congdon’s book was published in 1988. Table 1 updates his figures to 2003.

Table 1 – US Figures

	Debt owed by domestic non- financial sector (\$b)	GNP at annual rates (\$b)	Debt/income ratio
1969	1332.3	990.7	1.34
1970	1422.5	1,044.9	1.36
1971	1557.7	1,134.7	1.37
1972	1713.7	1,246.8	1.37
1973	1898.2	1,395.3	1.36
1974	2073.1	1,515.5	1.37
1975	2264.7	1,651.3	1.37
1976	2508.3	1,842.1	1.36
1977	2829.6	2,051.2	1.38
1978	3214.5	2,316.3	1.39
1979	3606.5	2,595.3	1.39
1980	3957.9	2,823.7	1.40

1981	4366.4	3,161.4	1.38
1982	4788.3	3,291.5	1.45
1983	5364.8	3,573.8	1.50
1984	6151.2	3,969.5	1.55
1985	7132.3	4,246.8	1.68
1986	7975.1	4,480.6	1.78
1987	8677.6	4,757.4	1.82
1988	9461.7	5,127.4	1.85
1989	10166.2	5,510.6	1.84
1990	10850.4	5,837.9	1.86
1991	11313.1	6,026.3	1.88
1992	11831.7	6,367.4	1.86
1993	12413.5	6,689.3	1.86
1994	12993.3	7,098.4	1.83
1995	13682.8	7,433.4	1.84
1996	14412.5	7,851.9	1.84
1997	15189.3	8,337.3	1.82
1998	16241.1	8,768.3	1.85
1999	17302.3	9,302.2	1.86
2000	18165.7	9,855.9	1.84
2001	19302.2	10,135.9	1.90
2002	20675.5	10,502.3	1.97
2003	22394.7	11,031.6	2.03

As Condon observed, from the early 1960's through to the early 1980's the debt/income ratio hovered between 1.3 and 1.4%.³⁸ It then rose dramatically reaching 1.78, when his series ended in, 1986.³⁹ The figures since then shows it continued to climb till it reached a peak of 1.88 in 1991. It came back slightly to 1.82 by 1997 and then commenced another dramatic upward shift to reach 2.03 in 2003.

What caused the sudden change in the early 1980's was, according to Congdon, the jump in real interest rates above the growth rate. Again, Congdon's figures are updated to 2003.⁴⁰ The following table (Table 2) and figure (Figure 1) show the comparison between the real interest rate and the growth rate.

Table 2 – US Figures

year	Real GDP price change %	Real GDP change %	Effective federal funds rate of interest annual	Real rate of interest	Real rate of interest - Real GDP change %
1967	3.1	4.8	4.22	1.12	3.68
1968	4.3	3.1	5.66	1.36	1.74
1969	5	0.2	8.21	3.21	-3.01
1970	5.3	3.4	7.17	1.87	1.53

³⁸ Going back to the post-depression era, from the 1940's on, for the next 40 years, 'the debt/income ratio was impressively – indeed, remarkably – stable' (Condon 1988: 16)

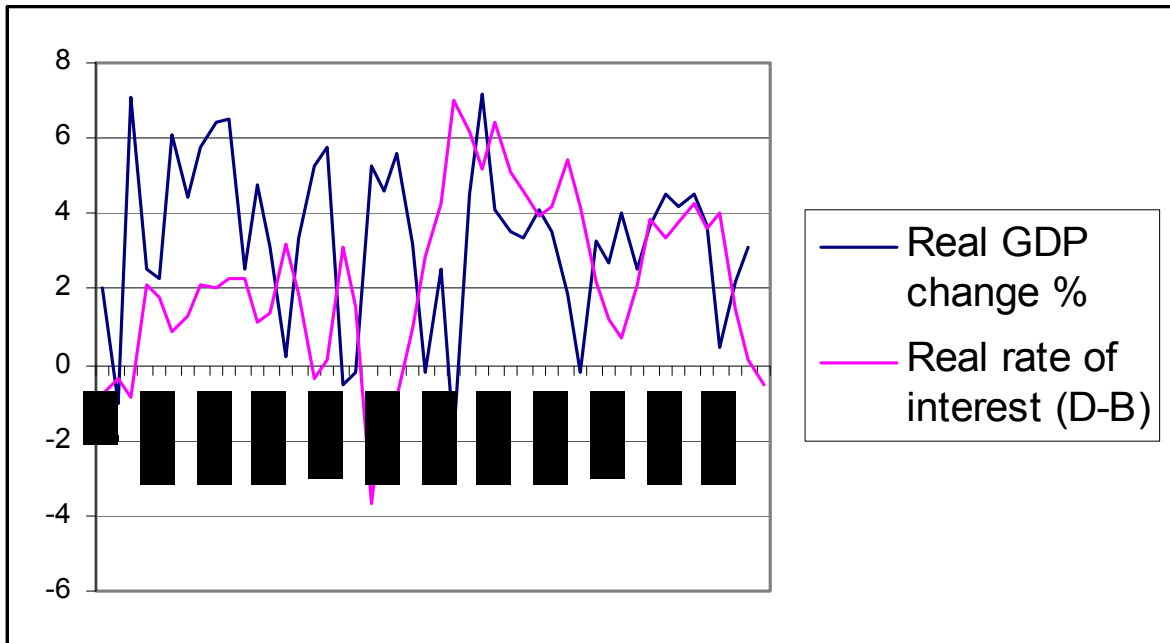
³⁹ His actual figure was 1.791 p17.

⁴⁰ Congdon used GNP growth rate whereas GDP figures are substituted here. Data from US National Income and Product Accounts and US Federal Reserve.

1971	5	5.3	4.67	-0.33	5.63
1972	4.3	5.8	4.44	0.14	5.66
1973	5.6	-0.5	8.74	3.14	-3.64
1974	9	-0.2	10.51	1.51	-1.71
1975	9.5	5.3	5.82	-3.68	8.98
1976	5.8	4.6	5.05	-0.75	5.35
1977	6.4	5.6	5.54	-0.86	6.46
1978	7	3.2	7.94	0.94	2.26
1979	8.3	-0.2	11.2	2.9	-3.1
1980	9.1	2.5	13.35	4.25	-1.75
1981	9.4	-1.9	16.39	6.99	-8.89
1982	6.1	4.5	12.24	6.14	-1.64
1983	3.9	7.2	9.09	5.19	2.01
1984	3.8	4.1	10.23	6.43	-2.33
1985	3	3.5	8.1	5.1	-1.6
1986	2.2	3.4	6.8	4.6	-1.2
1987	2.7	4.1	6.66	3.96	0.14
1988	3.4	3.5	7.57	4.17	-0.67
1989	3.8	1.9	9.21	5.41	-3.51
1990	3.9	-0.2	8.1	4.2	-4.4
1991	3.5	3.3	5.69	2.19	1.11
1992	2.3	2.7	3.52	1.22	1.48
1993	2.3	4	3.02	0.72	3.28
1994	2.1	2.5	4.21	2.11	0.39
1995	2	3.7	5.83	3.83	-0.13
1996	1.9	4.5	5.3	3.4	1.1

1997	1.7	4.2	5.46	3.76	0.44
1998	1.1	4.5	5.35	4.25	0.25
1999	1.4	3.7	4.97	3.57	0.13
2000	2.2	0.5	6.24	4.04	-3.54
2001	2.4	2.2	3.88	1.48	0.72
2002	1.5	3.1	1.67	0.17	2.93
2003	1.7		1.13	-0.57	0.57

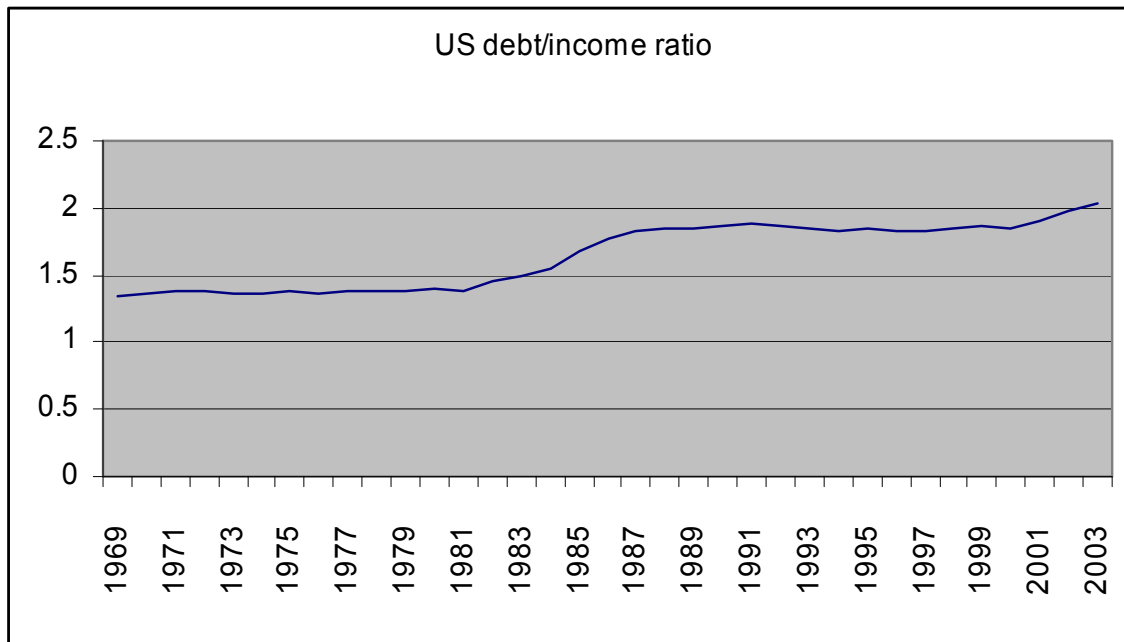
Figure 1



As the figure demonstrates, real interest rates remained largely below the real growth prior to the early 1980's. They then rose to be higher throughout the 1980's then fell back below the growth rate in the early 1990's. This is reflected in the easing of the debt/income ratio at this same juncture, and accords with Congdon's theory. However, from 2001 there is a dramatic

change. The real rate of interest turns down sharply, below the growth rate, while the debt/income ratio kicks up sharply.

Figure 2



Congdon's argument that when real interest rates are above real growth rates then debt-income ratio will rise is contradicted in recent years. The evidence is that debt-income ratios can also rise when real interest rates are below the real growth rate. His causal agent tells only part of the story. The focus should be upon the nature of the banking system and its capacity to create money.

Conclusion

When banks are unrestrained in their capacity to create money and the populace is willing to assume higher debt levels, debt/income ratios it seems possess a propensity to rise. During economic booms when profit opportunities are available and plentiful, speculation on asset price rises will likely cause debt expansion to outstrip any rise in income. This will occur whether or not the real rate of interest is above or below the real growth rate. During mild recessions, such as occurred in the early 1990's, it may be surmised that debt/income ratios will tend to hold steady or fall only slightly, if the debt overhang is large enough. In these circumstances, most debt is simply rolled-over, as income is insufficient to substantially reduce overall debt levels. That debt balloon, may also lead to macroeconomic instability if a crisis of confidence occurs and there is flight to sell-off assets in order to reduce debt levels.

APPENDIX 2 – English Banking and Economic History

There are numerous historical examples when governments have been persuaded to accept the view that a direct connection exists between monetary expansions abetted by banking practice, and financial or economic crises. The effects of such crisis has been sufficient to prompt authorities into action and impose controls upon banks to restrict their capacity to augment the money supply. Invariably, however, the banks circumvented the controls, and cyclical experiences continued. The British experience is particularly instructive, because it was the British model of fractional-reserve banking which has been adopted as the template of all financial sectors throughout the developed and most of the developing world. The table below summarizes the major events of British banking and economic history for first two centuries following the birth of fractional-reserve banking.

Major Events of British Banking and Economic History⁴¹

YEAR	ENGLISH BANKING HISTORY
←1640	Fractional-reserve banking non-existent. Certain banking 'functions' performed by variety of individuals. Increasing use of debt instruments ('bills obligatory' and 'bills of exchange') in trade.
1640	Seizure of merchants' gold by Charles I.

⁴¹ Adapted from Conant 1927, Richards 1965 and MacLeod 1971.

1640-1650	Merchants place their gold with goldsmiths. The notes issued on receipt of the gold begin to be used in trade transactions. Goldsmith's offer interest for deposited monies and produce notes in excess of gold holdings ie the birth of fractional-reserve banking.
1650	Goldsmith's fully developed banks and increasingly called upon to make advances first to Cromwell and then to Charles II.
1667	War declared with the Dutch. Subsequently, there is a run on the banks.
1672	Charles II orders the 'stop on the Exchequer'. Consequent ruin of many goldsmiths and holders of their notes.
1691	William Paterson puts proposal to Parliament for a public bank.
1694	Bank of England established in exchange for an advance to the government. It embarks on a massive note issue.
1696	Bank of England suspends gold payments. (Outstanding notes £750,000+, gold on hand £36,000-.)
1697	Bank resumes specie payments. Legislation enacted ensuring the Bank of a corporate monopoly position, in exchange for an advance to the government.
1709	Further legislation enacted granting the Bank sole right, as a company, to issue notes - in exchange for an advance to the government.
1711	South sea Company established
1720	South sea Company assumes the national debt. The Company collapses.
1742	Legislation enacted tightening provisions of 1709 Act - in exchange for an advance to the government.
1750-1790	Immense growth of number of country banks. Use of Bank of England notes as reserves. Huge increase in note circulation. Speculative boom during the '80s.
1792	Financial crisis looming. Bankruptcies rise.
1793	Declaration of war with France precipitates panic and financial chaos.
1793-1797	Pitt secures ability to procure unlimited monies from the Bank. Treasury bills and note issues rise dramatically. Specie drain occurs.
1797	Bank suspends gold payments.

<p>1797-1810</p>	<p>With suspension laws in force the Bank nonchalantly expands note issues. (Discounted paper £3m in 1795, £15.5m in 1809, £20m in 1810.) The number of country banks greatly expands together with their note issues. (Number of banks: 270 in 1797, 721 in 1810, with £30m notes in circulation.)</p> <p>In 1807 a speculative frenzy grips England.</p> <p>Price of gold rises dramatically and specie drains from the country.</p>
<p>1811</p>	<p>Bullion Committee reports recommending note issues should be manipulated according to the value of the pound on the exchange and the 'market' price for gold bullion. The Committee's findings rejected by Parliament.</p>
<p>1812-1813</p>	<p>Trade with Germany and Russia recommences after Napoleonic wars. Speculative frenzy again takes hold. Export prices double and treble.</p>
<p>1814-1817</p>	<p>Bankruptcies rise and financial crisis commences. 89 country banks collapse, 4 to 5 times that number cease operations. Total circulation of country bank notes in 1816 half that of 1814.</p>
<p>1825</p>	<p>Financial panic.</p>
<p>1826</p>	<p>Banking law liberalised. Corporate banks allowed to operate out-side 65 mile radius of London.</p>
<p>1833</p>	<p>Banks permitted to operate inside the radius provided they did not issue notes. Bank of England notes granted legal tender status.</p> <p>The Bank assumes central bank role.</p>
<p>1844</p>	<p>Legislation enacted enforcing recommendations of Currency School. Erection of new banks prohibited and note issues restricted.</p>
<p>1847</p>	<p>Financial crisis.</p>

CHAPTER 4

THE NATURE OF MONEY and NEW MONETARY ECONOMICS

Introduction

The proposition of Walras and others is quite a straightforward construct. It is not bound up in complex theory. Given this accessibility and the seemingly ample evidence to support it, which was discussed in the last chapter, the question arises why is the current literature absent of any treatment of such a proposition? Perhaps part of the answer is contained in the observation of Galbraith that “The process by which banks create money is so simple that the mind is repelled.” (Galbraith 1975: 18). The money-creating operation of banks was not generally understood for centuries and, anecdotally, remains a mystery to many in this present day.

Nevertheless, there are other reasons presented in this chapter and the next that inhibit the science from perhaps embracing such an idea. In this chapter two aspects are explored. First, the way in which money is understood in the economics profession is critically appraised. It is argued that the convention prohibits a distinction to be made concerning the different classes of money. Once this distinction is observed it is much easier to highlight bank-created money and its influences. Also in this section, the legality of money creation is investigated and an alternate legal definition of money is presented, which

also assists to differentiate bank-created money from other forms of money. Secondly, the presentation and conclusions of an influential school, the New Monetary Economics, are critically analysed. It is argued that at the genesis of the school, a truncated perception of the role of banks was adopted which keeps the idea that banks could be the principal source of macroeconomic instability off the radar.

Part 1 - The Nature of Money

1. SUMMARY

The current orthodoxy is to identify money by its functions. This functional approach to defining money causes all financial instruments to be lumped together as a single entity called 'money'. It is advantageous, however, to distinguish between the different types of financial instruments grouped together as 'money'. The history of modern banking shows that a bank-created financial instrument should properly be construed as a debt instrument and therefore a promise-to-pay money.⁴² Accordingly, asset money and government fiat money, can be distinguished from bank money. Walras and others who argued for the cessation of *ex nihilo* money creation by banks, typically distinguished bank money as a false or fraudulent money.

⁴² Despite the distinction made of money 'proper', the term money continues to be used for other financial instruments, that circulate as a means of payment, with qualification for example 'debt-money' or 'fiat-money'.

It has proved to be an accident in the development of main stream economic thought - beginning with Hume and Smith - that all financial instruments used to facilitate transactional payments are grouped together as money. This was largely because the original contributors to economic science, it may be surmised, did not fully understand fundamental banking practice, i.e. the processes by which banks created money *ex nihilo*. Surprisingly, for centuries it remained largely a mystery as to how banks were able to manufacture money. Consequently, the development of monetary theory developed upon an inappropriate footing on two accounts: first, the conventional approach to defining money did not permit bank-created instruments to be distinguished from money proper; and secondly, fundamental banking practice was neither understood nor incorporated into macroeconomic theory.

The difficulty that modern economists have been encumbered with in comprehending the essence of money, is exemplified by the mutually exclusive views of significant modern contributors to the field of money, banking and finance: namely, Gurley and Shaw (1960), and Pesek and Saving (1967). Gurley and Shaw present the view that all money is debt, while Pesek and Saving argue in contradiction that all money is wealth. Despite attracting considerable interest at the time of publication, the diametrically opposed views posited by these major contributions to monetary theory, remains as a point of contention. (Buchanan 1969) The origins and subsequent history of bank instruments, however, reveals that there are distinct classes of coexisting financial instruments that may be distinguished

under the general title of money. There is money which is identified as wealth, and there is also money – or ‘false’ money per Walras and others - which is debt. When this distinction is observed and its ramifications understood, a better assessment may be made of the fundamental operations of money markets and their macroeconomic consequences.

2. HISTORICAL BACKGROUND

Money is now universally defined in economics by its functional attributes. Pick out any “Principles of Economics” textbook from a library shelf and it will contain a functional definition of money. Here is a sample:

“Money: anything that is generally acceptable in trade as a medium of exchange and that also serves as a unit of account and store of value.”

R.N. Waud, P. Maxwell, A. Hocking, J. Bonnici and I. Waud,
Economics, 3rd Edition, 1996, Longman, p61

“Since money may not always serve as a store of value and since there are many stores of value other than money, it is best not to include the store-of-value function as part of our conceptual definition of money. Instead, we simply label as ‘money’ whatever serves as the medium of exchange.”

W.J. Baumol, A.S. Blinder, A.W. Gunther and J.R.L. Hicks, *Economics: Principles and Policy*, Second Edition, 1992, Harcourt, p234

“Money is any commodity or token that is generally acceptable as the means of payment....Money is accepted as a means of payment because it performs three functions: medium of exchange, unit of account, store of value.”

D. McTaggart, C. Findley and M. Parkin, *Economics*, Fifth Edition, 2007, Pearson, p618

“...it seems better to define money by its functions than by its physical characteristics. Like beauty, money is what money does.”

E. Mansfield, *Economics: Principles, Problems, Decisions*, Fourth Edition, 1983, Norton, p323

“Just what is money? There is an old saying that “money *is* what money *does*”. In a general sense anything that performs the functions of money *is* money.”

C.R. McConnell and S.C. Brue, *Economics*, Fifteenth Edition, 2002, McGraw-Hill, p244 (emphasis theirs)

“In economics, money has usually been defined as any generally accepted medium of exchange.”

R.G. Lipsey, P.N. Courant and C.T.S. Ragan, *Economics*, Twelfth Edition, 1999, Addison-Wesley, p577

“Money is anything that is generally acceptable as a medium of exchange (that is, acceptable as payment for something).”

J. Sloman and K. Norris, *Economics*, Second Edition, 2002, Pearson, p432

“...money ... is anything that serves a commonly accepted medium of exchange or means of payment.”

P.A. Samuelson and W.D. Nordhaus, *Economics*, Sixteenth Edition, 1998, McGraw-Hill, p466

“Money is the set of assets in the economy that people regularly use to buy goods and services from other people... Accordingly to the economist’s definition money includes only those few types of wealth that are regularly accepted by sellers in exchange for goods and services.”

J. Gans, S. King, R. Stonecash and N.G. Mankiw, *Principles of Economics*, Third Edition, 2005, Harcourt, p620

The functional attributes of money include medium of exchange, store of value, means of deferred payment, and unit of account. Principally, money

performs the task of a medium of exchange, therefore, anything that is used as a medium of exchange is typically pronounced to be money.⁴³ However, this approach is not free of problems. In particular, it leads to an inability to distinguish bank-created debt instruments and this in turn leads to further conceptual difficulties in monetary theory.

To understand the important distinctions between the variety of financial instruments it is necessary to examine their historical development. The present banking systems of the Western world are modelled upon the English system whose origins trace back to the latter half of the 17th century. This structure comprises a private banking sector permitted to create money *ex nihilo* and a central bank authority that supervises that sector and implements monetary policy. (The overview below is drawn from Conant (1927), MacLeod (1971) and Richards (1965).)

The modern bank has two principal functions: the creation of money and financial intermediation. Banks are classified as a distinct group of financial institution because of the former function. All bank and non-bank financial institutions perform the function of financial intermediation. What distinguishes banks is that they alone possess the ability to create money *ex nihilo*.

⁴³ Although there is general agreement that financial instruments that are used for transaction purposes are money, other financial instruments that are used principally for their store of value facility are often considered to be a 'near' money which should be excluded from the measure of the (circulating) money supply.

The modern bank has as its genesis the 17th century English goldsmiths. These artisans were thrust into the financial affairs of the merchants when they were conscripted to safe-keep the merchants' gold. This new role provided the goldsmiths the opportunity to engage in money creation and thereby initiate the defining practice of the modern bank. This remarkable ability, i.e. to create money *ex nihilo*, deserves close scrutiny because when fully understood it permits a useful categorisation of the different types of past and present financial instruments.

The Genesis of Modern Banking

In England during the 16th century, financial services were provided by scriveners, merchants and goldsmiths.⁴⁴ Those services included bullion trade, direct lending, indirect lending through financial intermediation and foreign currency exchange. With the growing use of bills of exchange some also began to offer clearing-house services. Gold was the common medium of exchange amongst merchants and paper instruments did not circulate as currency.⁴⁵ There was no evidence of money creation and, therefore, in a strict sense no bank existed. None of agents relied upon for financial services issued notes and employed the use of fractional reserves.

⁴⁴ The scriveners were a body of professionals whose tasks included letter writing, production of legal documents, court recorder, scribe, real estate agent, contract lawyer and money-lender.

⁴⁵ Bills of exchange in England were used for international trade purposes and served single purpose transactions. (Powell 1915: 24-25)

The event that precipitated the emergence of modern banking was the seizure of the merchants' gold held in the Mint located in the Tower of London by Charles 1 in 1640. Charles needed funds for his war effort and he took the gold for that purpose. Despite returning the monies to the merchants some time afterwards, they no longer could trust the monarch for its safe-keeping. Instead they turned to the goldsmiths who, because of the nature of their trade, possessed secure safes and established businesses in London.

Because the merchants' cash holdings were primarily provisions to cover their bills of exchange, the goldsmiths quickly became embroiled in the financial dealings of the merchants. In addition, the goldsmiths were increasingly relied upon by the merchants for loans. In order to satisfy the merchants borrowing requirements, they also commenced to act as financial intermediaries obtaining funds from the public, and began the practice of bill discounting. The goldsmiths issued notes in return for gold deposits and discounted bills, and it was an easy matter for merchants to begin assigning the notes in trade rather than redeeming them for gold to complete transactions. As this practice of assignment became the convention amongst merchants, the goldsmiths were permitted the opportunity to manufacture and issue notes on a multiplied basis of their cash reserves.⁴⁶ Thus goldsmiths

⁴⁶ That multiple was in the order of 10% to 25%.

evolved remarkably quickly from craftsmen to bankers in a modern sense employing the practice of note issues upon a fractional-reserve.⁴⁷

The above account is that which is generally presented by historians. There are important details that can be added to this account, which assist in understanding the natures of the different financial instruments and their economic impacts.

- The goldsmiths' notes underwent radical change in their legal and economic status. At first they were bailee notes or non-assignable warehouse receipts. They represented 100% of gold stocks that were held in trust by the goldsmiths. The role of the goldsmiths was initially that of a bailor.

Despite being non-negotiable at law – the law was only altered in the early 17th century to that effect - merchants began to assign them in the course of trade because of the obvious convenience. The notes thus evolved into an entirely different financial instrument, however, the implicit guarantee of immediate redemption remained intact.

- At first, goldsmiths were passive agents warehousing the merchants gold. As they were called upon by merchants for loans, however,

⁴⁷For earlier European examples of fractional-reserve banking see Ussher (1943). Though predating the goldsmith to banker era, as mentioned above, it is the English model which became template for financial systems throughout the world.

instead of providing the physical sums of bullion in their possession, they issued newly manufactured notes. These new notes contained exactly the same guarantee as those already in circulation. Despite having the appearance of a bailee note, deposit note, or warehouse receipt, they represented no actual sum of gold.

- The goldsmiths moved into a financial intermediary role. They began to solicit funds from the general public and paid interest for the deposits. However, those physical sums of gold deposited by the public were not lent out. Instead the gold augmented the goldsmiths reserve stocks from which they could pyramid an enlarged circulation of notes linked to debt. The public willingly accepted the goldsmiths' notes, because the notes could be used like currency alongside of coin, and they held the unconditional promise of payment of coin upon demand.

Commensurate with this development the goldsmiths altered the face of the notes which enhanced their exchange properties. No longer were they a personal note made out in a customer's name, instead they were made out 'to bearer'. (Richards 1929: 225) The status of the goldsmith note therefore changed from having the appearance of a specific bailment note to a general promissory note, although still possessing the guarantee of the former. The note contained the

formula "payment in full upon demand".⁴⁸ This guarantee, however, was false. If all of the notes, or at least a sufficient number representing a sum over and above reserves, were presented for payment, the goldsmiths could not comply with the request. The guarantee appeared that the goldsmiths possessed 100% reserves yet they held only a fraction in store.

- With the production of new notes not linked with a deposit, the goldsmiths initiated the practice commonly understood as fractional-reserve banking. In effect they created money *ex nihilo*. The new notes appeared in circulation alongside of the existing notes and were indistinguishable. There was no legislation restricting the employment of this newly created money and goldsmiths were at liberty to use the fictitious notes for whatever purposes they desired: to purchase assets, goods and services, or to make speculative investments, or to make loans to unwary borrowers.

Of the European counterparts Holdsworth wrote:

"By lending the funds at their (bankers) disposal, the bankers could finance profitable undertakings. And in time they found

⁴⁸Jevons described the transition in the following manner: "...the goldsmith gave receipts (for deposited moneys), and at first these documents were special promises, like dock warrants (but they became) general and not special promises - mere engagements to deliver a sum of money on demand, without conditions as to keeping a reserve for the purpose". (Jevons 1910: 201)

they could use for this purpose not only the money actually deposited with them, but also their credit. A promise by a banker of good repute to pay on demand was as good as money and was taken as money. Thus in 1584 Contarini said that *a banker could accommodate his friends, without payment of money, merely by writing a brief entry of credit; and that he could satisfy his own desires for fine furniture or jewels by merely writing two lines in his books.*" (Holdsworth 1903-38: Vol VIII, 179, emphasis added)

These new notes are correctly described as fictitious because though being clothed in exactly the same garb as those already in circulation, they were vastly different. The existing notes had arisen out of actual deposits and their holders correctly believed they could convert their deposit notes into gold on demand. Hence, the merchants and general public regarded the notes to be deposit certificates. The newly created notes - drawn up by the goldsmiths to look exactly the same as their former counterparts - did not arise out of any actual deposits of hard currency. There was no announcement made by the goldsmiths that they were now manufacturing and issuing new 'deposit' notes. It may be said that the goldsmiths were effectively converting paper into 'gold'.

- The production and issue of new notes upon a fractional reserve altered the nature and basis of the money supply. In a pure specie system the money supply is asset based. Whereas under fractional-reserve system, the money supply becomes predominantly debt based as bank reserves of gold (or government script) represent only a small fraction. The latter is arguably more prone to produce economic instability than the former because

(1) the money supply is able to be expanded and contracted much more readily

(2) the money supply becomes subject to people's willingness to incur debt and banks willingness to extend loans

(3) because debt is typically linked to asset-prices the money supply becomes intrinsically linked to the vagaries of asset markets and vice versa,

(4) finally, the banking system is in a perpetual state of fragility with the very real possibility of collapse. Under 'normal' trading conditions the goldsmith/bankers would be able to meet calls for redemption. The vast majority of their notes would continue to circulate in exchange and not be

presented. History shows that 'abnormal' demands, however, have been a periodic occurrence, and when they did happen it meant not only the ruin of bankers but also that of the holders of their valueless notes.

(This state of fragility continues in the current banking system. Banks never possess sufficient reserves to meet withdrawal requests over a fraction of their total liabilities. Bank runs can happen if confidence in their ability to pay is questioned. Because bad debt must be written off against reserves, it takes only a relatively small component of banks loan portfolios to sour to precipitate a crash. Banking history is replete with bank collapses - see Chapter 3, Appendix 2.)

- The adoption of fractional-reserve banking bestowed upon the goldsmith/bankers enormous economic power. They now had control over the money supply and it could not be guaranteed that they would manage it appropriately. Indeed, the 18th and 19th centuries were characterized by cyclical boom/bust episodes that may be attributed to inappropriate manipulations of the monetary stock. The business of banking after all is to earn profit by extending loans - at virtually zero marginal-cost to the banks - on a fractional reserve base. It is arguable that the banking system has a built-in propensity to push the limits in

boom periods to unsustainable levels of monetary growth forcing inevitable corrections and possible financial distress.

Fractional-reserve Banking and the Law

The English courts were pressed upon by the goldsmiths to grant the special status of negotiability to their notes i.e. to sanction the assignment of notes so that they represented payment exactly like receiving gold coins. However, the courts resisted those calls because they foresaw the potential for fraud. They understood that the goldsmith bankers were in a position to deceive the public for their own personal gain.

Powell's J. stated in the case of *Ward v Evans* (1702): "...the taking of such a note is no payment; for it is always a conditional acceptance, and so understood, not to be a discharge till paid; and if it should be otherwise, it would be to let in fraud; and give goldsmiths and others an opportunity of cheating traders." (2 Ld. Raym. 928 at 931)

Chief Justice Holt too observed the distinction between bank notes and gold, and held the view that the use of the former was not a legitimate form of payment. In the same case he stated "... I am of the opinion, and always was (notwithstanding the noise and cry, that is the use of Lombard Street, as if the

contrary opinion would blow up Lombard Street) that the acceptance of such a note is not actual payment." (*Ward v. Evans* (1702) 2 Ld. Raym. 928)

Moreover, he acknowledged the pressure of the goldsmith lobby to gain negotiability for their notes, and the reason behind their request: "... the notes in question are only an invention of the goldsmiths in Lombard Street, who had a mind to make a law to bind all those that did deal with them." (*Buller v. Crips* (1704) 6 Mod. 29.)

Despite these protests by the senior English judiciary, the goldsmiths' notes were granted the status of negotiability at the time of the establishment of the Bank of England and the passing of the Promissory Notes Act of 1704.

It is contended that, though acknowledged by the courts, in effect the deceit went largely undetected in England and became irrelevant with the swift entrenchment of banking practice and legal sanction endorsed and implemented by parliament. Kaldor writes, in reference to the early economists' theories which employed the notion of a fixed gold-money stock, about the ignorance of the augmentation of paper money over and above gold stocks:

“There was, however, always a complication, due to the existence of paper money. Originally this was thought not to make any difference: paper money was preferred as more convenient to handle and to carry

about, but it was really no more – or thought to be no more – than a cloakroom ticket for the gold deposited with trustworthy persons like goldsmiths, and, later, moneylenders or bankers, who had strong-rooms for safe keeping.

“However, this simple idea about paper money could no longer be maintained when it was discovered, rather to the distaste of economists like Walras, that the volume of paper money in circulation was a multiple of the amount of gold deposited in the vaults of banks.”

(Kaldor 1985: 19-20)

In the same vein, Wicksell writes in reference to the European counterparts and the discovery of this deceit and the collapse of banks:

"It frequently happened therefore, that Governments utilized these assets (gold reserves held in trust by the banks) in times of monetary difficulty by borrowing them from the banks, thus causing the money to return into circulation, either in corpore or in the form of deposit certificates which did not correspond to actual deposits in the banks. In effect, and contrary to the original plan, the banks became credit institutions no actual stock of money existed to correspond with the total of deposit certificates. So long, however, as people continued to believe that the existence of money in the banks was a necessary condition of the convertibility of the deposit certificates, these loans

had to remain a profound secret. If they were discovered the bank lost the confidence of the public and was ruined, especially if the discovery was made at a time when the Government was not in a position to repay the advances." (Wicksell 1935:74-75.)

As cited above, the English courts of the day readily identified the potential for fraud to occur that would arise from allowing goldsmith notes to circulate. Fraud can be defined to have occurred on the commission of two principal elements, false representations and an unjust gain. It is possible to argue that the goldsmiths did engage in fraud, because these two elements are evident.

- *False representations:* The goldsmiths manufactured notes over and above their gold reserves yet these notes guaranteed the immediate payment of gold upon presentation. These guarantees patently could not be fulfilled on all occasions. The goldsmiths' guarantees therefore amounted to false representations. They knowingly produced a vast quantity of additional notes that placed them potentially in an impossible predicament. Their hope was that the majority of their notes would continue to circulate indefinitely and never be presented. However, the holders of the notes were under no obligation to limit demands for redemption. The goldsmiths were legally bound to repay physical sums of gold way beyond their actual stocks.

The guarantee of immediate redemption was necessary for the notes to be accepted as a circulating medium of exchange. In the eyes of the holders the notes had to be as good as gold. Patently, this was not true.

- *Unjust gain:* The goldsmiths were at liberty to employ their manufactured notes for any purpose. They could offer them as loans and charge interest, or purchase commodities and assets for themselves. In other words, a mere slip of paper with a goldsmith's inscription became real purchasing power invented *ex nihilo*. Their notes which were produced at negligible cost and effectively valueless could be traded for things of real value. Consequently, the goldsmiths were able to unjustly transfer wealth from society to themselves.⁴⁹

In addition, the goldsmiths required collateral for the offer of a loan. Upon default that collateral became the property of the goldsmith. Because the loans moneys were constituted not upon deposits but by invention, this was another vehicle by which goldsmiths could acquire assets unjustly.

⁴⁹ Similarly, under a pure gold system with circulating coins, fraud could be commissioned by clipping, sweating or debasement.

Conclusion

There has been no greater development in financial history than the inception of modern banking. However, a careful analysis of its origins brings to light certain legal questions. In effect, a fictitious and fraudulent form of money creation became the *modus operandi* of modern banking. The economic impact of that form of money creation was to place the money supply upon a fragile footing. The money supply became inextricably linked with bank policy, debt preferences and levels, and the market value of the collateral tied to that debt i.e. profit streams based upon commodity prices, and asset prices. The money supply no longer was fixed to the quantity of bullion available, it became highly elastic and subject to potential volatile behaviour. The era after the inception of fractional-reserve banking was characterised by periodic financial and economic boom/bust episodes, which led Walras and others to correlate the two and provide an immediate remedy.

Despite the historical evidence, present-day economic theory largely shuns – by accident rather than design - the thesis of Walras and others. It is contended that part of the reason for disregard, is the way in which money is defined upon its functional attributes.

3. THE ORIGIN OF THE FUNCTIONAL APPROACH

David Hume first outlined the functional approach to defining money in his essay entitled "Of Money". However, he was careful to observe that notes were not money proper, and he warned of the danger of over-issue. He opened his essay with the assertion that money was "... only the instrument which men have agreed upon to facilitate the exchange of one commodity to another. It is none of the wheels of trade: It is the oil which renders the motion of the wheels more smooth and easy." (Hume 1964: 309) Hume explained the detrimental impact that the extended use of bank credit had upon prices, and he called "paper-credit...a counterfeit money". (Hume 1964: 311) Paradoxically, after denigrating bank money Hume went on to espouse its virtues. He argued that creeping inflation was beneficial to economic prosperity and utilising the facility of the easy manufacture of bank credit to expand the money stock could achieve that result. However, he did not explain how the growth of the supply of bank credit could be contained to an appropriate level, and he conceded in his conclusion that "... giving too great facility to (bank) credit ... is dangerous." (Hume 1964: 340)

Adam Smith adopted Hume's approach to defining money without ascribing notes as counterfeit. His endorsement was sufficient to promote the functional view of money as subsequent writers followed his lead, such as Henry Thornton, John Stuart Mill and David Ricardo. None of these economists, nor any other early contributor to economic science, apparently fully understood

how banks created 'money'. None formally demonstrated the fractional-reserve system or explained the money-creation process. Importantly, Smith himself employed the erroneous doctrine of the 'Law of Reflux', which had as its central thesis the belief that bankers could not augment the money supply, but only displace the existing gold stock (although Smith did admit banks had over-issued on occasions and he warned of the dangers associated with the general usage of bankers' money). Difficulty understanding banking practice persisted from Smith onwards, and this shortcoming of monetary theory was starkly revealed during the 19th century in the famous Bullionist v. Anti-Bullionists and Currency v. Banking Schools debates, and particularly in the failure of the policies of the Currency School which were embodied in the Act of 1844. The Act sought to limit the money creation powers of the banks by limiting note issues but its intent was overcome by the use of 'deposit' creation and chequing facilities.

It has therefore been the practice of orthodox monetary theory since the very earliest writers, to identify money according to the functional approach. In the present-day context, although banks are not permitted to issue notes, they nevertheless create 'deposits' which represent promises to pay (fiat) money. These 'deposits' are debt instruments which circulate as a medium of exchange and modern economists, therefore, largely believe they are money. Consequently, economists have, in the main, seen little significance in exploring the distinct and separable natures of money and bank instruments. This has led, however, to significant conceptual problems amongst modern

economists aptly demonstrated in the divergent views of Gurley and Shaw, and Pesek and Saving. Their variance was never resolved as attention focused upon ideas of market efficiencies and financial deregulation swept the world. And yet it is unsatisfactory that such a significant controversy remains unresolved. Monetary theory has yet to be put upon a firm footing regarding the nature of money.

4. THE DEFICIENCY OF THE FUNCTIONAL APPROACH

History shows that money has always been sourced from some physical commodity that represented real wealth. (Taylor 1978: 34-35) Before the invention of the goldsmith's note, gold was used as a convenient means to transfer ownership of wealth, and properly described as the nation's money. Money 'proper', in a historical context, is a component of the wealth of a nation: money is wealth.

If money were not wealth, this would destroy the jurisprudential basis for its use as it would permit fraud. If money, which is recognised and accepted by society as a claim to wealth, could be invented and used by some members of society without cost, this would provide them with enormous privilege and power, enabling them to acquire wealth from other members of society without rendering wealth of equal value themselves. Hence, it would be a

denial of natural justice. Counterfeit and fraud have always been punishable offenses.

The bank note first employed by the goldsmith-banker was a promise to repay gold on demand which had been deposited for safe-keeping. The note itself was not money, but a mere promise to repay existing money, i.e. a sum of gold, 'on demand'. Only the gold which the note represented was money. Therefore, despite the note's acceptance in the place of gold, legally it represented a claim to gold payable by the issuer. In the eyes of the holder of the note it could be converted into gold in an instant. Nevertheless there was no need to ask the goldsmith to perform their obligation because the note was used to settle trade agreements by simple transfer of title.

Importantly, however, the note always remained the debt of the goldsmith and it is incorrect to construe that the note was money. This point of clarification becomes even more important in light of subsequent developments when the goldsmiths produced additional notes, not linked to a deposit of gold. These new notes were identical to those already in circulation and contained the explicit promise of payment 'on demand'. They were hollow title deeds to non-existent gold. To construe that these new notes were money is tantamount to bestowing the power upon bankers to invent wealth from nothing. The notes must be distinguished from the gold which they supposedly represented. Wealth cannot be manufactured from the mere stroke of a banker's pen by which they augment their outstanding debt obligations. The

invented note represented an arguably fraudulent claim upon the community's wealth but was not wealth itself. And yet if the functional approach to identifying money were categorically employed, the bank note would also be declared to be money together with the precious metal. This is an unsatisfactory result and thus the functional approach is an inappropriate means of defining the nature and essence of money.

5. GURLEY AND SHAW VERSUS PESEK AND SAVING

Two important modern works which deal with the concept of money are J.G. Gurley and E.S. Shaw, "Money in a Theory of Finance" (1960), and B.P. Pesek and T.R. Saving, "Money, Wealth and Economic Theory" (1967). It might have been expected that the authors ideas on the nature of money would have displayed a convergence of conceptual identity, given the development of monetary economics that had already transpired prior to the publication of their works. However, the opposite is true. They adopted strict viewpoints which were diametrically opposed. Gurley and Shaw argued that money was debt whereas Pesek and Saving asserted money was wealth. Pesek and Saving's book appeared after the publication of Gurley and Shaw's work, and Pesek and Saving throughout their work argued against Gurley and Shaw's stance, admitting that money could not be both a debt and an asset.

Both pairs of authors were partially correct as it is possible to distinguish between (real) money which is wealth and (invented) money which is debt. They were incorrect to claim that all money was wealth or all money was debt. The inherent inadequacies of their approaches will be demonstrated by critically examining their definition of money and by contrasting their treatments with a suggested categorisation of the three essential types of money - commodity-money, fiat-money and debt-money.

Gurley and Shaw

Gurley and Shaw incorporated a complex financial system into a neo-classical framework, and examined the interplay of real and financial markets. They began with a simple economy-wide model in which only a government agency was permitted to create money, and progressively augmented the model to include additional features which more closely reflected present-day circumstances. In their initial model they posited that "money is a fiat issue with no backing whatever" and that this fiat issue was "money in the literal sense of a means of payment". (Gurley and Shaw 1960: 14)

This money was injected into the system via government purchases of goods and services. Clearly, this money was manufactured by the government without incurring any debt at all. There could be no redemption or claim against the government from those who held this money, as members of the society had not lent anything of value for the notes they had received from the government. Rather, they had irrevocably relinquished ownership of goods

and services in exchange for notes which represented real purchasing power. The notes possessed this purchasing power because of the proclamation of government that they had to be accepted as a means of payment under the threat of penalty for non compliance.

Later, however, Gurley and Shaw inappropriately altered the concept of fiat money by stating that fiat money was "government debt, issued in payment for government purchases and services or in transfer payments. It was a claim held by consumers and firms against the government". (Gurley and Shaw 1960: 72-73) This is an incorrect definition of fiat currency and it overturned their original and correct formulation. Fiat money, as its name implies, is the prerogative of the State that does not incur debt. It is a misnomer to describe fiat money as debt, and to do so leads to confusion in comprehending the nature of different instruments of exchange.

The reason why Gurley and Shaw fell into this error was perhaps due to the methodology they had adopted. The evolution of their model required the progression from the creation of money via a public authority to private organisations, i.e. banks. In their second model, for instance, Gurley and Shaw imposed the requirement that money issues by the government agency arose out of the purchase of private/public securities or on the basis of gold holdings, and added the feature of a fractional-reserve. However, this description of fiat money makes it synonymous with bank money. Fiat money should be distinguished from bank money.

Bank money which is provided by a private banking system upon a fractional-reserve basis is by nature debt. Under the gold standard, the private bank note or 'deposit' (i.e. bankers' debt) was a promise to pay gold upon presentation of the note or withdrawal of the 'deposit'. Under a pure fiat system, government issues a fiat currency containing no explicit nor implied promise of redemption, and banks promise to pay fiat currency upon withdrawal of a deposit. The bank note (or bank deposit) and the government fiat note are two very different instruments. The first is a debt instrument the second is not.

Consequently, when Gurley and Shaw conclude: "We count as money any debts of the monetary system that are a means of payment generally accepted on markets for labour services, current output, and primary securities. Thus we regard the nominal stock of money in the United States as the sum of currency held by spending units and demand deposits subject to check..." (Gurley and Shaw 1960: 134) they have misconstrued the types of money that are in existence. It is true that the vast bulk of the money supply represents private bank debt but this sum is supported by a foundation of fiat currency that does not represent (government) debt.

It should be emphasised that although the fiat currency represents a very small component of the overall money supply, its existence is absolutely essential to the functioning of the modern financial system. Some standard of value whether it be a fixed quantity of some commodity or a notional object

such as a fiat note, provides the base from which a fractional-reserve banking system can augment the money supply via debt-money creation. The bank note or bank deposit is a promise to pay something, and that thing must in the eyes of the community represent something of value. Fiat currency has value imputed when the government declares it to be legal tender. The general community accepts fiat currency as a medium of exchange because they are bound by law to do so.

The primary reason fiat currency is traded, therefore, is its imputed legal status and secondarily because of its market or economic value. The latter derives from the former. If fiat currency were to somehow lose its status at law it would almost certainly lead to its abandonment as a medium of exchange. Economists have largely neglected the legal basis of its acceptance and hence source of value, and instead interpreted its demand to derive solely from its scarcity and its use as money.

On a more general note, Gurley and Shaw's methodology and conclusion embodies a credit theory of money i.e. money arises out of debt. They were not the first to embrace such a view. Periodically works have appeared presenting a credit theory of money; one of the earliest and noted adherents being Wicksell (1935). However, this theory was never absorbed into mainstream thought because economists have, in general, accepted a money theory of credit, i.e. debt arises out of the existence of money, in light of the historical genesis and evolution of the modern banking system.

Pesek and Saving

Pesek and Saving examined the notion of wealth in relation to a number of concepts, one of these being money. They concluded from their analysis that all forms of money - commodity, fiat and bank money - were wealth and that the "money was debt" view was improper. The basic proposition they employed to distinguish wealth was that an object was wealth provided it "yields a positive income stream to the users of it which is not offset by a negative income stream to the nonusers". (Pesek and Saving 1967: 48)

They argued that a transition from a barter economy to a commodity-money economy allowed for the same quantity of goods and services flows with additional leisure time as a consequence of the reduced exchange costs. This increased leisure time would permit some individuals to engage in productive pursuit and so increase the flow of some good(s) without decreasing the flow of another.

In addition, they argued that "the value of the money commodity itself is a part of the wealth of the community". (Pesek and Saving 1967: 48) This assertion that a commodity-money represented a component of the wealth (or capital) of a society, finds general acceptance at least because of its non-monetary uses. However, the authors went on to make an attractively simple and yet unjustified and inappropriate generalisation: they argued that because a commodity-money was wealth then all other forms of money, specifically fiat and bank-money, were also wealth.

There are a number of problems with their argument. Firstly, as explained above, bank-money historically began as a debt instrument, i.e. a promise-to-pay a certain quantity of a commodity-money. Although, nations have abandoned a commodity-standard and replaced it with a fiat-standard, bank-money remains by nature a debt instrument. This is still the orthodox view. Secondly, if fiat and bank-money are wealth then it logically follows that the wealth of a society could be infinitely expanded by the mere production of (cost-less) fiat and/or bank-money. This raises the spectre of the mercantilists' erroneous doctrine that wealth was founded in the abundance of money. Thirdly, there is a basic flaw in their logic. Identification and substance should not be assumed merely because of functional similarities.

The question might well be asked how could Pesek and Saving and Gurley and Shaw come to such divergent opinions? The answer perhaps lies in two areas: first, in the way in which economists typically, and as argued above inappropriately, define money; and secondly, because of a misunderstanding of the development of banking practice.

The conventional manner in which money is defined results in *all* instruments that are used to transact trade, regardless of their origins or legal identities, being classified as money. Gurley and Shaw and Pesek and Saving, therefore, could have been subtly conditioned to group all monetary instruments into one class. Hence, all money was debt or all money was wealth. The discussion above, however, has already explained the distinct

differences between money proper and bank-money. What is necessary to properly discern the differences between the classes of money is an understanding of their histories and legal identities. Money is first and foremost a legal concept as it relates to matters of ownership of wealth and its transfer. This has largely gone unnoticed amongst the ranks of modern economists who, because of their sphere of investigation and the inertia of entrenched convention, have solely concentrated on the economic uses of money.⁵⁰

6. A JURISPRUDENTIAL DEFINITION OF MONEY

From a jurisprudential perspective money is a right-of-purchase. A person who holds money has an actionable right to purchase goods and services that are offered for sale. That right has arisen from that same person's credit owed to them by society because in the past they have provided some good or service equal in value to the money they received in exchange. The person has provided a benefit to society and they are due an equivalence and reciprocation in value. In a barter economy that equivalence and reciprocation is strict and immediate. In a money economy, it is highly fluid and capable of delay.

⁵⁰Moreover, it has led to an inadequate modelling of the money market and an inability to explain important financial phenomenon, such as asset price cycles. (See Chapters 5 and 6.)

This is not a novel idea. There are a number of writers, including Locke and Mann, who adopted this legal perspective on the nature of money. MacLeod - a barrister by profession who wrote prodigiously on economics, money and banking - traced this idea back in history to the ancient philosophers and quoted Aristotle:

"But with regard to a future exchange (if we want nothing at present, that it may take place when we do want it) money is as it were our security. For it is necessary that he who brings it, should be able to get what he wants." (MacLeod 1866: 255)

MacLeod's definition of money is:

"... (money) represents indebtedness or services due to the owner of it, and it represents the right or title which its owner has to demand some product or service in recompense for some service he has done for someone else." (MacLeod 1866: 257)

The French philosopher Bastiat is another who postulated a jurisprudential definition of money. Of the 'true function of money' Bastiat wrote:

"What does it (a dollar) imply in your hands? It is, as it were, the witness and proof that you have, at some time or other, performed some labor, which, instead of turning to your advantage, you have

bestowed upon society as represented by the person of your client (employer or debtor). This coin testifies that you have performed a *service* for society, and, moreover, it shows the value of it. It bears witness, besides, that you have not yet obtained from society a *real* equivalent service, to which you have a right. To place you in a condition to exercise the right, at the time and in the manner you please, society, as represented by your client, has given you an acknowledgment, a title, a privilege from the republic, a counter, a title to a dollar's worth of property in fact, which only differs from the executive titles by bearing its value in itself; and if you are able to read with your mind's eye the inscriptions stamped upon it you will distinctly decipher these words: - "*Pay the bearer a service equivalent to what he has rendered to society, the value received being shown, proved, and measured by that which is represented by me.*" (Bastiat 1877: 198-199, emphasis his)

The historical origin of monetary instruments points to the underlying and essential quality of money being a right-of-purchase. It demonstrates that the reason for the selection of monetary instruments was dependent upon their ability to convey rights-of-purchase. In this regard, Taylor writes:

"People seek money because it has purchasing power." (Taylor 1978: 34)

The acceptance of a monetary instrument as a means to convey purchasing power, or rights-of-purchase, Taylor observes:

"... is conditioned by our experience of the purchasing power of money in the immediate past. This in turn was affected by earlier purchasing power and so on until we arrive at the very inception of the monetary demand. At that particular moment, the purchasing power of a certain quantity of gold or silver was determined by its nonmonetary uses only.

"This leads to the interesting conclusion that the universal use of paper monies today would be inconceivable without their prior use as 'substitutes' for real money Such *token* money has purchasing power although it lacks any nonmonetary demand because people now direct their (monetary) demand towards such paper money."

(Taylor: 1978: 34-36, emphasis his)

Thus the ability of a monetary instrument to convey purchasing power, or rights-of-purchase, is governed by experience. Although that instrument might undergo subsequent change, a community's acceptance of it is founded historically upon some real commodity. That commodity possessed market value for its uses other than its use to convey rights-of-purchase. The market value of the physical commodity was the value of the rights-of-purchase it was used to convey.

7. CLASSIFICATION OF MONETARY INSTRUMENTS

In order to identify the distinguishing characteristics of the different types of money, it is sufficient to approach the task with only an understanding of their origins. The essential issue is how an instrument acquired the status to permit the transfer of ownership i.e. how an item was acknowledged by traders to possess purchasing-power.

Commodity-money

A commodity-money, prior to its use as money, possessed (market) value because of its non-monetary uses. It represented, therefore, a component of the wealth of society. When a person relinquished ownership of an amount of this commodity to another, via trade, clearly a sum of physical wealth passed between them. A commodity acquired general monetary usage because it had certain 'monetary' characteristics; divisibility, immutability, rarity, etc.

Fiat-money

Fiat-money had monetary status imputed by simple government edict. Fiat money possessed no market value of itself but through proclamation, and legal enforcement, it obtained value. It was not a component of the wealth of society but represented a claim to this wealth.

Bank-money

Bank-money in its earliest form was a bailee note that was composed on the basis of a deposit of commodity-money. It represented title to existing wealth, and banks held a 100% reserve. The note evolved next into a general promissory note, i.e. a promise-to-pay a sum of commodity-money. It strictly represented bankers' debt and, importantly, the total outstanding note issue became a multiple of the reserves held by the banks, as they shifted to a fractional reserve basis by producing and issuing new notes that did not arise out of new deposits. Subsequently, bank-money became a promise-to-pay fiat money, and the supply of bank-money was sourced from 'deposit' creation rather than note issue.

Therefore, commodity-money should be classified as *wealth*, fiat-money as a *claim to wealth* that does not incur debt and which is the prerogative of the State, and bank-money as *debt*. This resolves the problem that remained from the works of Gurley and Shaw and Pesek and Saving.

The respective proportions of these different types of money have varied over time. Currently amongst developed nations their fiat currencies represent only a very small percentage of the total money supply, bank money being most dominant. Therefore, Gurley and Shaw's view is more consistent with present conditions than Pesek and Saving. In contrast, the latter's views are more

consistent with the time prior to the gold-smith banker when physical gold represented the whole of the monetary stock.

Distinguishing the different types and sources of money is important to understand the machinations of the money market and its consequences.

Part 2 - New Monetary Economics

With the ascendancy of the free-market ethos in the last two decades of the 20th century and the consequential drive to dismantle government controls, much attention has been given by theorists to the question of just how far deregulation of the banking system should go. A number argued for the complete removal of all controls together with the abolition of the central bank. Their views have been collected under the title of 'The New Monetary Economics' (NME).⁵¹

Certain publications appeared in the 1970's which sparked renewed interest in *laissez faire* or free-banking that was fanned into flame with the implementation of measures to deregulate the financial systems of many industrialised nations in the 1980's. These works were Fischer Black's article "Banking in a World Without Money" (1970) and Eugene Fama's article "Banking in the Theory of Finance" (1980) - both of which built upon James Tobin's article "Commercial Banks as Creators of 'Money'" (1963) - and Friedrich von Hayek's books "Choice in Currency: A Way to Stop Inflation" (1976) and "Denationalisation of Money: An Analysis of the Theory and Practice of Concurrent Currencies" (1978).⁵²

⁵¹ 'The New Monetary Economics' is somewhat of a misnomer as authors who have contributed to this area have been careful to explain that free-banking has been espoused by a succession of historical figures dating back to the 17th century. (See, for example, Cowen and Kroszner 1994: 101-172)

⁵² Two streams of works, from a variety of subsequent contributors, flowed from these seminal publications. Following in Black/Fama's tradition were Hall (1981, 1982), Greenfield

The position taken by Walras and others is antithetical to a free-banking system that is premised upon a fractional or zero-reserve requirement. They recommended a free-banking system that operates only on the basis of 100% reserve. Such a stipulation, however, is not a part of Black's, Fama's nor von Hayek's schemas.⁵³ None of the contributors to NME have proposed or endorsed a 100% rule. On the contrary, they have all advocated a pure credit system in the vein of Wicksell, which in theory and practice means 0% reserves.

It is contended, that the seminal work of Black, Fama and von Hayek is the seed that has produced a branch of study which fails to capture important elements of the impact of free-banking upon the macro-economy. In this regard it is the objective of this Part to demonstrate that sufficient shortcomings exist in the views of Black, Fama and von Hayek that cast doubt on their arguments and conclusions. Most importantly, the major weakness is that they all emphasise the financial intermediary role of banks and ignore or set-aside the macroeconomic implications of money creation by private

and Yeager (1983, 1986, 1989aandb), Coates (1989, 1994) Walters (1990) and Cowen and Kroszner (1994). Those who developed von Hayek's ideas were White (1984), Dowd (1988, 1989, 1994), Selgin (1988) and Coats (1994). Glasner (1989) is another noted contributor who claims inspiration from Earl Thompson (Glasner 1989, xiv). The two streams are not dissimilar and share some common ideas as might be expected. However, there is much disagreement amongst the contributors over certain practicalities of free-banking. Areas of conflict include: the separation of medium of exchange and unit of account functions; convertibility versus non-convertibility, direct versus indirect convertibility and the nature of the redemption medium.

⁵³ The Austrian school, of which von Hayek was a leading advocate, was split on this issue. In contrast to von Hayek, other principal members – for example Murray Rothbard and Ludwig von Mises - explicitly advocate free-banking with 100 per cent reserves. (Rothbard 1990)

banks. This deficiency is systemic in the NME literature. It is not to say that NME arguments regarding efficiency and financial intermediation are unsound or misdirected, rather the line of reasoning is based upon a foundation which is too strict and narrow, and in the end produces inaccurate and incomplete conclusions. In a private email dialogue with a leading proponent of NME, Professor Ian Harper, he acknowledged “there is nothing in the NME system to eliminate credit cycles”. It was indeed these credit cycles which Walras and Fisher sought to eradicate, and their policy recommendation to achieve that end is the antithesis of core NME proposals.

1. BLACK AND FAMA

Both Black and Fama acknowledge their source of inspiration as Tobin’s 1963 article “Commercial Banks as Creators of ‘Money’”. For instance Fama writes:

“In large part, the analysis of banking presented above can be viewed as a development of Tobin’s (1963) insight that banking is just another industry whose equilibrium is subject to standard economic analysis.” (Fama 1980: 49)

Tobin argued that the sole role of banks was as financial intermediaries and he specifically refuted their capacity to create money: “Neither individually nor collectively do commercial banks possess a widow’s cruse” (Tobin 1963: 412). Tobin put the case that money should not be distinguished from other financial assets and a bank was no different from any other financial institution. He castigated the teaching of what he called the “Old View” which was the “exposition of the multiple creation of bank credit and bank deposits” (Tobin 1963: 408), and promoted the “New View” being

“...the essential function of financial intermediaries, including commercial banks, is to satisfy simultaneously the portfolio preferences of two types of individuals or firms. On one side are borrowers, who wish to expand their holdings of real assets....On the other side are lenders, who wish to hold part or all of their net worth in assets of stable money value with negligible risk of default.” (Tobin 1963: 410)

Tobin’s assertion that banks did not invent new money, however, has not been received and adopted into mainstream thought. The ‘Old View’ of money creation continues to be taught in the way he disparaged. Textbooks are unanimous in their treatment of banks and money creation.⁵⁴ Despite

⁵⁴ Whilst textbooks have in general adopted a proper treatment of banks and their capacity to create money, this facility has yet to be adequately incorporated into the understanding of the money market and its impact on the macroeconomy. Typically, for instance on the portrayal

forty years of analysis and investigation, together with the tremendous development of finance markets and incorporation of new technologies, the fundamental theory of banking and money creation has remained unaltered. Tobin's view did not gain acceptance because experience did not support it. How is it possible to explain the growth of monetary aggregates, sometimes at substantially high rates, without an engine of supply? Tobin's reliance upon financial intermediation cannot provide an answer. In particular, the failure of monetary targeting in the 1970s demonstrated powerfully the ability of the financial sector to augment the money supply despite the attempts of authorities to contain it. Measures to restrict monetary growth would inevitably be circumvented by banks, or by other financial institutions utilizing bank-created funds. This ineffectiveness is due in part because of the ability of banks to supply new forms of debt-money instruments that fall outside the gamut of the regulations. Commentators referred to the 'fungibility' of money, now more often as 'financial innovation', to explain this phenomenon.

Therefore, for both theoretical and practical reasons, Tobin's position has been rejected and the orthodoxy stands that banks do create money. Thus when Black and Fama draw from Tobin's analysis, they are building their own inquiries upon a restricted footing, disregarding a fundamental feature of banking practice and its macroeconomic consequences. Although Fama explicitly attempts to counter the macroeconomic instability arguments, both

of the money market, textbooks currently proffer an inelastic supply for money whereas a better approach, as explained in Chapter 5, is to present an elastic supply for money.

Black and Fama's treatment of money-creation and its effects falls short because they focus solely on the financial intermediary role of banks, in line with Tobin's truncated and inadequate view.

Financial Intermediation v. Money Creation Roles

Black argues that it is a "myth" that banks can influence aggregate demand because

"... banks must have deposits for all their loans. When a bank allows one person to borrow, it must attract an additional deposit equal to the amount borrowed. When one individual decides to spend more, some other individual must decide to spend less". (Black 1970: 18)

This statement is quite incorrect. Banks of course do not need the deposits of one person to be able to offer a loan to another. This is the core error of the Tobinian view which denies that banks create money and act only as financial intermediaries. Banks create balance-sheet "deposits" when they make a loan as has been the common practice for the last two and one half centuries and would no doubt continue to be the principal mode of operation under the Black/Fama system.

Black's goes on to add:

“Borrowing must equal lending; an increase in one must be balanced by an increase in the other. Thus an added demand for consumption goods by one individual must be balanced by a reduced demand for consumption goods by another individual. So aggregate demand is not affected.” (Black 1970: 18-19)

In other words, Black is asserting that the sole function of banks is to intermediate the re-injection of savings; the leakage of savings by some individuals is offered as loans for expenditure purposes to others via the banking sector. Again, Black is quite incorrect. Banking practice does affect aggregate demand because banks do not merely recycle existing funds, they invent new funds *ex nihilo* which directly impact expenditures and therefore aggregate demand. It is this cause and effect association which led Walras and others to recommend the abolition of money-creation by banks.

Black adopts an extreme Tobinian position, i.e. banks do *not* create deposits they only receive deposits, whereas Fama states (or misstates – see below) the practice and tries to demonstrate its irrelevance in the determination of market equilibrium. Curiously, Black does make veiled references to deposit creation, for example “banks will not be restricted in making loans to businesses” and “banks are not restricted in the amount they can loan by reserve requirements”. (Black 1970: 12, 13)

In contrast Fama openly acknowledges deposit creation by banks - “...(banks) issue deposits and use the proceeds to purchase securities”. (Fama 1980: 39-40) However, his description of deposit creation is unconventional and he misconstrues fundamental banking practice:

“... banks have two functions. They provide transactions services, allowing depositors to carry out exchanges of wealth through their accounts, and they provide portfolio management services ... the concern with banks in macroeconomics centers on their role as portfolio managers, whereby they purchase securities from individuals and firms (and a loan is, after all, just a purchase of securities) which they then offer as portfolio holdings (deposits) to other individuals and firms”. (Fama 1980: 44)

Banks invent new deposits when they make a loan. Those deposits are made available to the *same* individual or firm – not “other individuals and firms” as he contends - who receives the loan. Banks are not serving the role of a financial intermediary as his description implies. They are creating an entirely new sum of money which hitherto was non-existent.

As to the macroeconomic consequences, Fama’s chief purpose is to place Keynesian style coordination problems in the context of efficiency principles. His core thesis is that banking falls within the gamut of the Modigliani-Miller theorem, and asserts that unregulated banking will conform to their

microeconomic optimisation rules. Hence, there would be no detrimental macroeconomic consequences:

“A basic point of this paper is that when banking is competitive, the portfolio management activities of banks are the type of pure financing decisions covered by the Modigliani-Miller (1958) theorem. From this result we can infer that there is no need to control either the deposit creation or the security purchasing activities of banks for the purpose of obtaining a stable equilibrium with respect to prices and real activity.” (Fama 1980: 40)

In this regard, Fama deals specifically with claims he cites by Johnston (1968), Gurley and Shaw (1960) and Patinkin (1961) that the price level would be indeterminate under an unregulated financial system. He specifically refutes their argument in his theoretical world because banks would no longer manufacture money:

“In all these analyses, the problem of price level determinacy arises from treating unregulated deposits as ‘money’ and then trying to force this money to be numeraire.” (Fama 1980: 44)

Fama reasons away the need for the existence of money, as did Black. This is the core element of NME. He argues that when banks are free to issue

both equity and debt instruments without the “mischief introduced by the concept of money” banks will purely be “financial intermediaries with no special control over the details of a general equilibrium”. (Fama 1980: 44, 45)

Banks in his anticipated world, however, will still possess the capacity to create debt-based deposits *ex nihilo*, and these will be used to facilitate exchange. In a real world of uncertainty and speculation, asset-price spirals will not be abated, if anything they will be enhanced because banks will be free of all capital-adequacy controls and would erect asset portfolios themselves and issue equity-claims. There is nothing in the NME literature to stop the occurrence of credit cycles. These cycles are what Walras and others directly seek to overcome by adopting a strict commodity-based money. This is antithetical to the NME position which envisages the abandonment of the idea of money altogether. To entertain an NME world requires a blind eye to be turned to the vagaries of credit cycles and their remedy.

Moreover, it is questionable whether the Modigliani-Miller theorem should be applied in the case of bank. The theorem’s framework is structured upon the choice in corporate capital raising between debt and equity. Companies’ borrowings are limited by the total value of the assets they own and their ability to repay. Banks stand in a privileged position because their debt i.e. historically notes and presently deposits, circulate as the means of payment. Their *modus operandi* is to issue their debt instruments and acquire assets,

predominantly loans. The business of banking is to multiply debt many times their reserves, and presently the supply of money has an elasticity coefficient close, if not equal to, zero. The lower bank's reserves are as a fraction of their overall liabilities, the greater are their potential profits.

As to the ability to repay, banks have always and continue to operate on the basis that they would *never* have to repay the vast majority of their outstanding debt instruments. The goldsmith-bankers multiplied their note issues on the hope that only a fraction would be redeemed for gold on any given day. Present day banks operate in the hope that depositors will not withdraw more than their stocks of fiat currency. Fractional reserve banking has always and will continue only to exist on the basis that the vast majority of banks' debt instruments will circulate indefinitely – this is the core feature of fractional - or an NME world of zero-reserve banking. And as profit-seeking institutions, it is the business of banking to continually augment their debt instruments. Thus banks have always and inevitably been found unable to meet their debt obligations with ensuing suspension of convertibility under a gold standard, or government support in modern fiat systems, or collapse. Crucially, the debt of companies does not circulate indefinitely as currency like bank debt does. For these reasons, the class of banking should be regarded as distinct and different, unlike any other corporate structure.

VON HAYEK

In his book “Denationalisation of Money”, von Hayek presents a model for the financial sector that is founded upon the principle of free enterprise in its strictest sense. His essential proposition is the permission of free private issue of competing currencies, that are to be traded both nationally and internationally. He claims that such a scheme would overcome the vagaries of present financial systems including domestic trade cycles and balance of payments problems. The former he directly attributes to the manipulation of the money supply by government authorities. True to his philosophical persuasion, if government control were abolished economic woes would disappear. The market will always produce optimal outcomes.

Like Black and Fama, von Hayek portrayed a visionary picture of what the likely composition would be of the institutions under such a regime and how the competing currencies would function.

The key question put by this dissertation is whether private banks should be permitted the freedom to issue money at all. Von Hayek’s whole system is founded upon the premise that banks should have an unfettered right to issue currencies of whatever nature the market deems appropriate. The objective here, therefore, is to argue the apparent lack in his treatise to consider the vagaries of money creation *ex nihilo* through whatever agency.

Moreover, there are historical examples of competing currencies that demonstrate such a system does not produce an idealized world as von Hayek portrays. These episodes of financial history are not canvassed in his works.

Money, Banking and Macroeconomic History

Von Hayek opened his book with a quote by Smith attributing the debasement of metal currencies to the malpractice of sovereigns:

“For in every country of the world, I believe, the avarice and injustice of princes and sovereign states abusing the confidence of their subjects, have by degrees diminished the real quality of the metal, which had been originally contained in their coins.” (Von Hayek 1978: 13)

Von Hayek affirmed Smith’s assertion, and furthered it by attributing macroeconomic instability directly to government control over the money supply:

“...the chief blemish of the market order which has been the cause of well-justified reproaches, is susceptibility to recurrent periods of depression and unemployment, is a consequence of the age-old government monopoly of the issue of money.” (Von Hayek 1978: 14)

He deplored this result and reasoned that inflation was preventable and necessary if a free society and the free enterprise system were to continue in existence:

“In my despair about the hopelessness of finding a politically feasible solution to what is technically the simplest possible, namely to stop inflation...I could not resist pursuing the idea further, since the task of preventing inflation has always seemed to me to be of the greatest importance, not only because of the harm and suffering major inflations cause, but also because I have long been convinced that even mild inflations ultimately produce the recurring depressions and unemployment which have been a justified grievance against the free enterprise system and must be prevented if a free society is to survive.” (Von Hayek 1978: 13)

Perhaps understandably, from this reference point, von Hayek uses emotive language in denouncing the role of the state and its control over the money supply:

“the source and root of all monetary evil (is) the government monopoly of the issue and control of money.” (Von Hayek 1978: 23)

“When one studies the history of money one cannot help wondering why people should have put up for so long with governments exercising exclusive power over 2,000 years that was regularly used to exploit and defraud them.” (Von Hayek 1978: 33)

Von Hayek sees that it was government which had acquired the sole right to manage a nation’s money supply and which had consistently and continually abused that privilege to the detriment of the populace:

“...I do not think it an exaggeration to say that history is largely a history of inflation, and usually of inflations engineered by governments and for the gain of governments...” (Von Hayek 1978: 34)

Moreover to keep the populace in check the Government employed punitive force:

“Government’s could not, of course, pursue the people without the cruellest measures. As one legal treatise on the law of money sums up the history of punishment for merely refusing to accept the legal money:

‘From Marco Polo we learn that, in the 13th century, Chinese law made the rejection of imperial paper money punishable by death, and twenty years in chains or, in some cases death, was

the penalty provided for the refusal to accept French *assignats*. Early English law punished repudiation as *lese-majesty*. At the time of the American revolution, non-acceptance of Continental notes was treated as an enemy act and sometimes worked a forfeiture of the debt.” (Von Hayek 1978: 34-35)

The enemy was the state and although merchants made attempts at erecting a stable currency they were thwarted by absolutism. (Von Hayek 1978: 35)

Von Hayek’s rendition of monetary history is a very biased treatment that ignores the role that private banks - with right of issue and/or deposit creation - played in destabilizing the macroeconomy.

Von Hayek does not explain the money-creating powers of private banks and its consequence for currency debasement. Although he does acknowledge this capacity, he never accuses banks of exploitation and for defrauding a nation’s citizens.

Government’s have detrimentally affected nations’ monetary stability, and this has worked to their advantage as a means of exacting a hidden tax. To negate the possibility, however, that private individuals/corporations would not themselves pursue a similar course if it were available to them is to turn a blind eye to the historical evidence.

The history of fractional-reserve banking which can be traced directly to the practices of the goldsmiths in England, demonstrates that at its genesis it was purely the invention of the private sector. Their evolution into modern-style banks and their consequential financial practices was attended by cyclical monetary upheavals. These circumstances prompted the great monetary debates of the 18th and 19th centuries.

Rather than accuse government for the long history of inflations, it is more accurate to cast the major portion of blame upon the money-creating powers of the private sector. This is not to say that government had some responsibility itself for the financial upheavals. For instance, the Bank of England which was erected as a competitive bank to Lombard Street, and chiefly to supply the government with a cheap source of loans, did add to the problem. Nevertheless, eventually after successive monetary upheavals and much debate, the British Parliament did attempt to curb the financial fluctuations by limiting the supply of paper money. This was a valid initiative with the best interests of the nation at hand which in the end was thwarted by the private banks practice of deposit-creation and use of cheque facilities.

In the end, it is better to cast blame both at the feet of government and the private sector in their capacities to create money *ex nihilo* and unfettered. Once this right is abolished, whoever possesses the power to exercise it, then and only then will monetary and financial stability have a chance to be secured.

Money Creation

Von Hayek's brief presentation on the origin of paper money is focused upon the European developments - although he doesn't cite actual events and locations - rather than the English experience, the latter being the direct historical antecedent to modern financial systems.

“The government prerogative, which had originally referred only to the issue of coins because they were the only kind of money then used, was promptly extended to other kinds of money when they appeared on the scene. They arose originally when governments wanted money which they tried to raise by compulsory loans, for which they gave receipts that they ordered people to accept as money. The significance of the gradual appearance of government paper money, and soon of bank notes, is for our purposes complicated because for a long time the problem was not the appearance of new kinds of money with a different denomination, but the use as money of paper claims on the established kind of metallic money issued by government monopoly.” (Von Hayek 1978: 31)

There were government sponsored banks erected in various European countries that predated the English experience, however, every one of these institutions failed. The essential reason for their demise was their issue of paper currencies over and above reserves of metal currencies while

maintaining immediate convertibility. (Wicksell 1935: 74-75) Extreme secrecy was required because the result of the populace becoming aware of the fractional-reserve basis to the government-sponsored bank was always the same – a run which ensured the collapse of the bank. It is for this reason that a government-sponsored bank was not embraced in England until it proved absolutely necessary when the goldsmith-bankers would not extend desperately needed loans to the government. And, just as had occurred on the Continent, the Bank of England within a few short years was found to have augmented note issues way beyond the reserves on hand. What is surprising above everything else, is that the Bank of England survived and did not fail as did its European counterparts. In spite of clear evidence of insolvency, the British Parliament allowed the Bank of England to continue to trade while permitting it to suspend the payment of specie.⁵⁵

The English experience reveals that the invention of paper money – which proved to be the model for modern currencies - did not occur at the hands of government but instead by the private sector. The goldsmiths issued bailee notes in receipt of merchant's gold that was placed for safe-keeping. These bailee notes evolved to specific promissory notes and finally to non-specific notes that promised payment 'to bearer' upon demand. The goldsmiths issued these notes as loans with no direct balancing deposit of hard currency, thereby operating on a fractional-reserve basis.

⁵⁵ An account submitted to the House of Commons on 4 December 1696, some four and a half months after the declaration of the suspension, revealed total notes outstanding amounted to £764,196 with a paltry £35,664 in cash.

The courts understood the potential for fraud afforded to the goldsmiths, and would not give legal credibility to the goldsmiths' notes. Their objection was eventually overturned by Parliament, which in its Act of 1704 granted legal sanction by decree to the Bank of England, and simultaneously granted legal sanction to the assignment of privately issued goldsmith notes.

Competing Currencies

Von Hayek's solution to solve the problem of inflation and macroeconomic instability, was to wrest the provision of money from government and permit private competing banks to issue their own certificates or notes through "short-term loans or sale against other currencies", the value of which was to be held constant according to a "commodity reserve standard".⁵⁶ (Von Hayek 1978: 47-48)

However, there are some important objections that can be raised:

1. Historical periods in which competing currencies were supplied by financial institutions are characterised by extreme volatility. Chief amongst those are the 'wild-cat' banking days in the United States, the

⁵⁶ Other members of the Austrian School have been critical of "index number standards". (See Polleit 1995)

English financial system from mid 17th century to mid 18th century, and the Scottish financial system from early 18th century to mid 19th century.⁵⁷

2. He argues that the populace would be quick to respond to movements of the value of currencies, forcing banks to regulate the issue of their money to ensure a constant value. The transactions costs of constant vigilance and of switching between currencies may prove to be of such a magnitude that significant movements in the value of currencies would still occur. In other words, the same reasons the Law of Reflux failed in the past would remain.

3. Banks always have had a propensity to expand their monetary issues. Whatever legislation has been enacted to contain the growth of monetary aggregates, it was inevitably circumvented by new contrivances. Financial innovation permits banks to stay one step ahead of authorities. There is no guarantee that von Hayek's competing currencies would hold banks in check anymore than previous supervisory controls over banks attempted to achieve in the past. The business of banks is to create money and extend loans for profit. Banks have and always will, while they possess the capacity to create money, seek every opportunity to expand their loan portfolio. The history of modern banking is replete with substantial

⁵⁷ Despite claims by Lawrence White (1984) that the Scottish system of competitive note issue provides ample evidence of the benefits of competitive money issue, Rothbard has cast serious doubts on White's assertions. Reference to White was made by Professor G. E. Wood in the preface to von Hayek's Third Edition of *Denationalisation of Money* (p19).

financial collapses, and the lessons of these periods have never served to hold banks in check.⁵⁸

CONCLUSION

NME literature has grown out of seminal works which fell short in crucial aspects. Black and Fama ignored the money-creating power of banks, building their ideas solely upon the premise that the function of banks is only financial intermediation. In their opinion, banks are institutions that merely aid the conversion of real savings by some into expenditures by others. They denied the possibility that banks could augment funds available for expenditure autonomously and so impact the macroeconomy.

Von Hayek, on the other hand, castigated government for detrimentally affecting the macroeconomy through unwarranted monetary expansion, when government possessed the power to create a nation's money stock. And yet turned a blind eye to the power possessed by banks to do exactly the same thing as government i.e. to debase the nation's money supply. His oversight has created a schism within the Austrian school whereby some argue that von Hayek must have meant that 100 per cent reserves had to be incidentally enforced whereas others claimed he did not. (Markovitz 1988)

⁵⁸ Additionally, if von Hayek's banks were subject to basic corporate law and permitted limited liability, it is likely that the reduced risk of default would encourage banking boards to engage even more in unwarranted expansionary policies.

Thus Black, Fama and von Hayek built their respective theories upon only half-truths. Consequently, NME proposals for free-banking do not pay due regard to the ability by private institutions to create money *ex nihilo* - or any instrument of purchasing power that circulates as a medium of exchange – and overlooks the consequences of the employment of that ability for macroeconomic instability. It was these consequences that were highlighted by Walras and others, who emphasized the money-creating power of banks, and identified it as the principal cause of macroeconomic instability.⁵⁹

⁵⁹ Of course, their arguments would apply also to unwarranted monetary expansions by government, in the vein of von Hayek. However, government was not the principal target of their criticism because they understood that it was the banks who were chiefly responsible for inappropriate manipulations of the money stock.

CHAPTER 5

THE MONEY MARKET

1. INTRODUCTION

The current orthodoxy defines a framework of the money market which arguably deflects enquiry into financially driven macroeconomic disturbances and inhibits the proposition of Walras and others from being accepted. Certain conceptual difficulties associated with the conventional structure of the money market lead to the inability of macro-theory to adequately explain debt/asset-price cycles, and provide remedies.

In particular, the central role of the money market in macro-theory - Keynesian and Classical streams - is solely to facilitate the conversion of savings into investment. Banks are the financial intermediaries that pool the funds of savers and make those funds available to investors. However, the function of banks is much more than that which that orthodoxy is founded upon. They do not solely perform the role of financial intermediaries passively assisting macroeconomic equilibrium determination, they are also the purveyors of new money which is injected into the macro-economy and so actively impacting equilibrium determination with profound consequences. Accordingly, this money-creating ability of banks should be given emphasis in

the constitution of the money market. Once this is achieved, the argument of Walras and others is readily demonstrated.

2. TRADITIONAL ROLE OF MONEY MARKET VERSUS MONEY-CREATION FUNCTION OF BANKS

There are two distinct schools of macroeconomic thought that have dominated economic thinking in the West from the 1960s through to the present. As defined by Colander (1986) they are the 'Keynesian Activists' and the 'Classical Nonactivists'. Although neither group is homogenous, it is possible to discern certain principles as they are applied to macro-theory and the role of banks, by examining core elements of the two schools of thought.

The Key Role of Savings and Investment

In Classical macro-theory the conversion of savings into investment was achieved via a market mechanism with the rate of interest being the price:

“Classical economists saw the savings and investment markets (the real sector) as the primary determinants of the interest rate. That interest rate then fed back to the financial sector, but the feedback was of secondary importance and was not part of their formal model.”

(Colander 1986: 159)

In Classical analysis, the equilibrium rate of interest enabled the leakage of savings from the income stream to be converted into investment expenditures, thereby ensuring macro equilibrium at full employment. By implication, banks acted purely as financial intermediaries and provided the market to establish the equilibrium rate of interest.

In traditional Keynesian analysis, savings was made primarily a function of income, and investment, though effected by the cost of borrowed funds, was principally governed by 'animal spirits'. Therefore, investment and savings decision were aligned by achieving a level of output that matched savings with an autonomous level of investment. The financial sector was therefore not brought into equilibrium via the rate of interest as in Classical theory, but rather via the total level of output and income. The money market which determined the equilibrium interest rate was accorded a secondary role, whereby that rate was merely fed back into the investment function. Macro-equilibrium was achieved largely independent of the money market:

“[Keynes] argued that the interest rate was primarily determined in the financial sector (the money market), and the equilibrium interest rate was the interest rate which equated the supply and the demand for money. Rather than believing the real sector determined the interest rate, Keynes thought the financial sector determined the interest rate, forcing the real sector to adjust.” (Colander 1986: 159)

Therefore, in Keynes's view, while the money market established an equilibrium rate of interest, neither savers nor investors who used borrowed funds for real purposes i.e. purchase of plant, machinery, equipment and stocks (as opposed to investors who buy and sell bonds) appeared in that market.⁶⁰ The money market he constructed comprised a supply of money which was exogenously determined by the monetary authorities, and a demand for money which was determined by 'liquidity preference'. Rousseas writes

“...Keynes also assumed, along with everyone else, that the *supply* of money was exogenously determined”. (Rousseas 1986: 29, emphasis in original)

Therefore, by implication savings again must be converted into investment with the help of banks acting as intermediaries. Banks performed only a facilitator function and were passive agents not directly impacting the supply of money nor, therefore, the equilibrium rate of interest.

Keynes explicitly discounted the notion that banks could affect the real economy through money (or as he called it 'credit') creation in the General Theory:

⁶⁰ See Leijonhufvud (1981) and Kohn (1981)

“The prevalence of the idea that saving and investment, taken in their straightforward sense, can differ from one another, is to be explained, I think, by an optical illusion due to regarding an individual depositor's relation to his bank as being a one-sided transaction, instead of seeing it as the two-sided transaction which it actually is. It is supposed that a depositor and his bank can somehow contrive between them to perform an operation by which savings can disappear into the banking system so that they are lost to investment, or, contrariwise, that *the banking system can make it possible for investment to occur, to which no saving corresponds....*

The notion that the creation of credit by the banking system allows investment to take place to which 'no genuine saving' corresponds can only be the result of isolating one of the consequences of the increased bank-credit to the exclusion of the others....

Thus the old-fashioned view that saving always involves investment, though incomplete and misleading, is formally sounder than *the new-fangled view that there can be saving without investment or investment without 'genuine' saving.*” (Keynes 1936, italics added)

Harrod clarified Keynes' position, that banks were merely passive agents in the savings-investment process, in no uncertain terms:

“As lenders the banks are hopelessly and irretrievably in the position of middlemen. They can only lend what is lent to them...The banks are

mere conduit pipes. They have no power of making the saving available for use in investment greater on any day than the amount people are choosing to save.” (Harrod 1936: 143)

This position did not go immediately unchallenged and a foremost critic was Robertson, whose work in this regard is known under the title of the ‘loanable funds theory’. Robertson argued the converse that banks could indeed expand the money supply without the need for savings, and explicitly incorporated into his theory the endogeneity of the money supply. (Loanable funds theory is discussed more fully later.)

Consequently, while Keynes linked the monetary sector with the real sector, he did not incorporate the full extent of banking practice. Despite the fact that Keynes wanted to dispel belief in the Classical principle of the existence of a dichotomy between the real and monetary sectors, based upon an interpretation of the Quantity Theory of Money, his analysis was therefore incomplete. (Rousseas 1986: 30-31) The crucial point is that Keynes employed an exogenous money supply and so he did not incorporate the role of banks as creators of new money to influence output and income.

In neither of the schools of macro-theory, therefore, was the role of banks as creators of money either explicitly or implicitly incorporated. This role was entirely ignored, and although both schools permitted a market framework to determine an equilibrium rate of interest, banks did not directly influence that rate or real expenditures by their ability to manufacture new money.

Evolution of Macroeconomic Schools of Thought

The core doctrine of the two schools regarding the role of banks remained intact throughout the latter half of the 20th century, despite vigorous macroeconomic debate and voluminous literature. The money supply in general continued to be portrayed in macro and monetary theory as being exogenously determined, with the noted exception of Kaldor. He argued conversely that it was endogenous specifically because of the role of banks as creators of money - his ideas are examined below. Arguments between adherents of the two schools focused upon differences of opinion over the stability versus instability of the demand for money. (Colander 1986: 165-171)

The Monetarists comprised the dominant branch of the Classical school during the academic debates of the 1960s and policy debates of the 1970s. They accepted a stable demand for money function and attributed macroeconomic instability to money supply causes. The money supply remained exogenous and determined by authorities. They laid the blame directly upon errant monetary policy, not the institutionalized nature of money creation by the private sector. (Colander 1986: 289-292)

Despite the Monetarists' demise, due in part to the failure of governments and central banks to control monetary aggregates, money creation by banks remained a peripheral issue and was not incorporated into the mainstream

debate.⁶¹ The inability of governments to hold monetary aggregates to specified targets provided substantial evidence that the money-creating power of banks should be recognized and directly contained, however, this power was deliberately ignored by the Monetarists themselves for two reasons: first, they accepted the exogeneity of the money supply and attributed money supply changes only to government policy not to banks; and secondly, as Friedman stated he did not see it as a viable proposition to wrest that power from banks.⁶²

The evolution of the schools of macroeconomic thought into the New Classicists and New Keynesians, kept the demarcation lines of macro-disturbance causes essentially the same: in the former case, government interference; and, in the latter, coordination problems and real shocks. (Colander 1986: 443 and 315-374) This disregard to link macroeconomic vagrancy directly with banking practice, it is contended, was aptly demonstrated when the Governor of Australia's Reserve Bank acknowledged that the asset price boom and bust - fuelled by stunning debt/monetary growth - that ensued from the shift to a deregulatory financial framework was unanticipated:

⁶¹ The Austrian School, who were market libertarians like the Monetarists, as mentioned earlier, divided on the issue of whether to adopt free-banking or impose a strict 100% reserve rule. The Austrian school lies outside of mainstream thought.

⁶² Friedman says he remained always an advocate for 100 per cent reserves, however, this opinion was not actively voiced nor pursued by him. This policy is absent from Monetarist literature. Perhaps a hidden reason is that its acknowledgment would have forced the adoption of an endogenous money supply which, as Kaldor observed, undermined the whole foundation for Monetarist doctrine (see pp13, 19 and 128).

“Most of the complaints in Australia about financial deregulation concerned events that happened in the transition period between the old regime and the new. We should concede that in this phase there were *unforeseen consequences* in the form of an asset price boom and bust.” (Macfarlane 1995: 12, emphases added)

International Financial Theory

Similarly, the basic reason given for the availability of international capital, in international financial theory, is that savings by some nations are channeled via financial institutions to other nations requiring (investment) funds above their own domestic savings. Debtor nations are supposedly balanced by creditor nations. Total world investment should be equal to total world savings, provided international funds markets are free. Efficiency arguments focus on the allocation of real savings, driven by unfettered market forces. Again, the influence of banks through their capacity to augment the money supply is ignored in the literature. It seems reasonable to infer that the legacy of the Classical/Keynesian paradigms also firmly influences this field of investigation.

In a completely analogous way, the supply of international funds can be enlarged *ex nihilo* by international financial institutions. Individuals, firms and governments borrow newly created funds from overseas institutions

generating capital inflow. That flow is *not* real savings but additional funds created *ex nihilo* via balance sheet entries. A good example is the Eurocurrency markets in which loans, denominated in foreign currencies (normally \$US), are created by European banks without those banks holding any reserves of that currency i.e. they operate upon a zero-reserve basis. Hence, the capital accounts of world economies can move positively in concert. Total foreign debt positions of the world's economies can rise in exactly the same way to that of national borrowings in a domestic economy.

3. INELASTIC VERSUS ELASTIC MONEY SUPPLY

In both schools of macro-economic thought, as defined by the principal architects and most subsequent adherents, the supply of money is treated as if it is under the control of the authorities. Thus the orthodoxy is that the money supply is inelastic with respect to the rate of interest, and this produced a particular policy framework and policy practices. Rousseas writes:

“It is the futility of trying to control a money supply seen as an exogenous entity that has contributed to the debacle of postwar economic policy and the struggle between neoclassical Keynesians and monetarists. Both the discretionary use of monetary policy (favoured by neoclassical Keynesians) and the mechanical application of a monetary rule (championed by Milton Friedman and his followers)

share a common assumption – that the money supply is *exogenously* determined.” (Rousseas 1986: 63)

The noted exception is Kaldor who posited an endogenous money supply which, as claimed by Rousseas, “many Post Keynesians have accepted uncritically” (Rousseas 1986: 63). Nevertheless, it remains a side issue to Post Keynesians because their emphasis has been upon coordination problems and real shocks. (Rousseas 1986: 78) The legacy of Keynes upon the school to focus upon the real economy and dismiss financial causes - and that he himself employed an exogenous supply of money - perhaps is pervasive. Certainly, it has not been integrated as a key element of Post Keynesian thought.

Rousseas cites both Weintraub and Kaldor as hypothesizing endogeneity. (Rousseas 1986: 73-98) Weintraub’s formulation based upon his wage theorem does not rely, however, on banking practice *per se*. Its mechanism is strictly political whereby governments permit an expansion of the money supply, via central bank intervention, to accommodate demands for higher money wages while keeping unemployment low. Consequently, the supply of money continued to be controlled by authorities per convention and therefore implicitly independent from banking practices. As Rousseas put it, in Weintraub’s schema “Endogeneity, in effect, becomes a form of closet exogeneity!” (Rousseas 1986: 74) Therefore, Weintraub’s formulation is not

examined here because it does not deal expressly with the power possessed by banks to create money *ex nihilo*.

Rousseas also misinterprets Kaldor. Rousseas relates that Kaldor justified endogeneity because of the central bank's responsibility to guarantee the stability of the financial sector and its commitment not to refuse the provision of cash to the banks via the discounting of bills. (Rousseas 1986: 78) Whilst Kaldor did make this point, his principal justification was the existence of what he called "credit money" and banks' power to freely invent it.⁶³ It is the mechanism of money creation through balance sheet entries which is the key feature of banking, and produces the endogenous nature of the money supply. Although cash requirements satisfied via bill discounting is an important element of the overall banking system - lowering the risk to banks and ensuring their survival - it is not the principal engine of 'credit money' creation. Even if the central bank did not discount bills, the money supply would remain endogenous. Banks would find ways to economize their cash reserves, through financial innovation, in order to extend 'credit money' and satisfy the demand for money. For example, the British banks did just this in an earlier period in order to circumvent the effects of note issue restrictions imposed by the Act of 1844.

⁶³ See Kaldor 1985: 47 regarding central bank intervention and 1985: 22-24 regarding credit-money.

Kaldor, writing in criticism of Monetarism, noted the importance of the exogeneity of the money supply in the Monetarist schema, and how the reality of an endogenous money supply in a 'credit money' system destroyed the Monetarist argument:

“Friedman’s emphatic reassertion of the quantity theory of money – based on a stable *demand* function for money or a stable velocity: the two come to the same thing – was crucially dependent on the quantity of money being really exogenous, determined by the fiat of the monetary authorities quite independently of the demand for it....[A] theory of the value of money based on a commodity money economy ...is not applicable to a credit-money economy. In the one case money has an independent supply function, based on production cost, while in the other case new money comes into existence in consequence of, or as an aspect of, the extension of bank credit.” (Kaldor 1985: 22, italics his)

Kaldor also disputed Hicks’ IS/LM analysis, which incorporated an exogenous money supply, declaring that it had given rise to “endless complications and false conclusions”. (Kaldor 1985: 23)

Kaldor argued that

“in the case of credit money the proper representation should be a *horizontal* ‘supply curve’ of money not a vertical one. Monetary policy is represented *not* by a given quantity of money stock but by a *given rate of interest*, and the amount of money in existence will be demand determined.” (Kaldor 1985: 24, italics his)

Kaldor’s way of portraying the supply of money effectively captures the role of banks as creators of new money. Only in the situation where banks sole function was intermediation (and savings arose out of a fixed stock of money), and they were not purveyors of new money, would the money supply be appropriately represented as exogenous. This is clearly not the case in the present ‘credit money’ system, to use Kaldor’s term.⁶⁴

The endogenous nature of the money supply is inextricably linked to the principal business of fractional-reserve banking. Simply put, banks create money and lend it out for profit. They automatically satisfy the demand for money. Because the smaller the fraction of their reserves the higher the profit, banks have a strong propensity to reduce reserve ratios in order to secure higher profits. This is consistent with the high rates of growth in the money supply generally observed outside of recessionary periods. Moreover, when controls were enacted which effectively impinged upon certain bank instruments, banks invented new instruments in order to escape the controls, and satisfy the demand for money. The classic example is the employment of

⁶⁴ The equivalent terms used throughout this dissertation is bank-money or debt-money.

deposit creation and cheques to avoid the restrictions on note issues imposed by the English Parliament in the mid 18th century. (Conant 1927: 95) More recently, in the Australian context, during the 60s and 70s supply and price restrictions were circumvented by channeling funds through NBFIs. (Lewis and Wallace 1997: 12) Prior to 1988, capital ratios were evaded by off-balance sheet activities. From 1988 until the present, while the Basle Committee capital adequacy measures brought off-balance sheet activities within the gamut of capital controls, banks were again able to effectively get around the restrictions, this time by employing loan securitization. (Carew 1998: 77)

The endogenous nature of the money supply makes notions of the velocity of money completely redundant. In this regard, Rousseas quotes the Radcliffe Committee as having come to the conclusion that: “[W]e cannot find any reason for supposing, or any experience in monetary history indicating, that there is any limit to the velocity of circulation of money”. Rousseas regarded this conclusion “the most important statement in the entire report, the full implication of which the committee failed to grasp” and reasoned that what “the Radcliffe Committee, had argued, although not saying so explicitly, was that the money supply was endogenous, and being so not subject to control by the monetary authorities...[and] represented the complete repudiation of a conventionally conceived monetary policy acting on a presumably exogenous money supply”. (Rousseas 1986:69-70)

The endogenous nature of the money supply is also revealed and sustained by the responsibility of a central bank to maintain stability in the financial system. It fulfils this obligation by being the 'lender of last resort'. The central bank must always stand ready to supply cash of any amount required by the banks. In a fractional-reserve banking system that uses as its reserves notes issued by a central bank, the central bank will always provide sufficient cash to support the volume of bank-created deposits. If the central bank refused to accommodate requests for cash it could threaten the viability of the financial system, because the solvency of banks would immediately be called into question. Kaldor writes in the English context:

“...the (Central) Bank cannot *refuse* the discounting of 'eligible bills' rendered to it by the discount houses. If it did by setting a fixed limit to the amount which the Bank is prepared to discount on a daily or a weekly basis (in the same way a box office of a theatre is willing to sell a fixed number of tickets for a performance) the Bank would fail in its function as 'lender of last resort' to the banking system which is essential to ensure that the clearing banks do not become insolvent because of a lack of liquidity. Precisely because the monetary authorities cannot afford the disastrous consequences of a collapse of the banking system, while the banks in turn cannot allow themselves to get into a position of being 'fully stretched', the 'money supply' in a credit-money economy is *endogenous*, not *exogenous* – it varies in direct response to changes in the public 'demand' to hold cash and

bank deposits and not independently of that demand.” (Kaldor 1985: 47)

Rogers and Neal (1994), writing in the Australian context, similarly posit the endogeneity of the money supply by examining and enlarging on the role of the central bank. In the post-deregulatory system, Rogers and Neal argue that the money supply is endogenous *ipso facto*, because the authorities expressly used the rate of interest as the monetary policy instrument, and allow the money supply to expand or contract to meet the demand for money at the established rate of interest:

“With the authorities now explicitly using interest rates as the instrument of monetary policy, any change in the demand for money will be accommodated at the prevailing interest rate in the absence of an explicit change in monetary policy. Given a stable demand for money schedule the Reserve Bank can either set the quantity of money or it can set the interest rate; it cannot set both the quantity of money and the interest rate. Because the Reserve Bank seeks to bring about a particular interest rate outcome, it must accept the money supply outcome consistent with money demand at its chosen rate of interest. That is, the money supply becomes endogenously determined by the demand for money.” (Rogers and Neal 1994: 277-278)

They argue further that even prior to deregulation it was doubtful that the money supply was able to be controlled by authorities citing the admission of the Reserve Bank in 1985 that “the supply of money base was better regarded in the short run as demand-determined”. (Rogers and Neal 1994: 276) It was generally believed that the money supply was exogenous because central bank authorities possessed the ability to control the supply of money via manipulations of the money base. The conventional theoretical construct was that authorities could independently choose the volume of the money *base* and therefore configure all of the monetary aggregates. Rogers and Neal argued conversely that the money base was itself endogenous, unable to be controlled by the authorities, and therefore the money supply *per se* was also endogenous.

Rogers and Neal gave four reasons to justify their assertion that the money base was endogenous prior to deregulation:

1. The largest component of the monetary base was bank reserves of cash and the practice of the RBA was always to accommodate changes in the banks' demand for currency. The RBA never denied requests for additional cash by banks. Banks cash reserve requirements were therefore always easily and readily met by the printing machines at the Mint. The pyramid of loans built upon the fractional-reserve of cash was thereby never contained.

2. The process of meeting required statutory reserve deposits (SRDs) – the other component of the money base - was on a *post* basis. Bank deposits in the previous month determined the level of SRDs in the current month. This meant, in practice, SRDs were driven by bank deposits rather than vice versa, so again, the money base was endogenous. Rogers and Neal, in connection with this point, made the following observation

“The Reserve Bank could not, in the short-run, withhold base money but only affect the price at which it was made available. The stability of the banking system could otherwise have been threatened.” (Rogers and Neal 1994: 277)

Therefore, despite setting the level of SRDs, the authorities were always beholden to supply sufficient cash to the banks to meet those requirements. SRDs were therefore an impotent policy tool.

3. Even disregarding the above two points, if the authorities raised SRD ratios, banks could easily meet the additional requirements through drawing upon their excess holdings of liquid assets and government securities (LGS).
4. Monetary policy, in the absence of capital controls, was rendered ineffective through international capital flows. For instance, if

authorities attempted to reduce the rate of growth of the money supply causing interest rates to rise, this would induce foreign capital inflow and obviate the intent of the policy.

In addition, the experience of monetary policy in the latter half of the 20th century, also lends support to the proposition that the supply of money is elastic rather than inelastic. Monetary targets were abandoned prior to deregulation because it was recognised that authorities were incapable of fixing the money stock. Despite explicit attempts to contain the growth of monetary aggregates, those attempts were manifestly ineffective. The money stock growth could not be restrained by the direct methods that were employed, and those methods have now been abandoned. Authorities now set official interest rates in order to massage the spectrum of rates offered by financial institutions, and so affect the quantity of money which in turn is designed to achieve inflation targets.

In conclusion, the elastic nature of the money supply needs to be adopted into mainstream thought and its ramifications for macro-theory and practice given proper due.

4. LOANABLE FUNDS THEORY

Keynes' liquidity preference theory was hotly contested for many decades by proponents of the loanable funds theory, and the debate has never been

resolved. (Leijonhufvud 1981, Maclachlan 1993, Bibow 2001) One important difference is that while liquidity preference theory is built upon the assumption of an exogenous money supply, loanable funds theory explicitly allows for an elastic money supply accommodated through the action of the banking sector.⁶⁵ Robertson, the originator of the theory, regarded the principal element of the money supply to be bank deposits and argued the capacity of banks to expand the money supply through the issue of loans, without recourse to some multiplier effect or base money/reserve hindrance. (Robertson 1928)

Employing the nomenclature of Tsiang (1980), the components of the demand (D) and supply (S) for loanable funds are as follows:

D1 – expenditures on new investment projects by firms (fixed and working capital)

D2 – expenditures on maintenance and replacement of existing capital stock

D3 – additions to idle balances held as liquid reserves

D4 – expenditures on consumption items by households

S1 – savings (defined as excess of income over planned current consumption)

S2 – depreciation of fixed and working capital (allowed for out of gross sales from previous time period)

⁶⁵ The distinctions between the two theories in the literature tends to be focused more on the demand for money side rather than the supply for money. (Tsiang 1980)

S3 – release of funds from previously held idle balances

S4 – money creation by banks

Thus the equilibrium condition can be specified as follows:

$$D1 + D2 + D3 + D4 = S1 + S2 + S3 + S4$$

And rearranging:

$$[D1 + D2 + D4 - (S1 + S2)] + (D3 - S3) = S4$$

Where $[D1 + D2 + D4 - (S1 + S2)]$ is the total funds the community requires to meet current transaction costs and $(D3 - S3)$ is the net change in idle balances desired by the community.

The endogeneity of the money supply is implied in this equation if it is interpreted that banks possess the means and desire to create additional money ($S4$) to meet the financial needs of the community $\{[D1 + D2 + D4 - (S1 + S2)] + (D3 - S3)\}$.

It should be stated, however, that traditional loanable funds theory is typically presented with normal sloped supply and demand functions, in order to determine an equilibrium rate of interest. It is arguably more correct that if, as the simple algebra implies any shortfall of the supply of loanable funds from

existing funds can be made up by money creation by banks (and banks possess this capability irrespective of the interest rate level), then the supply curve for loanable funds should be portrayed as perfectly elastic.

5. CONCLUSION

Current macro-theory is deficient in providing an adequate explanation for asset-price and debt cycles. It is the argument of this thesis that this shortcoming is due to the separation of the money creation process from macro-theory. The fractional-reserve system together with the money multiplier are generally treated as a separate and distinct subject in standard texts, without integrating them into a model of the macro-economy, with the exception of Rogers and Neal. Their analysis, however, is limited to deriving a perfectly elastic LM curve under the conditions of an endogenous money supply, and reiterating William Poole's conclusion that the central bank should control interest rates, not the money stock, when macroeconomic disturbance arises from an unstable money demand.

The convention remains that the role of banks in macro-theories is solely to facility the conversion of savings into investment via the money market. Standard macro-theories do not pay due regard given to the money-creating function of banks. The need to overcome this lack is more pressing in light of the deregulation of the domestic financial system, and the trend towards the

globalisation of the world's financial markets. A paradigm shift in monetary theory is arguably necessary to properly understand and correct debt and asset-price vagaries, and deal adequately with international financial fragility.

CHAPTER 6

ASSET-MARKET BUBBLES

This chapter critically examines the literature on asset-market bubbles, and assesses it against the theory of Walras and others. The first part canvasses the discussion on what action, if any, authorities should take to mitigate asset-market bubbles. The second part looks at the theories that have been devised to explain these types of bubbles.

PART 1: POLICY RESPONSE TO ASSET-MARKET BUBBLES

1. INTRODUCTION

The recent examples of cyclical experience canvassed in Chapter 2 have attracted a substantial amount of enquiry. Obvious questions such as why these boom/bust episodes are occurring and how might the problem be appropriately addressed are being examined by many and a rich literature is emerging. That literature primarily is grouped under the theme of the policy response to asset-market bubbles.⁶⁶

⁶⁶ Contributions to that body of literature include, amongst others, Bernanke and Gertler (1999), Goodhart (2001), Kent and Lowe (1997) Frank and Browning (2001), Kaufman

This chapter first discusses the relevance of the recommendation of Walras and others which remains, at this stage, off the radar. Secondly, it provides a background to the debate and considers the implications of the Walrasian view. Thirdly, it classifies the contributors in the field into three broad categories - those who advocate (1) no policy response, (2) interest-rate adjustments (3) regulatory measures. And finally, it argues that the measures that are proposed by some are insufficient to adequately contain the problem, concluding that the only certain means is the initiative proposed by Walras and others.

2. THE RELEVANCE OF WALRAS

The thesis of Walras and others can be applied to the recent experiences of asset-price booms and busts and their attendant problems. That thesis, in its general form, projects that all markets are influenced by the expansion of the money supply sourced from banks. Consequently, all prices should trend upwards until a crisis eventuates and all prices will subsequently fall back as the bubble deflates.

Given the right conditions, however, it is conceivable that monetary growth sourced from the banking sector can affect particular markets, forcing up

(1998), Bordo and Jeanne (2001), Schwartz (2001, 2003), Carmichael and Esho (2001), Bordo, M.J. Dueker and D.C. Wheelock (2002) Cecchetti, Genberg and S. Wadhvani (2002) Bell and Quiggin (2006)

prices in those markets, whilst prices in other markets remain benign. It is quite possible that asset markets are influenced by monetary growth whilst prices for consumer goods remain flat.

This scenario has been evident throughout much of the industrialized world in recent decades. The markets for consumer goods has been impacted by the emergence of cheap suppliers in Asia and the sub-continent, technological development and trade liberalization. As well, central banks in general have adopted the mandate to target an index of consumer prices, holding it within a stipulated band.⁶⁷ Consequently, consumer prices have remained very steady. On the other hand, asset prices have risen strongly on the back of high rates of monetary growth and debt levels.

The growth in asset prices has in many instances produced overheated market conditions and consequential downward revision of those prices. Most OECD countries encountered boom/bust cycles, the severest experienced by Japan and Scandinavia. (Allen and Gale 2000)

The key characteristics of these episodes has been the rapid growth of monetary aggregates, debt levels and asset prices followed by a fall-out. This accords with the basic proposition of Walras and others.

⁶⁷ Some analysts argue that the success of the central banks to hold inflation in check has produced the very conditions conducive to asset price hikes. – see for example Borio and Lowe 2002

3. OVERVIEW OF THE DEBATE

The episodes of asset market bubbles are attracting increasing attention by monetary policy theorists and practitioners, and the topic is now at the forefront of policy debate.⁶⁸ Financial imbalances are of particular concern because when the eventual crisis hits, it can lead to deep recessions or depressions. In addition, such crises often produce endemic banking distress and the costs to Government of rescuing distressed financial institutions can be enormous. Estimates of recapitalization costs for crises experienced through the latter part of the 20th century range from 3.0 to 41.2 per cent of GDP, with the average being 17.4 per cent. (Macfarlane 1999: 35)

The period immediately following deregulation was characterized by marked movements in financial aggregates and asset-market bubbles. Despite the possible correlation between deregulation and macroeconomic instability, the

⁶⁸ A well known definition of a bubble is that proposed by Kindleberger: “a sharp rise in price of an asset or a range of assets in a continuous process, with the initial rise generating expectations of further rises and attracting new buyers – generally speculators, interested in profits from trading in the asset rather than its use or earning capacity” (P. Kindleberger, “Bubbles”, *The New Palgrave. A Dictionary of Economics*, J. Eatwell, M. Milgate and P. Newman (eds), McMillan, 1987.) It is implied in the notion of bubble that firstly, asset prices have deviated from the ‘fundamentals’ i.e. that which can be justified by the projected income stream from ownership of the asset and secondly, that the bubble must eventually burst, leading to a sudden and dramatic downward revision of prices. Elsewhere in this chapter, according to the common terminology adopted by the various authors, the same conditions of a bubble are referred to as ‘financial imbalances’ or ‘asset-price misalignments’. Specifically, Borio and Lowe (2002) define ‘financial imbalances’ as simultaneous rapid growth in credit (i.e. monetary aggregates) and asset-prices. (Detken and Smets (2004) also incorporate credit volumes with asset-prices in analyzing boom/bust episodes.) Much of the literature in this area, however, focuses solely upon asset-price movement analysis, and does not rigorously incorporate credit volumes. It is an argument of this thesis that it is axiomatic that given the nature of money and its source of supply in the present financial framework (i.e. predominantly debt-money) debt and asset-price cycles will tend to be coincidental.

literature earlier on in the period immediately following deregulation, largely downplayed any possible link.

The reason for the disregard, it is argued, is the constraint of current ideology. *Laissez faire*, or 'the efficient market hypothesis', is the guiding dogma and government regulation and control are denigrated. The liberalization of markets and market efficiency achieved by private competitive forces are the present vogue policies. Therefore, it is unfeasible to discover answers to current macroeconomic problems through regulatory means.

The Australian experience is instructive and representative. In the period just after deregulation and a corporate boom/bust, whilst it appeared *prima facie* that deregulation was the cause of that episode, most analysts were reticent to judge it in that way. Valentine summed up the view of those who held to a strict efficient market position well:

“Many problems which appeared to arise out of financial deregulation have their origin elsewhere..... The solution to these problems is to remove the distortions in the rest of the economy -- not to go back to a regulated and inefficient financial system.” (Valentine 1991: 400)

Macfarlane, Governor of Australia's central bank, adopted a slightly different approach. He acknowledged in 1995 that there was “a significant element of

truth in th(e) assertion” that the late 80’s early 90’s dramatic growth in credit and boom/bust in asset prices was attributable to financial deregulation in Australia, but considered it only a transitory phenomena between “the old and the new regime”. He described the experience as “unforeseen consequences” and due to the lack of experience in the banking industry. (Macfarlane 1995: 8, 12)

In his opinion, market participants required a period of time to adjust to the new deregulated framework. The boom/bust episode initiated by banking excess was not to be repeated and could be dismissed as a temporary aberration. The banking industry having now acquired sufficient information and knowledge from the lessons of that boom/bust cycle would not allow a similar pattern to eventuate. However, the astonishing growth of Australian household debt and housing bubble, and the emergence of private-equity trust buyouts in the share market, points to a very different conclusion.

Macfarlane himself, more recently, foreseeing the possibility of future financial crises in Australia appears to be shifting his stance and is now entertaining the idea of some form of future re-regulation of the Australian financial industry. In an interview he made these remarks:

“I think the really fundamental answer is, if they can’t sort them [financial crises] out, then the only ultimate answer is some form of re-regulation. I’m not for a minute thinking it’s going to happen in the next

decade. But I would not rule out the possibility that in twenty-five years, if we had a lot of bad experiences, and we go through another cycle, we must seek some very clearly thought out regulations.” (Bell 2004: 395)

It has been inadmissible under the present orthodoxy to contemplate that an unregulated financial industry produces worse outcomes than a regulated one. However, as Macfarlane’s comments demonstrate, the weight of recent evidence is forcing a rethink and to question that orthodoxy, and analysts are now moving away from a strict libertarian view. (Bell 2004: 399)

4. IMPLICATION OF WALRASIAN VIEW

Walras pointed out that the financial industry is unlike any other industry. According to Walras, market liberalization is beneficial in competitive markets for goods and services with the one exception – the market for the numeraire/money.

What is astonishing is that the lessons of earlier eras was overlooked when the financial sectors of the world were liberalized in the late 20th century. The very reasons why banks were originally encumbered with regulation and control was because of the severe macroeconomic disorder that nations experienced from monetary explosions.

The wealth of evidence attesting to money mismanagement during the course of the 18th, 19th and early 20th centuries – the period characterized by institutionalized *ex nihilo* money creation in its modern form - was disregarded when the move came to formulate the current deregulatory environment. The focus was upon the microeconomic efficiency gains that a deregulated system would encourage, with the financial intermediary role of banks in mind. The role of banks as purveyors of new money and the potential macroeconomic consequences were not considered.

The parallel of the 1920-30s with current experiences is striking. The Great Depression called into question the very capitalism that was so enthusiastically endorsed during the 1920s and again is now so dominant.

Although the depths to which economies plunged in the 1930's have not yet been reached, we have possibly entered another era of financial and economic disorder if the thesis of Walras and others is valid. This instability was stymied in the post-war construction period from 1945 to 1970, arguably because it was characterized by heavy regulation of the financial sector. The cyclical experience of the 18th, 19th and early 20th centuries has possibly begun again in earnest.

Walras and others contended that repeated macroeconomic boom and bust is a natural consequence of the modern banking system. Macroeconomic instability was the reason why banks were bridled with strict controls in the

post Depression era, and why it is foreseeable that regulation will be imposed again, if the social costs of the present regime become too high to bear.

5. THE POLICY DEBATE – TO INTERVENE OR NOT TO INTERVENE

Richards, in summarizing the papers and discussions of a conference held by the Reserve Bank of Australia (RBA) in 2003 on ‘Asset Prices and Monetary Policy’, considers that the debate concerning policy intervention to counter asset-price bubbles has shifted to the ‘middle-ground’, compared with two earlier polarized views. On one hand was the view that asset-markets should be ignored by authorities and on the other was the view that authorities should act pre-emptively employing monetary policy to avert asset-price bubbles. The position he regards as being settled upon is that

“monetary policy should not aggressively attempt to burst perceived asset-price bubbles, but should take account of asset-price fluctuations, to the extent that they provide information about the shocks affecting the economy, or have possible implications for output and inflation in the medium term, beyond the usual inflation-targeting horizon...” (Richards 2003: 51)

Although recent monetary policy action taken by the RBA demonstrates its position is indeed that put by Richards - in so far as it raised rates in light of

the perception that the domestic property market had reached a bubble status, slowing its increase (momentarily?) without bursting the bubble, and doing so despite CPI inflation being within its target range at that time - there remain great uncertainties concerning this type of policy framework. In particular, the identification and measurement of financial imbalances, the degree to which a central bank authority should respond to perceived asset-price misalignments, and what impact monetary policy has upon asset markets to affect better market and economy-wide outcomes. These difficulties may yet prove insurmountable for the 'middle-ground' practitioners.

Moreover, talk of the debate achieving a 'middle-ground' does not mean a consensus has now been reached. The debate is in its relative infancy and issues remain unresolved (Stevens 2003). An important alternate and obvious policy - though presently controversial because it breaks from the present orthodoxy - is also being flagged by several authors. Namely, the re-imposition of regulations and controls upon financial institutions.

In addition, the data on the impact of interest-rate policy upon asset-price hikes in the current deregulated regime is, of course, very recent and it is difficult to draw decisive conclusions whether or not monetary policy is an effective tool. The evidence from the US is that incremental adjustments to interest rates did not halt the stock-market boom of 1994-2000 (see Greenspan's comments below). The effectiveness of the RBA's attempt to quell household debt and the property market is yet to be fully tested.

The argument of Walras and others is that the general problem of repetitive economic cycles is largely the direct consequence of fractional-reserve banking. It is this practice that had to be addressed if such cycles were to be constrained. Anything short of a radical revision of banking practice that encompasses a 100% reserve requirement for demand deposits, and the wresting of money creation away from private banks, would not halt the experience of financial imbalances and their aftermath.

Because any near-term consensus that is reached would be unlikely to embrace these recommendations the experience of debt/asset-price cycles, if Walras and others are right in their assertion, will continue and any consensus is likely to be unsettled and prove ultimately ineffective.

It is easy to codify the positions of policy-makers and analysts because the policy responses, if advocated, are exhaustive being limited by the availability of just two instruments, regulatory measures and official interest rates. There is at present a three-way division. First, there are those who argue for no policy response. A second group advocate the use of monetary policy. And lastly, an emerging group who propose that re-regulation is the only viable solution to prevent the reoccurrence of asset-market bubbles.

Group 1: No Policy Response

The strict application of the efficient markets hypothesis forces the adoption of a no response stance to asset-market bubbles. The power of this hypothesis and its widespread application in the last three decades of the 20th century is self-evident. It is this hypothesis which undergirded and spurred on the moves to deregulate financial markets in the 1970s-80s. Consequently, this orthodoxy creates an inertia not to intervene in capital markets except to ensure prudential regulations are met.

This strength of free-market ideology appears most evident in the United States. The 'Washington consensus' which supports and promotes liberalized capital markets continues to exert considerable influence. (Williamson 2000) By reason of logic and the premise of market efficiency, governments or public agencies have simply no mandate to intervene in capital markets. Regulators have no better basis for decision-making than market participants. In the end, any overshooting will be self-correcting.

As argued elsewhere in this thesis, because banks function on the basis of the *ex nihilo* creation of money, i.e. the marginal cost of production is zero, the finance market is unlike any other market and therefore strictly lies outside of the efficient markets hypothesis. This point, however, is absent from the literature.

An advocate in this group, Greenspan, paints a very stark picture:

“It seems reasonable that no low-risk, low-cost, incremental policy tightening exists that can reliably deflate a bubble. But is there policy that can limit the size of a bubble and hence, its destructive fall out? From the evidence to date, the answer appears to be no.” (Greenspan 2002)

He bases this opinion on the US experience. He cites evidence that the Federal Reserve had successively raised US official interest rates over the course of the 1990s, but they had little or no apparent impact upon suppressing equity prices and the US stock market continued its inexorable climb.

A recession causing interest rate hike is not a feasible option so the result is that authorities are largely impotent to deal with bubbles and remain ready only to ease the burden of the correction when it occurs. There is no policy that exists which would halt financial bubbles.

Greenspan and such analysts believe that market vagrancy in the form of financially-induced bubbles must be accommodated. They have no solution and argue that boom/bust episodes are a natural working of the market system, and rely on the justification that markets perform better in allocating

financial assets than regulators. These economic episodes, to their understanding, must simply be accepted and endured.

Bernanke and Gertler (1999), pursue the same line as that put by Greenspan that policy should not respond to changes in asset prices. Their essential justification for this position is the problem of identification. It is impossible to determine whether asset-price inflation is the result of fundamental or non-fundamental factors, or a combination of both.

They also put two ancillary arguments: first, policy activism to correct a bubble carries a very real risk that once implemented could initiate a panic; and secondly, price stability and financial stability are mutually compatible goals. That a central bank which targets inflation, will produce as a by-product financial stability, because inflation and asset-price booms tend to be correlated, as is deflation and asset-price busts.

Bordo, Dueker and Wheelock (2002) and Schwartz (1998, 2003) also argue this last point, that monetary policy should be directed solely at price stability which, as a by-product, will prove beneficial for financial stability.⁶⁹

⁶⁹ Schwartz also proposes additional capital ratio restrictions for banks and therefore her ideas are examined in Group 3.

Group 2: Monetary Policy Advocates

In the face of the broad experience of nations with financial instability in the late 20th century, and the enormous costs associated with the crises resulting from the bursting of debt/asset price bubbles, many theorists and policy-makers of course find it very difficult to contemplate the thought of standing by remaining idle. The problem to these analysts both demands and justifies some response.

Central banks that carry a mandate with broader objectives than just meeting an inflation target could be charged with neglecting their duty if they chose not to act pre-emptively. Most countries in fact do require their central banks to manage not only inflation but other also a range of objects including full employment and financial stability. (Bordo, Dueker and Wheelock 2002)

The Bank for International Settlements (BIS) in its 2001 Annual Report argued that the liberalization of financial markets had created the conditions conducive to financial cycles. In order to manage the new order, and although admitting the identification of asset-price misalignments was difficult, the BIS advocated the sporadic use of monetary policy. (BIS 2001: 141)

Certain academics and practitioners had arrived at the same conclusion as the BIS condoning the employment of monetary policy to counteract financial imbalances. One influential paper that has attracted substantial attention is C.

Borio and P. Lowe, "Asset Prices, Financial and Monetary Stability: Exploring the Nexus" (2002), not least because the authors herald a potential predictor of financial bubbles.

Borio and Lowe contend for a policy regime under which the central bank acts to correct financial imbalances when circumstances warrant. They argue that a strict adherence to preserve monetary stability is insufficient because a low-inflation environment - the result itself of successful monetary policy - may induce the development of financial imbalances that when unwound produce significant economic cost. The build-up in inflationary pressures consequential upon a surge in credit, may first be felt in equity markets before impacting the markets for goods and services. Therefore, it is insufficient to strictly adhere to a policy rule that solely targets CPI movements.⁷⁰

Borio and Lowe downplay the use of prudential rules to combat financial instability. They are adamant that such rules cannot guarantee financial stability. Although they identify some useful measures they argue that their

⁷⁰ The dynamic of the build-up of financial imbalances in a low and stable inflation regime is a key element of their analysis. Conventional wisdom would indicate that such a regime should promote financial stability. Borio and Lowe stress, however, that financial imbalances will occur under these conditions for three reasons. First are the natural market forces of low-cost, optimistic assessment of risk, easy finance and consequential asset-price boom. Secondly, the success of a 'virulent' central bank authority produces a stickiness in wages and prices which masks the build-up of inflationary pressures despite an unsustainable increase in aggregate demand. Thirdly, that success translates into a favourable environment for authorities who need not intervene to tighten monetary policy despite the existence of pent-up demand, and that low-interest environment further enhances the build-up of financial imbalances.

implementation is fraught with difficulties.⁷¹ Borio and Lowe therefore justify their proposal to utilize monetary policy because the prudential framework, of itself, is insufficient to generate financial stability.

Borio and Lowe also make an attempt to construct a predictor of future financial distress, and so provide information and justification for authorities to act as they recommend. They utilize a composite index of asset prices (equity and property) and credit volumes which, when compared with long-term trends, can provide a lead indicator of crises. Their results show that they are able to predict 60 per cent of financial crises, over a three-year horizon.

Cecchetti, Genberg and Wadhvani (2002) also present a case for monetary policy action to correct asset-price misalignments. In particular, they argue that the identification problems are surmountable, and the measurement of misalignments requires dealing with the same type of forecasting uncertainties as any other forecasts made by authorities in their decision-making processes.

They stress that central banks should act to correct asset-price misalignments although this does not mean that they should target the level of asset prices. Also that action should be taken only when misalignments

⁷¹ These include “rules (built-in stabilizers) or discretionary adjustments in capital standards, provisions, collateral valuations and loan-to-value ratios, greater reliance on stress testing and a heightening of the system-wide focus in assessments of vulnerabilities”. (Borio and Lowe 2002: 21-22)

are evident, not when asset price movements are due to changes in fundamentals. Pre-emptive action on behalf of the authorities will, in their judgement, produce better outcomes for the macroeconomy.

Group 3 Re-regulation Advocates

The last category comprises analysts who consider monetary policy unsuitable to achieve financial stability and opt instead for re-regulation. They are at present the more controversial and in the minority opinion; no doubt because of the continuing influence of the efficient market hypothesis and the relatively short time since deregulation. They cannot altogether be dismissed, however, because of the extent of the problems already encountered and the continuing experience of credit and asset price surges.

Bell and Quiggan (2006) are advocates of re-regulation because they argue that monetary policy is incapable of successfully managing bubbles. They discount the use of monetary policy for four reasons. First, the difficulty of forecasting and the policy implementation lag. Secondly, the one instrument/one target rule requires that interest rates should be manipulated by authorities solely to achieve the single target of a CPI inflation rate.⁷²

⁷² To utilize monetary policy to target asset-price variance as well creates a policy dilemma . This type of multi-target scenario existed prior to the focused inflation-targeting regimes of the 1990s, and was most unsatisfactory. The inflation-only mandate adopted by central bank authorities overcame those difficulties.

Thirdly, the effectiveness of monetary policy to impact asset-price spirals is not certain. Fourthly, the political difficulties of raising interest rates.

The core element of their analysis is that the efficient market hypothesis fails because of the problem that investors' decisions can be formed upon an overly exuberant expectation of future profitability and unrealistic capital gains. Banks have the same information as investors and respond accordingly, permitting money growth to accommodate the apparent market opportunities. Hence, bubbles are a natural result of market outcomes.

Therefore, in their opinion, there exists a clear case of market failure and a *prima facie* case to impose regulatory devices to correct it. Moreover, there is strong evidence to support their position arising out of financial deregulation:

“...the central fact giving rise to the debate about asset prices and bubbles is that the volatility of asset prices has increased in the period of financial liberalization. It is now generally conceded, at least implicitly, that financial liberalization has produced greater volatility in asset prices and increased the extent to which financial markets generate, rather than moderate, macroeconomic instability.” (Bell and Quigan 2006: 21)

The efficient markets hypothesis is “violated” and there is no policy response in the current framework that can deal with the problem. They quote

Macfarlane who, when asked how authorities could deal with asset-price inflation, responded “I don’t know the answer...that is a huge problem”. (Bell and Quigan 2006: 19)

As they see it, the only viable option is to re-impose regulations that limit the growth of monetary aggregates in order to restrict the markets propensity to create bubbles. Therefore, the current orthodoxy which holds to the efficient market hypothesis must be revised. They recommend restrictions on financial innovation and qualitative controls to limit lending and inhibit over-heating.

Whether their proposals would achieve the desired result is questionable. Walras and others proposed that *ex nihilo* money creation should not be permitted by private institutions at all, in order to prevent financially-induced debt/asset-price cycles. Fractional-reserve banking according to their view must be abolished. Only when this is achieved will bubbles permitted and engendered by the inappropriate supply of new and additional funds, be subdued.

Anna Schwartz (2003) is included in this last category because she posits a marked change to capital-adequacy rules, which would impinge on the ability of banks to expand the money supply further in the face of asset-price misalignment. She argues that financial instability is caused by price instability which in turn is directly attributable to the lax policies of monetary

authorities.⁷³ Like the advocates cited in Group 1, she maintains that financial stability is the product of price stability, and central banks should concentrate solely on containing CPI inflation. Monetary policy should not be directed to either inflating (depressed) or deflating (over-extended) asset prices. Nevertheless, her concern is for the distress felt by financial institutions as a bust eventuates and recommends the use of variable capital requirements that increase with loan extensions collateralized by assets whose prices have risen, and decrease when the assets backing loans fall in value.

Kaufman (1998) also argues for increased capital ratios together with the implementation of the SEIR scheme ('structured early intervention and resolution) to overcome asset-price bubbles. SEIR involves the implementation of strict regulations that become more severe, the greater the degree of financial difficulty of a troubled financial institution. Carmichael and Esho discount Kaufman's argument for higher capital ratios, arguing that it is not costless and would likely lead to an increase in price for credit or a reduction in the availability of credit (Carmichael and Esho, 2001).⁷⁴ Also they

⁷³ "Both [borrowers and lender] evaluate the prospects of projects by extrapolating the prevailing price level or inflation rate. Borrowers default on loans not because they have misled uninformed lenders but because, subsequent to the initiation of the project, authorities have altered monetary policy in a contractionary direction. The original price level and inflation rate assumptions are no longer valid. The change in monetary policy makes rate-of-return calculations on the yield of projects, based on the initial price assumptions of both lenders and borrowers, unrealizable" Shwartz 1995, p24

⁷⁴ The authors' basic objective is to demonstrate the paucity of the examination of prudential measures recommended in the literature up until that time. They state "The existing literature is generally against the use of monetary policy to control or burst bubbles" and "The same literature is generally positive about using prudential regulation to respond to bubbles..." however "the case is based as much on the ineffectiveness and high cost of using monetary policy in this way as it is on a detailed analysis of how regulatory policy can achieve better outcomes at lower cost". (Carmichael and Esho, 2001: 6-7)

note SEIR is not universally accepted and that its strict application could lead to greater losses through mandatory closure of severely distressed financial institutions rather than permitting forbearance. Carmichael and Esho themselves recommend a more sophisticated loan loss provisioning but apart from this minor adjustment they consider that prudential regulations can do little to overcome bubbles.

6. CONCLUSION

The issue of whether monetary policy should be used to overcome asset-price bubbles will no doubt continue to be hotly contested for some time. Recent and current booms are creating a troubling environment for theorists and practitioners alike. Whether the debate will find a consensus and a viable solution, relegating severe bouts of asset-price bubbles to the history books, is perhaps improbable for the reasons listed below.

First is the fundamental theoretical issue: *should* authorities be active in affecting capital market outcomes through monetary policy?

In this regard, Bell and Quiggan argue that the debate should be founded upon ideological grounds; whether the efficient markets hypothesis is valid or not. The debate is unlikely, however, to coalesce into this framework – at

least in the short term. Contributors have in general examined the issues without recourse to ideology.

Rather, in the short-term, those pro- and those anti- policy activism will be implicitly biased to adopt one strategy over the other, according to their adherence to or rejection of the efficient market hypothesis. Those who explicitly state that the hypothesis is invalid – at least for financial markets - are in the minority at this point in time. Yet their voice cannot be totally ignored because, despite the current dominating influence of the market efficiency paradigm, the evidence is powerful and persuasive that capital markets are disorderly.

The fact that the 'middle-ground' exists endorsing the tinkering with interest-rate policy demonstrates a strict adherence to the efficient market hypothesis is no longer embraced by most in its strict form. From an ideological perspective the 'middle-ground' is in an untenable position and, therefore, it must ultimately be in a state of flux.

Re-regulation remains unpalatable at this point in time for the majority, however, as the Governor of the Reserve Bank of Australia intimated, if these asset-price bubbles prove resilient and impervious to control by interest-rate policy, re-regulation is the only other alternative available.

The related issues of *can* authorities target and contain bubbles without damaging the wider economy, and *how* should they implement monetary policy to achieve that result, has received significant attention in the literature. The 'middle-ground' indicates that there are plausible theoretical arguments for authorities to respond proactively against asset-price misalignments.

However, there remain significant areas of difficulty which makes any confidence in this 'middle-ground' perhaps a little premature and shaky. As Stevens (2003) admitted there are certain critical issues which are still not well understood: first, the behaviour of asset prices and their linkages to the economy through the financial sector; secondly, the impact of monetary policy upon asset prices; and thirdly, what is the optimal policy response.

Secondly, the instruments/targets issue remains unresolved. It is a well understood problem and some analysts appeal to the adoption of a Taylor-like rule. However, as Kaufman points out, conflicts arise if the central bank endeavours to maintain price stability and financial stability, and these defy solution:

“...in periods after asset price bubbles have contributed to both a weakened banking system and macroeconomic recession, central banks pursue expansive monetary policies. But undercapitalized banks are constrained from expanding lending and likely even to curtail it. To stimulate and energize its expansive measures, central banks may be

tempted to ease prudential standards before the commercial banks have recovered. In contrast, in periods of accelerating product inflation and income growth, the central bank needs to pursue restrictive policies, but may be constrained by fear that the accompanying higher interest rates might induce sharp reductions in asset prices and financial instability.” (Kaufman 1998: 33-34)

Thirdly, another contentious issue, and one which has to date received considerable attention is the problem of identification. Is it possible *ex ante* to predict a boom, its bust and its detrimental impact upon the macroeconomy? Group 2 ‘monetary policy advocates’ need to demonstrate that it is possible. Group 1 ‘no policy response advocates’ must contend just the opposite, that bubbles are only identified *ex post*. The latter’s main point is that if it could be judged *ex ante*, rational market participants would act themselves to automatically correct any existing imbalances. Therefore, given that information is available to both authorities and market participants, it is only ever possible to conclude a bubble has existed after it has burst. (Note that implicit in Group 2’s attempt to identify financial misalignments is, therefore, the breakdown of the efficient market hypothesis.)

Fourthly, if it is accepted that authorities *should* act there remains the problems of deciding *when* they should act within the forecast time-frame of a bubble and its collapse, and to *what degree*. To make those decisions with any level of confidence requires making medium to long-term forecasts, and

of simulating possible policy changes and their outcomes. The enormous difficulties of achieving this are obvious.

Fifthly, the evidence to date is inconclusive whether interest-rate policy is an effective tool to target asset-price bubbles. Greenspan claims emphatically, on the basis of US experience, it is not. His observations are hard to dismiss.

Sixthly, if monetary policy was ultimately proved to be an inappropriate and/or an ineffective tool to overcome bubbles, and re-regulation became the acceptable and necessary position, what regulations could be adopted that would prove effective? While the function of banks to create money *ex nihilo* is left intact, the money supply will inevitably accommodate “irrational exuberance”. This is the essential claim of the analysts who argue that prudential controls are insufficient. The experience over the last three centuries is that regulation and control has manifestly failed. Financial innovation has inevitably allowed financial institutions to circumvent any controls or regulations. Bell and Quiggan are therefore arguably touching on the right solution when they point to the need to contain financial innovation. That containment, according to Walras and others, to be effective must be absolute. Fractional-reserve banking must be abolished, and an alternate method of *new* money production and distribution employed, if these types of bubbles are to be effectively subdued.

Part 2: Theories of Asset-Price Bubbles

1. INTRODUCTION

Despite the burgeoning literature on monetary policy and asset price bubbles, there is still scant attention paid to theory which endeavours to explain the dynamics of such phenomenon. The objective of the studies which promote proactive measures, has been to investigate how to identify the existence of financial imbalances and to propose possible remedies. The reasons why bubbles occur is largely left unexplored. The most significant attempt to present a theoretical framework is Minsky who is often referred to in the literature. Minsky's model also became identified with Charles Kindleberger who employed it to examine the history of financial crises in his popular book "Financial Crises, Manias and Panics". More recently, some authors have turned their attention to construct models that generate bubbles by incorporating certain agency frictions, or differential agency costs.

2. MINSKY/KINDLEBERGER

Minsky codified different debt contracts and argued that a normal outworking of the market system was for the balance of these contracts to move from

sustainable to unsustainable structures. Minsky differentiated between three different debt contracts: hedge, speculative and Ponzi:

- * *Hedge*: The projected income stream from an investment project is sufficient to meet debt repayment obligations.

- * *Speculative*: The projected income stream falls short of required revenues to fulfill debt repayment commitments in the short-run, therefore, the investing firm must increase debt or find the funds from an alternate source, such as its existing money-stock.

- * *Ponzi*: An extreme speculative contract. The projected income stream falls manifestly short in every period up until the termination date of the contract. The contract often involves the sale of some capital asset on completion.⁷⁵

Minsky reasoned that the latter two types were vulnerable to movements in the rate of interest, i.e. if interest rates rose the margin between revenues and liabilities contracted, with the possibility that the net-present value could become negative. Moreover, because asset prices were inversely related to interest rates, Ponzi contracts were hit with a double jeopardy.

⁷⁵ Minsky's use of the term Ponzi was not to ascribe illegality, but rather to infer the hollowness of such contracts.

Although Minsky emphasizes the flaw in the demand-side through the assumption of inappropriate debt, Minsky also posits a role for banks as they willingly accommodate the movement from a dominance of hedge contracts to speculative/Ponzi contracts. Minsky argued that banks would actively seek to augment their loan portfolios in prosperous times, thereby validating an enlarged number of debt-contracts that were susceptible to interest rate variations:

“A financial structure that is dominated by hedge finance offers both inducements to invest and incentives to engage in speculative and Ponzi finance. Banks and other financial institutions are merchants of debt. They merchandise their debts to asset holders and finance various types of activities. Idle or excess cash balances in portfolios are potential raw materials for their lending. The substitution of short-term debt for long-term debt in financing asset holdings and investment in process provides a market for their loans. Banks and other financial institutions therefore have an incentive to induce speculative and Ponzi finance.” (Kindleberger 1978: 26)

Thus stable and sustainable debt contracts provide the foundation upon which banks and investors are encouraged to take up vulnerable and unsustainable debt contracts. Stability is the fertile soil for the seed of instability and, therefore, financial crises are a natural consequence.

As to recommendations to deal with the problem, he encouraged intervention by authorities to contain the debt-contract evolutionary process, and if a crisis did eventuate to assist a correction by converting unsustainable debt-contracts to those which were sustainable.

3. ALLEN & GALE

Allen and Gale (2000) adopted the position that bubbles are caused by incongruent agency relationships in the banking sector and argued that previous attempts to construct theoretical models of financial bubbles using agency frictions fell short because they failed to explain the sequence of events.⁷⁶ They set about to rectify the inadequacy. The key element of their theory that drives their model, is the premise that lenders are less-informed than borrowers. Borrowers withhold that information and since they have a limited liability they can avoid losses through default. Therefore, profit-seeking borrowers incur debt in order to purchase assets with attended risk, and pass that risk onto uninformed lenders. Accordingly, borrowers have an incentive to push the price of assets up beyond that which can be justified by fundamentals. Their theory is a variation of the moral-hazard argument.

⁷⁶ See Tirole (1982, 1985), Weil (1987), DeLong, Shleifer, Summers and Waldmann (1990), Santos and Woodford (1997)

Their model also incorporates credit expansion by banks and this magnifies the growth of the bubble. The trigger which pricks the bubble is intervention by the central bank which creates uncertainty of further credit expansion, or a contraction in the rate of growth of credit.

4. BERNANKE, GERTLER AND GILCHRIST

Bernanke, Gertler and Gilchrist develop a theory which seeks to explain why large macroeconomic fluctuations occur when initiated by relatively small autonomous shocks. Their 'financial accelerator' creates the conditions which cause the amplification of the initial trigger. The key element of the financial accelerator is the impact of a shock to reduce the net worth of borrowers, whose cost of borrowing accordingly rises and expenditures fall. Their model relies on agency costs, rather than agency frictions, and the implications of those costs in the face of an economic down-turn. They highlight the endogenous build-up of high-cost borrowing over the course of the business cycle and the burden of that borrowing as the economy enters a recessionary phase. For this reason, their model is similar to Minsky's.

5. CONCLUSION

Although these theories employ variant catalysts to explain why bubbles arise, they have two elements in common which comprise the substance of bubbles - the problem of over-indebtedness and monetary expansion. The emphasis is on the former, and therefore, the weight of the argument falls on the demand-side.

If it is predominantly errant borrower behaviour as their theories imply, the problem these theories present is what policy options are available to contain bubbles? The models of Allen and Gale, and Bernanke, Gertler and Gilchrist, simply do not provide a ready solution, and the authors do not offer any. Minsky recommends the central bank intervene to halt the evolution of debt contracts from stable to unstable, but how could authorities judge when the line is crossed and directly withhold the process? Every loan contract would have to be scrutinized and judged according to the information available. It is impossible to see how authorities would be successful in this endeavour until perhaps the very last stage of a bubble, and then the political costs would be very great.

Because these theories provide no viable policy to contain bubbles a policy void remains. The end result is likely to be that authorities are forced to use those instruments which are available to them, which is the reliance on the tightening of interest rate policy to contain the demand for debt-money, or a

return to regulations which restrict monetary expansion. And as was argued in Part 1 of this chapter, the use of these measures is not clear-cut and they are unlikely to prove effective.

However, if the emphasis was rather placed on the supply-side, and policy was devised such as recommended by Walras and others, demand forces themselves would be strictly held in check.⁷⁷ Walras and others reasoned that the abolition of debt-money creation was the obvious and effective solution to obviate bubbles and their attended macroeconomic fall-out.

⁷⁷ Compare the ease by which authorities could oversee the banking oligarchy with that of the vast number of loan contracts.

CHAPTER 7

CONCLUSION AND RECOMMENDATIONS

1. SUMMARY

The objective of this dissertation was to investigate the recommendation of Walras and others to prohibit the manufacture of debt-money by banks. This recommendation derived from their conclusion that the power of banks to create money *ex nihilo* was the chief cause of macroeconomic instability. Issues of practice and theory were explored.

There appears to be *prima facie* evidence, that the supply of funds at zero-marginal cost to private banks, has engendered macroeconomic instability. The deregulation of financial markets in many countries in the latter third of last century provided an opportunity to gauge the validity of the argument put by Walras and others. The post-deregulation period, in accord with their hypothesis, was marked by boom/bust episodes.

As reported by the BIS, since deregulation "...the single most remarkable feature in the financial area has been the recurrence of credit, asset price and investment booms and busts" (BIS 2005: 6). The BIS concluded that "liberalized financial systems, while more efficient than repressed ones, might

be inherently prone to instability ...(and) also seem to be inherently procyclical....” (BIS 2005: 9).

Recent events surrounding the fall-out in the American sub-prime market could again be regarded as exposing the inherent instability associated with the debt-money system. It is therefore conjectured that the current unregulated status of banking does reveal the systemic flaw which Walras and others comprehended. Furthermore, it can be predicted that cyclical episodes will continue unabated and that volatility will be enhanced while the debt-money system is left unregulated.

The absence of any treatment of the hypothesis of Walras and others in orthodox theory was noted. A large part of the dissertation was devoted to carefully and critically analysing current theoretical constructs. It was demonstrated that the major macroeconomic schools are biased away from assimilating the function of banks as creators of money. Both Classical and Keynesian schools direct attention only to the financial intermediary role of banks. Although the ability of banks to create money is acknowledged by most now as fact, it is not integrated into theoretical conventions. In particular, the school of New Monetary Economics was shown to have been built upon a truncated view of banking, adopting the premise that banks solely perform an intermediary role. In consequence, NME provides no answers to contain or eliminate bubbles.

This omission in theory is perhaps part of the reason why policy recommendations to deal with the vagaries of asset price/debt cycles, skirt around the engine of debt-money supply. As well, the policy debate is presently constrained by the efficient markets hypothesis, though some dissenting voices are beginning to emerge. Walras concluded that the financial market was the only market to be strictly controlled, and money creation abolished. History shows that any policy that falls short of this mark will be circumnavigated by financial innovation.

The oversight in theory can be easily addressed. Macroeconomic and international financial theory can be built from the premise that banks not only act as financial intermediaries but also create money in order to satisfy the demand for money. The money-creating ability of banks should be explicitly acknowledged and incorporated, thereby better representing the processes that constitute the money market. When this is achieved, it is possible to demonstrate how fundamental banking practice impacts macro-stability, debt levels and prices. The injection of new funds by banks should be highlighted in contrast and in addition to the recycling of savings. When this reorientation is made certain important logical inferences can be enunciated, in the vein of the argument of Walras and others:

- (i) When banks create new money, and that money is issued in response to loan requests by consumers and/or firms, there is no guarantee that this rate of increase of the money supply is efficient in

the sense that it is economically warranted, given current output and capacity, and future growth opportunities. Private banks are not governed by the principle to contain the growth of the money supply to an appropriate level which is non-distortionary. Their basic criterion is profit, and higher levels of loans mean greater profits.

Consumption and investment decisions can thereby be accommodated through manipulations of the (bank-created) money stock and this may engender macroeconomic destabilization if those decisions produce spending beyond that which is warranted under present market conditions.

It should be emphasized that this effect is contingent upon the populace's willingness to incur debt. If that willingness rises and banks are unrestrained in their ability to expand the money supply, this will lead *ceteris paribus* to an unwarranted increase in aggregate demand, producing inflationary pressures and further attended macro-instability. Similarly, if debt reduction is pursued by the populace, the money supply will automatically contract, further depressing aggregate demand.

Such changes in debt demand can only affect changes in the money supply because of the nature of banking, however, and this is the key issue. Moreover, banks can pursue expansionary lending practices of

their own accord, and boost the money supply as the overall quality of loans is reduced. Similarly, if banks actively seek to reduce their risk exposure by calling in loans, this will cause a reduction in the size of money stock and with it aggregate demand. The potential for macro destabilization works in both directions because the money supply is linked directly to bank policy and practice. Unlike a commodity-currency like gold - the stock of which possesses some inertia whereby additions require discovery, mining and processing, and cannot be extinguished except for the attrition which occurs through normal wear and tear or loss – the stock of debt-money, manufactured and managed by banks, can be quickly and readily augmented or diminished.

(ii) Flows of international capital should be understood as being sourced not only from internationally traded savings, but also from newly created moneys invented by international financial houses. Net foreign debt levels of all nations may therefore rise or fall in concert. International capital which is not sourced from additional savings will produce or enhance macroeconomic disturbances. Thus regional or world economic cycles may be induced with the expansion and contraction of the money supply occurring across a range of nations (c.f. the East-Asian financial crisis and Third-World debt crisis).

2. A MODEL OF THE MONEY MARKET THAT INTEGRATES MONEY CREATION

It is possible to construct an interpretive model of the money market which explicitly incorporates an endogenous money supply, and thereby directly capture the effects of money-creation by banks. In the following model, an attempt is made to differentiate between the short and long-run, and stable and unstable states. The scenarios depicted are descriptive, and the results are dependent upon the market forces so described.

Case 1: Stable-State

The money market should be redefined so that the key function of banks, i.e. money-creation, is fully integrated. This principally involves the specification, as per Kaldor, of an elastic money supply. If banks are unrestrained in their capacity to issue loans and create deposit-money, then this will be reflected in an elasticity coefficient equal to zero, with respect to the rate of interest.

Because debt and money creation are inextricably linked via the dynamics of fundamental banking practice, the money supply fluctuates according to the level of national indebtedness. Banks deposits represent the dominant component of measures of the money stock. If the overall level of debt rises, the supply of money increases. Conversely, if the level of debt falls, the supply of money decreases. The *demand for money* is synonymous with the

demand for debt and banks willingly accommodate that demand during an expansionary phase. They are not restricted by reserve requirements or circumvent any and every control by inventing new monetary instruments or erecting new distribution sources.

In a mild contractionary phase, the demand for money falls as the overall level of borrowing decreases commensurate with the lower level of economic activity. In a severe contraction, not only does the demand for money falls, banks also actively impose a forced debt reduction by calling in loans to shore up their reserves and stave off a loss of confidence.⁷⁸

As loans are issued by banks the quantity of debt-money rises, as loans are retired the quantity of money falls. Authorities do not have direct control over the supply of debt-money. They influence the quantity of money indirectly via the manipulation of the price of borrowed funds which is the rate of interest.

In addition,

(1) the demand for money is inelastic in the short-run and only becomes responsive to interest rate movements in the medium to long term. The delay in response to a change in interest rates arises for a number of reasons:

- Contractual arrangements concerning the repayment of borrowed funds and the use of those borrowed funds causes

⁷⁸ Again, trade credit is ignored.

the demand for money to possess a certain inertia. In the face of a change in interest rates, households and firms are not likely to alter the demand for money for some period of time, because of their pattern of expenditure and borrowing behaviours. It is often the case that households and firms must sell off some physical asset, e.g. domestic home or factory premises, in order to substantially increase or decrease their level of borrowings.

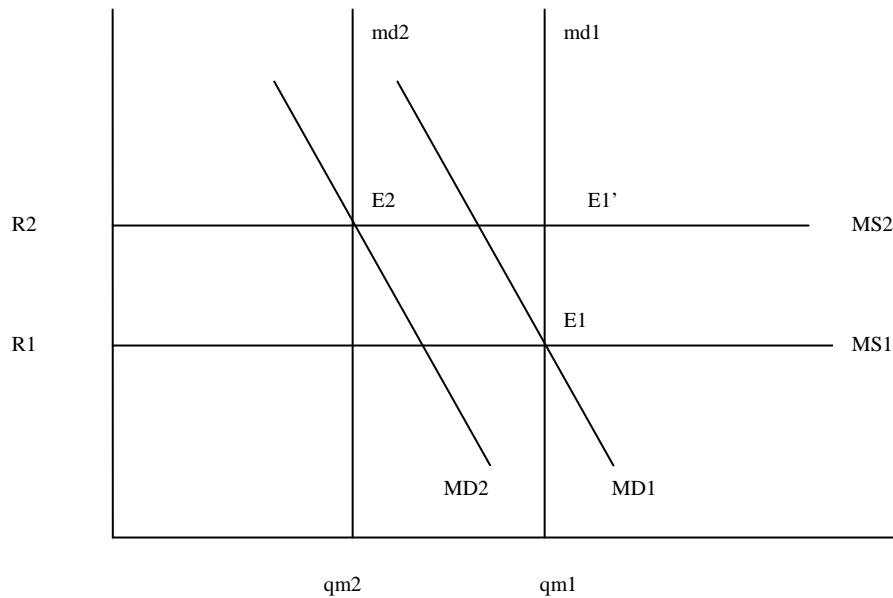
- There is a risk/return trade-off dependent upon the size of a borrower's debt-exposure. Potential and existing borrowers cannot perfectly anticipate interest rate changes. When a change does occur they must engage in a decision-making process reassessing their financial positions and determining whether they should vary their debt levels.

- In order to raise a loan, a borrower must make an application, accompanied with required documentation, which is then processed by the lending institution. After the application process, with the loan approved, it still might be some time before its full facility is drawn upon.

(2) the demand and supply functions for money are interdependent, in a similar fashion to the reasons why aggregate demand and aggregate supply curves are inter-related. Changes in the supply of money affect the level of economic activity and/or prices which in turn impacts upon

the demand for money. Consequently, as the market moves from a disequilibrium position towards equilibrium, that equilibrium itself changes.

The following diagram illustrates these features:



The initial short-run money demand curve is md_1 , the long-run money demand curve is MD_1 and the money supply curve is MS_1 . The money market is in equilibrium (E_1), the interest rate is set by authorities at R_1 and the quantity of money supplied by the banking system, given the level of demand at that rate of interest, is qm_1 .

Assume that presently the inflation rate is just outside of the Central Bank's target range, i.e. higher than what authorities desire. If authorities now raise the interest rate to R_2 , this will cause the money supply curve to shift upwards to MS_2 , however, there will be no immediate effect upon the level of quantity demanded for money because of the inelastic nature of the demand for money in the short-run. Hence, the money market moves to the new short-run equilibrium position of E'_1 , and the quantity of money in circulation remains at qm_1 .

As borrowers begin to make adjustments to the quantity of debt-money they desire at the new interest rate level, the reduction in their debt levels produces a fall in the quantity of money in the macro-economy. The loss of money in the system produces a slow-down in economic activity and/or the rate of inflation, which has a feed-back effect upon the demand for money causing it to contract to MD_2 . The final equilibrium therefore is E_2 .

Case 2: Unstable State

The initial demand and supply curves apply, however, in the unstable state the demand for money acquires a dynamic which produces, at first, a continual rightwards adjustment. That dynamic occurs as a direct consequence of a positive outlook for income and profits, and the free expansion of the money supply.

In these circumstances, the demand for money rises as profit opportunities are pursued through additional investment in products and services and the acquisition of assets – equities and property. The rise in asset-prices, together with a forecast of continued economic expansion, encourages speculation in further asset-price rises. This feeds into the demand for money function, and a ratcheting process is activated with continually rising asset prices and debt levels.

At no point is the demand for money held in check by the restricted availability of funds. Banks have the same information as all other market participants and fully accommodate demand. Moreover, competitive banks, in such an environment, are keen to sustain or increase market share. They are proactive in expanding lending, therefore, and risk trade-offs are permitted to deteriorate (i.e. the quality of loans falls).

This scenario defines the process of initiating an asset-price bubble. And, even though authorities may adjust interest rates upwards, the incremental

changes may be insufficient to impact the ratcheting effect of the demand for money. (Moreover, inflation may be confined to the assets markets, i.e. new funds are channeled into equities and property, and authorities who possess a mandate to target a consumer-price index would have little reason to act.)

The bubble will expand until a climax is reached. At that juncture, it either falls under its own weight or is pricked by some external trigger. In the former, risks are reassessed as being too high and forecasts are revised from continual growth to stagnation. This forces a sell-off of highly-leveraged assets and eventually encompasses increasing numbers of market participants as outlooks turn pessimistic with falling asset prices, and lower income and profits. In the latter, an unanticipated event occurs that impacts upon sentiment in the same way and generates the same unwinding. In terms of the diagram, the demand for money functions would continually adjust leftwards, as more and more market participants seek to quit assets and lower their debt levels.

On the supply side, as the contraction deepens banks actively call in loans, rather than merely accommodate debt reduction from the demand side. They must act to shore up their own positions by raising their reserve levels because the viability of the weaker banks, i.e. those most affected through bad debts, is being questioned. Income falls further and bankruptcies rise. The net effect is a mass destruction of debt-money, financial distress and economic contraction.

In terms of the diagram, during the winding back phase the supply of money initially would shift upwards, as banks raised interest rates independently of (or in conjunction with) moves by the central bank. However, if the volatility within markets worsens, and banks call in substantial volumes of loans and curtail lending, the supply curve of money would become irrelevant. A crisis has been reached which requires the intervention of authorities, who may act to shore up the assets of banks through a significant injection of fiat funds, guarantee depositors funds, nationalize banks in the state of insolvency etc.

In this unstable case the capacity of banks to create money *ex nihilo*, together with conventional bank policy adopted during the phases of a financial bubble, is the engine which drives the instability in the macroeconomy. During the inflationary stage of a bubble, banks accommodate rising demand for money and pursue aggressive lending practices. During the deflationary stage, banks actively call in loans and restrict the availability of funds. This is the basic argument of Walras and others.

This model it is contended better encapsulates the influence of banks upon monetary conditions and in turn the impacts upon the macroeconomy. To perceive and understand their influence in this way leads to an inextricable policy recommendation.

3. THE 100% RESERVE PROPOSAL AS A SOLUTION TO FINANCIALLY INDUCED ECONOMIC CRISES

Volatile monetary aggregates are an integral feature of a debt-money system such as fractional-reserve banking. Despite attempts by authorities to contain that volatility, their efforts will fail because this type of system permits the evolution of financial instruments, i.e. the proliferation of debt linked near-monies, and the avoidance of controls.

The English Parliament's Act of 1844 is the classic example of an attempt by the government legislator to restrict the *ex nihilo* creation of money by private banks to stave off financial crises which was circumvented by financial innovation, and its goal quickly vanquished. The Act only impacted upon note creation, but left deposit creation untouched. The Chicago School drew instruction from this particular episode, and put forward a policy proposal which would complete the task which that Act sought to achieve.

That proposal was not taken up and the inability of authorities to effectively contain monetary aggregates remains a feature of modern financial experience. Phillips writes "The development of near monies will be a problem as long as we have a money-as-debt economy" adding "If we established a commodity reserve system, such as a 100 per cent gold standard, we would no longer have the near monies problem, because there only would be one kind of money - gold." (Phillips 1995: 185, 209)

Under such a system, banks would be required to hold 100% reserves for demand deposits, while time deposits alone would constitute loanable funds. Business or trade credit would continue to be permitted. However, the debt instruments tied to business credit would be prohibited from being traded indefinitely because they would not be enshrined as legal tender and would be legally insufficient for the repayment of debts. Therefore, such instruments could not constitute a general means of payment i.e. money substitute.

Banks should be constrained to function purely as financial intermediaries and prohibited from creating debt-money *ex nihilo*. Only then will financially-induced economic cycles, sourced from the banking sector, be contained. To promote long-term price and economic stability the money supply should be constituted by some commodity (or fiat currency, the expansion of which was fixed to the long-term growth rate).

Appendix

Money Stock Measure

The model described above implies that there will exist a stock of money at any particular point in time. In other words, that quantity dictated by the intersection of the demand and supply curves. Can this stock of money be quantified from available data? The measure of the money supply has generally been a contentious issue. The essential problem has been the perceived differences in the liquidity of the various monetary instruments. Furthermore, given the ability of banks to invent new kinds of monetary instruments it is arguable that measures of money from the supply side will generally prove insufficient.

However, there is a simple solution. Instead of measuring the money stock from the supply side, it is equivalent for accounting purposes to measure it from the demand side. Hence, recognition of the predominant *debt* basis of the money supply suggests that a measure of the money supply, or at least an excellent proxy, would be to sum personal, corporate and public debt (to which would be added the relatively very small component of fiat money being the quantity of circulating notes and coins).⁷⁹ Via bank balance sheet entries, new loans are affected by new money. The repayment of loans conversely extinguishes money. Therefore, the wax and wane of debt is matched by movements in the supply of debt-sourced money.

⁷⁹ For the use of a debt proxy as a measure of the money supply see Kaufman (1982) and B. Friedman (1983).

Besides fiat issues and bank-lending there is one other way that new money could enter the system, that is, when banks acquire assets directly themselves. Similarly, money would be destroyed when banks sold assets. This represents at present, like fiat-money, a very small and insignificant component of the total money supply. If banks were permitted private and corporate equity sharing, however, that proportion could become significant.

BIBLIOGRAPHY

Ackland R. and Harper I. (1992), "Financial Deregulation in Australia: Boon or Bane," in P.J. Forsyth (ed.), Microeconomic Reform in Australia, Allen & Unwin Australia

Adams P. (1991), Odious debts : loose lending, corruption, and the Third World's environmental legacy", Earthscan, London

Akerlof G. A. and Romer P.M. (1993), "Looting: The Economic Underworld of Bankruptcy for Profit," Brookings Papers on Economic Activity, 2: 1-73

Allen F. and Gale D. (2000), "Bubbles and Crises", Economic Journal, 110: 236-255

Allen W. R. (1993), "Irving Fisher and the 100 Percent Reserve Proposal", Journal of Law and Economics, 36; 2: 703-717

Australian Senate Economics and References Committee (2005), Consenting Adults Deficits and Household Debt available at http://www.aph.gov.au/SENATE/committee/economics_ctte/household_debt/report/index.htm

Basle Committee on Banking Supervision (1995), Basle Capital Accord: Treatment of Potential Exposure for Off-Balance-Sheet Items, Basle

Bastiat F. (1877), Essays on Political Economy, Eng. Trans. D.A. Wells, G.P. Putnam's Sons, New York

Bell S. (2004), "Inflation-Plus Targeting at the Reserve Bank of Australia", The Australian Economic Review, 37 (4): 391-401

Bell S. and Quiggin J. (2006), "Asset Price Instability and Policy Responses: The Legacy of Liberalisation", Journal of Economic Issues, 40: 629 - 649

Bernanke B., Gertler M. and Gilchrist S. (1996), "The Financial Accelerator and the Flight to Quality", The Review of Economics and Statistics, 1: 1-14

Bigsten A. (2005), "Can Japan Make a Comeback?" The World Economy, 28 (4): 595-606

Black F. (1970), "Banking in a World Without Money", Journal of Bank Research, 1: 9-20

Bordo M.D., Dueker M.J. and Wheelock D.C. (2002), "Aggregate Price Shocks and Financial Instability: A Historical Analysis", Economic Enquiry, 40: 521-538

Borio C. and Lowe P. (2002), "Asset Prices, Financial and Monetary Stability: Exploring the Nexus", BIS Working Papers, No 114

Bradford DeLong J., Shleifer A., Summers L. H. and Waldmann R. J. (1990), "Positive-Feedback Investment Strategies and Destabilizing Rational Speculation," Journal of Finance, 45; 2: 374-397

Buchanan J. M. (1969), "An Outside Economist's Defense of Pesek and Saving", Journal of Economic Literature, Vol. 7, No. 3 (Sept.), pp. 812-814

Bwenanke B. and Gertler, M. (1999), "Monetary Policy and Asset Price Volatility" New Challenges for Monetary Policy, Symposium sponsored by the Federal Reserve Bank of Kansas City

Carew E. (1998), Fast Money, Allen & Unwin

Cargill T. F. (2004), "Japan's Economic and Financial Stagnation and the Possibility of a Second Lost Decade", The European Institute of Japanese Studies, Working Paper Series, 199

Carmichael J. and Esho N. (2001), "Asset Price Bubbles and Prudential Regulation", Australian Prudential Regulation Authority, Working Paper No. 3

Cecchetti S. G., Genberg H. and Wadhvani S. (2003), "Asset Prices in a Flexible Inflation Targeting Framework", in Hunter W., Kaufman G. and Pomerleano M. (eds) Asset Price Bubbles: The Implications for Monetary, Regulatory, and International Policies., MIT Press, Cambridge

Colander D. (1986), Macroeconomics, Theory and Policy, Scott, Foresman and Company

Conant A. (1927), A History of Modern Banks of Issue, G.P. Putnam's Sons, New York

Congdon T. (1988), The Debt Trap, Blackwell, Oxford

Cowen T. and Kroszner R. (1994), Explorations in the New Monetary Economics, Blackwell, Oxford

De Brouwer G. and Puppavesa W. (eds), (1999), Asia Pacific Financial Deregulation, Routledge

Dent M. and Peters B. (1999), The Crisis of Poverty and Debt in The Third World, Ashgate Pub. , Brookfield, VT

Detken C. and Smets F. (2004), "Asset Price Booms and Monetary Policy", European Central Bank, Working Paper 364

Drees B. and Pazarbasioglu C. (1998), "The Nordic Banking Crises" International Monetary Fund Occasional Paper, 161

Fama, E. (1980), "Banking in the Theory of Finance", Journal of Monetary Economics, 6; 1: 39-57

Fisher I. (1933), "The Debt-Deflation Theory of Great Depressions", Econometrica, 1; 4: 337-357

----- (1933), Booms and Depressions, George Allen and Unwin, London

----- (1936), 100% Money, Adelphi Company, New York

Friedman B. (1983), "The Roles of Money and Credit in Macroeconomic Analysis," in Tobin J. (ed.), Macroeconomics, Price, and Quantities; Essays in Memory of Arthur Okun, Brookings

----- (1998), "Comment on E.J. Lincoln "Japan's Financial Problems"", Brookings Institution, Papers on Economic Activity, 2

Friedman, M. (1948), "A Monetary and Fiscal Framework for Economic Stability". The American Economic Review, 38; 3: 245-264

Galbraith J.K. (1975), Money: Whence It Came, Where It Went, Houghton Mifflin Company, Boston

Greenspan A. (2002), Speech delivered at Kansas City Federal Reserve Bank Symposium (August), available at <http://www.federalreserve.gov/boarddocs/speeches/2002/20020830/default.htm>

Gurley J.G. and Shaw E.S. (1960), Money in a Theory of Finance, Brookings Institution, Washington

Harrod R. (1936), The Trade Cycle, Oxford

Hebden Taylor E.L. (1978), Economics, Money and Banking, Craig Press, New Jersey

Hilton H.C. (2000), 'Leon Walras on Money and Banking' in Walker D. A. (ed.), The Legacy of Léon Walras, Vol II, Edward Elgar, Cheltenham, UK (2000)

Holdsworth, W.S. (1903-38), History of English Law, Vol VIII, London

Hollander J. H. (1910), "The Development Of The Theory Of Money From Adam Smith To David Ricardo" Quarterly Journal of Economics, 25: 429-470

Honkapohja S. and Koskela E. (1999), "The Economic Crisis of the 1990s in Finland", Economic Policy, 14; 29: 399-436

Hoshi T. and Kashyap A. (1999), "The Japanese Banking Crisis: Where Did It Come From and How Will It End?" in Bernanke B. and Rotemberg J. (eds.), NBER Macroeconomics Annual 1999, MIT Press, Cambridge, 129-201

Hume D. (1964), "The Philosophical Works of David Hume", Vol. 3, T.H. Green T.H. and Grose T.H. (eds.), Scientia Verlag Allen

Hunter W.C., Kaufman G.G. and Krueger T. H. (eds.) (1999), The Asian Financial Crisis: Origins, Implications, and Solutions, Kluwer Academic Publishers, Boston

Jackson K. D. (ed.) (1999), Asia Contagion: The Causes and Consequences of a Financial Crisis, Westview, Boulder

Jevons W.S. (1910), Money and the Mechanism of Exchange, Kegan Paul, Trench, Trubner and Co., London

Jomo K. S. (ed.) (1998), Tigers in Trouble: Financial Governance and the Crises in East Asia, Zed Books, London

Juurikkala O. (2002), "The 1866 False-Money Debate in the Journal des Economistes: Déjà vu for Austrians?", The Quarterly Journal of Austrian Economics 5; 4: 43-55

Kawai M. (2003), "Japan's Banking System: From the Bubble and Crisis To Reconstruction", East Asian Bureau of Economic Research, Macroeconomics Working Papers 475

----- (2005), "Reform of the Japanese Banking System", International Economics and Economic Policy, 2; 4: 307-335

Kaldor N. (1985), The Scourge of Monetarism Second Edition, Oxford University Press

Kaletsky A. (1985), The Costs of Default, Priority Press, New York

Kaufman G.G. (1998), "Central Banks, Asset Bubbles, and Financial Stability", Working Papers Federal Reserve Bank of Chicago, Nov.

Kaufman H. (1982), "Danger: Too Much Turbulence", Challenge, May-June

Keynes J.M. (1936), The General Theory of Employment, Interest and Money available at

http://etext.library.adelaide.edu.au/k/keynes/john_maynard/k44g/chapter7.html

Kiander J. (2003), "Macroeconomic Policy and Performance in the Nordic EU Countries in the 1990s", Ezoneplus Working Paper, No. 17B

Kindleberger C. (1978), Manias, Panics, and Crashes: A History of Financial Crises, Basic Books, New York

----- (1987), "Bubbles", The New Palgrave. A Dictionary of Economics, McMillan

Khusro A. M. (1999), The Poverty of Nations, Basingstoke, Macmillan

Knight F. (1927), "Review of Frederick Soddy's Wealth, Virtual Wealth, and Debt," The Saturday Review of Literature, April 16

Kohn M. (1981), "A Loanable Funds Theory of Unemployment and Monetary Disequilibrium", American Economic Review, 71; 5: 859-879

Krugman P. R. (1979), "A Model of Balance-of-Payments Crises," Journal of Money, Credit and Banking, 11; 3: 311-325

----- (1998), "What happened to Asia" Unpublished manuscript, Massachusetts Institute of Technology, Cambridge, available at <http://web.mit.edu/krugman/www/DISINTER.html>

Leijonhufvud A. (1981), Information and Coordination, Oxford, New York

Lewis M. K. and Wallace R. H. (eds.) (1997), The Australian Financial System, Longman, South Melbourne

Lissakers K. (1999), "The IMF and the Asian Crisis: A View from the Executive Board," in Hunter W.C., Kaufman G.G., and Krueger T. H. (eds.) (1999), The Asian Financial Crisis: Origins, Implications, and Solutions, Kluwer Academic Publishers, Boston

MacLeod H. D. (1866), The Theory and Practice of Banking, Second Edition, Longmans, London

----- (1971), "A History of Banking in Great Britain", in Sumner W. G. (ed.), A History of Banking in All the Leading Nations, Augustus M. Kelly, New York, 2 (reprint of 1896 edition)

Markovitz M. (1988), "Fractional versus 100% Reserve Banking", The Freeman, available at <http://www.fee.org/publications/the-freeman/article.asp?aid=1500>

Mcfarlane I. (1995), "Financial Deregulation and Financial Markets", speech given at CEDA Conference, 'Financial Deregulation: Past Promise – Future Realities', Sydney, 27 April 1995, published in RBA Bulletin, May

----- (1999), "The Stability of the Financial System", RBA Bulletin, Aug

Merrett D. (1997), "The Regulation of Banking Finance in Australia in the Twentieth Century", University of Melbourne Working Paper, No. 17

Minsky H.P. (1986), Stabilising an Unstable Economy, Yale University Press, London

Mints L. (1945), A History of Banking Theory in Great Britain and the United States, University of Chicago Press

Noble G. and Ravenhill J. (eds) (2000), "The Asian Financial Crisis and the Architecture of Global Finance", Cambridge University Press, Cambridge

Ongena S. D. and Michalsen D. (2000), "Firms and Their Distressed Banks: Lessons from the Norwegian Banking Crisis (1988-1991)" Board of Governors of the Federal Reserve System, International Finance Discussion Papers, No. 686

Perkins J. O. N. (1989), The Deregulation Of The Australian Financial System: The Experience Of The 1980s, Melbourne University Press, Vic.

Pesek B.P. and Saving, T.R. (1967), Money, Wealth and Economic Theory, Macmillan, New York

Phillips, R. J. (1995), The Chicago Plan and New Deal Banking Reform, Sharpe, New York

Polleit T. (1995), Stable Money: Myth and Reality, available at <http://www.mises.org/story/1891>

Powell E.T. (1915), The Evolution of the Money Market: 1385-1915, The Financial News, London

Richards R. D. (1965), The Early History of Banking in England", Frank Cass and Co., (reprint of 1929 edition)

Richards T. (2003), "Asset Prices and Monetary Policy", RBA Bulletin, November

Robertson D.H. (1928), "Theories of Banking Policy", Economica, 23: 131-146

Rogers C. and Neal P. (1994), Macroeconomics and the Australian Economy, Prentice Hall

Roodman D. M. (2001), "Ending the Debt Crisis", in Brown L. *et al* (eds.) State of the World 2001 , Worldwatch Institute, Washington, D.C

Rothbard M. N. (1988), "The Myth of Free Banking in Scotland" Review of Austrian Economics 2; 1: 229-245

----- (1990), What Has Government Done to Our Money?, Ludwig von Mises Institute

Rousseas S. (1986), Post Keynesian Monetary Economics, MacMillan

Santos M. and Woodford M. (1997), "Rational asset pricing bubbles," Econometrica, 65:19-57

Schwartz A. (2003), "Asset Price Inflation and Monetary Policy", Atlantic Economic Journal, 31; 1: 13

Shiratsuka S. (2003), "Asset Price Bubble in Japan in the 1980s: Lessons for Financial and Macroeconomic Stability", Institute for Monetary and Economic Studies, Bank of Japan, Discussion Paper No. 2003-E-15

Skaggs N. T. (1999), "Changing Views: Twentieth-Century Opinion on the Banking School-Currency School Controversy," History of Political Economy, 31

Smith V. C. (1990), The Rationale of Central Banking and the Free Banking Alternative, (reprint of 1936 edition), available at <http://www.econlib.org/LIBRARY/LFBooks/SmithV/smvRCB0.html>

Stevens G.R. (2003), "Inflation Targeting: A Decade of Australian Experience", Reserve Bank of Australia Bulletin, April, 17-29

Suter C. (1992), Debt Cycles in the World Economy: Foreign Loans, Financial Crisis, and Debt Settlements, 1820-1990, Westview Press, Oxford

Sykes T. (1994) , The Bold Riders, Allen and Unwin

The Bank for International Settlements (1993), Annual Report, Basel, Switzerland

The Bank for International Settlements (2005), Annual Report, available at <http://www.bis.org/publ/arpdf/ar2005e.htm>

Tirole J. (1982), "On the Possibility of Speculation under Rational Expectations", Econometrica, 50; 5: 1163-1181

----- (1985), "Asset Bubbles and Overlapping Generations", Econometrica, 53: 6: 1499-1528

Tobin J. (1963), "Commercial Banks as Creators of "Money"", in Carson D. (ed), Banking and Monetary Studies, U.S. Treasury

Tsiang S.C. (1980), "Keynes's "Finance" Demand for Liquidity, Robertson's Loanable Funds Theory, and Friedman's Monetarism", The Quarterly Journal of Economics, 94; 3: 467-491

----- (1989), "Loanable Funds", Palgrave Dictionary of Money and Finance, McMillan

Usher A.P. (1943), The Early History of Deposit Banking in Mediterranean Europe, Russell and Russell, New York

Valentine T. (1991), Institute of Public Affairs Review, 44; 2: 400

Viner J. (1937), Studies in the Theory of International Trade, available at <http://www.econlib.org/Library/NPDBooks/Viner/vnSTT.html>

Von Hayek F. (1976), Choice in Currency: A Way to Stop Inflation, The Institute of Economic Affairs, London

----- (1978), Denationalisation of Money: An Analysis of the Theory and Practice of Concurrent Currencies, The Institute of Economic Affairs, London

Walras L. (1936), Etudes d'Economie Politique Appliquee, 12th Ed., R. Pichon et Durand-Auzias, Paris

----- (1954), Elements of Pure Economics, Trans. by Jaffe W. of Edition Definitive, 1926, George Allen and Unwin, London

Weil P. (1987), "Confidence and the Real Value of Money in an Overlapping Generations Economy", The Quarterly Journal of Economics, 102; 1: 1-22

Wicksell K. (1935), Lectures on Political Economy, Vol. II, Routledge & Kegan, London

----- (1936), Interest and Prices, MacMillan, London

Williamson, J. (2000), "What should the World Bank think about the Washington consensus?", The World Bank Observer, 15; 2: 251-264