

# A review of money issuance concepts in modern economic history

## Bachelor Thesis

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## 1. Executive summary

This Bachelor Thesis contains a discussion of different theoretical as well as practical conceptions in money issuance. However the thesis is divided into two main sections. In a first step the historical roots of today's monetary structures shall become reviewed and it will be shown how different scientific approaches in money issuance helped to shape the very modern perceptions and arrangements of current monetary systems. Therefore the retrospect will go back as early as 1844, where the birth of currently prevailing *fractional reserve* system took place under the auspices of Peel's *Bank Charter Act*. Yet it shall be demonstrated how this event became a vantage point for scientific efforts of the two big antithetic forces in money issuance theory, i.e. *Currency* and *Banking School*. This initial discussion then leads into the deeper examination of historical reactions towards urgent questions dipped through the outset of modern fractional reserve environments. Thus the monetary conceptions of important writers such as Georg Friedrich Knapp, Carl Menger and Friedrich Hayek will be analysed in the light of the respective historical circumstances. I will then review how they experienced the monetary and societal conditions of their time very differently and why this led them to very distinct viewpoints, i.e. notions about monetary systems and money itself. The main tool to write this historical part however was to closely study the authors themselves but at the same time try to involve as many independent historical sources as possible, as well as to work through modern reviews by contemporary economists or historians. Hence develops a framework how modern monetary structures evolved through a synthesis of different monetary conceptions, which were always closely connected to scientific research.

The second section contains an examination of the highly complex mechanisms and difficulties of today's *fractional reserve* system. This is an important task since the world's financial superstructures are largely dominated by so-called *fractional reserve central bank* environments. It shall thus be demonstrated how structural instabilities and fundamental economic sufferings are inherited to this ambivalent mechanism to issue money. Where exactly does the hazardous pressure to exponentially extend the money supply come from? Why do governments exhibit disproportionate debt levels but at the same time have to finance monstrous rescue measures for private financial institutions when they are in financial tilt? The discussion of those urgent economic and financial problems of western societies shall open the door to eventually analyse some fundamental approaches to reform current monetary situations within the world. Therefore Joseph Huber's "*seigniorage reform*" as well as Erving Fisher's "*100%-money*" shall initially be contrasted. Similarly it shall be interesting to see how the historical concepts discussed in the first part are still evidently present and how they impacted the on going discussion with money issuance reforms.

The conclusive part of the second section will henceforth be directed towards the possible solutions implied by *seigniorage reform* that is *sovereign money reform*. How, if at all might a monetary reform be able to solve such deeply rooted difficulties like the one's revealed in the discussion about fractional reserve systems? What role does the development of communication technologies play and how are they linked with most processes to issue money? Through discussing the *seigniorage reform* approach in more detail, those and further questions shall be examined. It shall become obvious why *seigniorage reform* might be able to resolve some fundamental issues of the former described difficulties, but also where it is restricted. The first and most important quality of such attempt to reform however must be how realistic and straightforward the solution implied is. Thus shall be balanced reasons if *seigniorage reform* complies with critical features to effectively operate such vital transformations for contemporary monetary systems.

Naturally such attempts to reform inherit quite large potential for conflict since big parts of the economic environment are affected. In a last step it shall henceforth be dealt with possible objections against *seigniorage reform* and why some of them ought to be refuted and some of them ought not to be refuted. Finally the discussion will conclude with an outlook on international developments in *seigniorage reform* attempts. The second section is largely based on Professor Huber's work, since in my opinion he not only gives a very appropriate description of current issues with *fractional reserve* but also he tries to develop straightforward thinking solutions to the problems with *fractional reserve* without striving to subvert or negate achievements of liberal economic principles. In contrast it shall be my endeavour to give proof of the genuine and sincere efforts to preserve and maybe also to introduce free democratic or even deserved liberal principles with financial superstructures.

## 2. Historical introduction on the topic of contemporary money issuance concepts

### 2.1. The controversy between the “Currency & Banking traditions” about the 1844 Bank Charter Act

The analysis of 1844 Bank Charter Act in Great Britain gives a historical introduction into the topic of this Bachelor thesis. The controversy between the two contradicting mindsets of *Currency* and *Banking* tradition will be a vantage point to take a greater look into the particular development direction of further scientific theories. The Act as well stood out as a blue print of modern practices of most subsequent fractional reserve regimes in money issuance. Yet the mechanisms to issue money through credit, i.e. deposits, were only merely developed and thus worked under simpler conditions.

The following discussion about elapsed 1844 Bank Charter act will operate with appropriate yet basic definitions of different terms in money issuance as introduced later on in the chapter. For reasons of comprehensibility the more general notions as introduced in this chapter will furthermore also apply to the subsequent chapters about historical *Banking* and *Currency* traditions. This is convenient since the respective authors still operated within a very similar yet simplified notional framework of monetary environments. However this agreement will be revisited as soon as the analysis turns towards the very modern notions in money issuance, since it will then be inevitable to lay down a very precise understanding of certain terms.

The situation in the United Kingdom during the 19th century was very much exemplary for most subsequent developments in money issuance (Whale (1944), p.110). This thesis however can only concentrate on the most relevant historical circumstances and therefore primarily focuses on the key facts of particular historical events. The traces of *Peel's Act* (Sir Robert Peel was Prime minister during this period and introduced the act) certainly go back until as early as 1813, whereas the 1844 Act only marked the latest and most definitive event in a long row of efforts in order to establish an orderly monetary mechanism in the UK. Before the act itself shall be reviewed in greater detail, it is first necessary to have a closer look on the conditions of the monetary system in the UK pre 1844.

Prior to 1844 there existed a lot of different provincial issue banks, which were allowed to issue their own paper money, i.e. bank notes (although within the same currency, pound sterling). At the time those bank notes were not necessarily redeemable back into an equivalent commodity such as gold or silver and therefore lacked a backing in securities. These conditions led to a compilation of differently issued bank notes, which varied considerably in their quality and demand. Douglas K. Adie (1970, p.286) added that “*the discretionary control of the money supply by the joint-stock and private banks (...) increased instability and harmed the economy*” before 1844, since it “*caused widespread suffering throughout the entire country*“. The Bank of England was already established as the biggest bank in the UK (p.286), already prevailing as the most notable issuer of bank notes, although owned and governed by private interests.

The Bank Charter Act basically confronted two main issues, which would help the Bank of England to consolidate its role as central bank of the United Kingdom. First of all legal tender on bank notes was exclusively given to the Bank of England in order to establish a uniform currency (Adie (1970), p.285). Accordingly this led to the prohibition of all small, provincial issue banks and to the limitation of the existing note issues to their then size. Fixed fiduciary issue principles were imposed upon the amount of bank notes.

Hence the amount of bank notes had to be secured against a 100%-gold reserve and became limited to a certain amount of about 14,000,000 Pound Sterling (Adie (1970), p.285).

Secondly the Bank was separated into a Currency Department that conducted currency issue tasks and a Banking Department that conducted deposit management (demand deposits subject to transfer or withdrawal by check) such as loan and business accounts. The key feature about this separation is revealed in the different reserve requirements of the departments. On the one hand the Currency Department was restricted to implement a rigid 100%-gold reserve requirement on the issued amount of notes whereas the Banking Department was not restricted to apply any reserve requirements on deposit banking business at all (Adie (1970), p.287).

This practical conception of the newly arranged monetary order in the UK holds the first interesting theoretical notion about essential financial workings. Without having set up any restrictions on deposit banking, the overall stock of deposits could be altered in every imaginable manner and thus would have significant influence on the stock of money. The Bank Charter Act solely declared legal tender with bank notes as well as with coinage. It however did not declare legal tender with deposits neither did it apply fixed fiduciary issue principles to current deposits, such that the Banking Department was able to greatly expand its deposits against bank loans and was soon to find out about the power to control the money supply through deposit management (Adie (1970), p.286).

Hence further credit expansions, i.e. deposit expansions, could not be effectively prevented and eventually led to the financial crisis of 1846, ultimately caused by the five-fold extension of deposits and loans as economist Jesus Huerta de Soto (2009, p.484) puts it:

*“As of 1840 credit expansion resumed in the United Kingdom and spread throughout France and the United States. Thousands of miles of railroad track were built and the stock market entered upon a period of relentless growth, which mostly favoured railroad stock. Thus began a speculative movement, which lasted until 1846, when economic crisis hit in Great Britain. It is interesting to note that on July 19, 1844, under the auspices of Peel, England had adopted the Bank Charter Act, which represented the triumph of Ricardo’s Currency School and prohibited the issuance of bills not backed 100 per cent by gold. Nevertheless this provision was not established in relation to deposits and loans, the volume of which increased five-fold in only two years, which explains the spread of speculation and the severity of the crisis which erupted in 1846”*

These events however set a precedent for most subsequent financial crashes. Members of the *Currency School* could foresee the impact of an unregulated deposit system and therefore demanded also to include deposit banking into the declarations of legal tender imposed through the Bank Charter Act (Whale (1944)). Douglas Adie (1970, p.289) contends that prior to 1844 *“the levels of deposits were at no time low enough to be regarded as economically insignificant”* and furthermore that *“deposits increased at 3-9 percent per annum”* within the period from 1822 to 1844, whereas notes persistently decreased in the latter period. He concludes that deposits substantially grew compared with notes before 1844 (p.293) and thus *“were at least as quantitatively important as notes in the period 1822-44 before Peel’s Act”* (p.296).

Hence soon after the introduction of the Act the yet insufficient regulations on legal tender lost their effectiveness because of the massive expansion and the strong influence of the stock of deposits. It was then convenient to blame the *Currency School* principles, since the crisis was a direct consequence of the adoption of

some key *Currency* principles through the Charter Act. Few people could conceive the underlying problem namely that the stock of money, i.e. the stock of deposits, had disproportionately exploded within a matter of only two years (Adie (1970), pp.290-292).

The financial crisis in Britain during 1846 gave rise again to the arguments of *Banking School* and let them de facto pull through their ideas about unregulated banking practices, although *Currency School* principles de jure prevailed ever since. Henceforth the arguments of *Banking School* shall be reviewed in contrary now. *Banking School* always wanted to leave the decision about reserve requirements with respect to banks notes as well as deposits to the banks themselves and most importantly argued that bank note issuance shall remain in the hand of provincial issue banks. *Banking School* thus advocated leaving the discretionary control of the banks liabilities, i.e. deposit management and note issuance, with the banks themselves (Adie (1970), p.285). They opposed against the monopolistic issuance position of the Bank of England and instead preferred to have a variety of issue banks. Their reasoning goes back to reliance into the correct workings of financial and economic structures, which can produce the best outcomes without governmental influence<sup>1</sup> other than the maintenance of the purely administrative side of a monetary system, e.g. to procure coinage under certain quality standards (p.285). Economic fluctuations shall thus be minimized if the banks regulated the size of their own liabilities by responding to the needs of trade (Tooke (1840), p.185). The fear of *Currency* scholars, that a variety of issue banks would ultimately flood financial markets with too many bank notes, was arbitrary to *Banking School* principles: John Fullarton (1844, p.206-207), an outright *Banking* scholar, argued that so long as “a bank issues its notes only in the discount of good bills, (...), it cannot go wrong in issuing as many as the public will receive from it.” They claimed that note-holders would promptly push for redemption of all banknotes issued in excess of the needs of trade and business under the so-called "law of reflux" (Huber (2011), p.68).

The following analysis will outline the two distinct theoretical efforts, which eventually evolved through the implementation of Bank Charter Act. Both, the evolution of *Currency* and *Banking* doctrine can be seen as an antithetic reaction towards the problems dipped by 1844 Bank Charter Act. It will then be interesting to recognize how in reality the contrary conceptions led to a synthesis of either mindsets resulting in highly ambivalent modern fractional reserve regimes.

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<sup>1</sup> I.e. extensive regulations on legal tender

### 3. Contemporary developments in “Free Banking” doctrine ever since 1844

#### 3.1. Carl Menger`s deduction of theoretical features of money and financial systems through his methods of inductive conclusion

The recovery of the very early *Banking* doctrine will initially focus on Carl Menger`s theoretical thoughts about the origin of money and how he therefore perceived the arrangement of monetary orders. In a second step the discussion will turn towards the virtual peak of *Free Banking* considerations, that is Hayek`s “Efficient Market Hypothesis”, largely based upon his conclusive work “The Denationalization of Money”. Henceforth some major properties of present-day central banking schemes worldwide can be examined in light of the obtained insights.

Carl Menger was not only the founder of the so-called “Austrian School of Economics”<sup>2</sup> but also he took great influence in shaping the to be newly arranged Austrian monetary system back in 1892 through several writings about the latter monetary regime (Menger (1892b); (1892c)). In order to be able to review his thoughts on practical questions about the Austrian monetary system, it is inevitable to first analyse the underlying perception on the origin of money he was facing. The reason why the question about the origin of money is analysed in the course of this thesis is not of mere academic interest, “because it directly leads to a debate on the nature of money, which in turn has critical bearing on arguments to who should control the money issuance” (Kumhof& Benes (2011), p.12).

In his homonymous book “The Origin Of Money” Menger treated of a commodity based theory about the formation of monetary orders (Menger (1909), p.5). For Menger money always and exclusively had an individual derivation originating in economic relations between people, like barter and trade (Menger (1892a), p.48). Menger (1892a, p.51) contented the argument that “money has not been generated by law. In its origin it is a social institution, and not a state institution. The beginning of every economy is man himself”. Menger stated that money essentially emerged from the urge to conduct convenience into barter and trade (Menger (1909), p.9). Money therefore is the spontaneous and unintended result of individual efforts of members of a society trying to find the most marketable good (Menger (1892a), p.45; (1909), p.16). This process will for more advanced economies always let precious metals, such as gold and silver, emerge as money, because they achieve all traits of the “most saleable good”:

*“The reason why precious metals have become the general current medium of exchange (...) is because their saleableness is far and away superior to that of all other commodities, and at the same time because they are found to be specially qualified for the concomitant and subsidiary functions of money”* (Menger (1892a), pp.47-48; (1909), p.29-30).

In Menger`s view individuals are eager to acquire money in order to exchange it later for other economic goods and not by orders of the state. In the first place it was individual self-interest that helped to shape money as Menger (1892a, p.49) stated it: “It was the just apprehending of their individual self interest which brought it to pass, that all the more economically advanced nations accepted the precious metals as money as soon as a sufficient supply of them had been collected and introduced to commerce.”

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<sup>2</sup> He therefore developed crucial economic mindsets in his most extensive work “Principles of Economics”, which established to date valid concepts, such as marginal utility



Being a downright *metal*ist, Menger (1909, pp.23-24) also asserted an intrinsic, somewhat predisposed value to precious metals which were being used as money. In Menger's perception precious metals shall always exhibit relatively stable value ratios and shall not significantly suffer from volatility (Menger (1909)). Henceforth the question arises whether money obtains its value from the material, i.e. precious metal, of which it is made or from its establishment in exchanges due to legal requirements and sponsorship of the government. Can it therefore be conceived as some kind of hybrid "economic good" starting as a valuable commodity and only subsequently evolving into a socially valued token in its highly developed and advanced forms? (Zarlenga (1994)). As documented in Zarlenga (2002) the main reason for the relative high values of precious metals precisely was their role as money, especially during historical monetary systems based on precious metal. Likewise historical as well as archaeological evidences strongly propose that the high value of precious metal exclusively derived from the government fiat, i.e. the legal tender declarations, and not from their intrinsic qualities as metals (Kumhof & Benes (2011), p.12). In Menger (1892a) these matters thus are confused, since he takes a simplified commodity view on money despite the fact that at his time the Austrian National Bank had long since started to issue a fiat currency, i.e. also including irredeemable bank notes, whose value were essentially unrelated to the production cost of precious metals. Long before Menger (1892a) made the famous testimony about his proposal on the new Austrian monetary regime to the *currency enquete commission* in 1892, the Austrian National Bank had been issuing massive stocks of irredeemable bank notes (Menger (1892b), p.9). Menger should have been well aware of the real conditions of the then existing monetary regimes, yet he misleadingly perceived the utmost importance of upcoming means of payment such as bank notes and deposit money. In contrast he deduced the principles of his monetary environments almost exclusively through inductive considerations other than studying real historical, archaeological as well as anthropological evidence, which largely happened to be examined and published at the time (Zarlenga (1994)).

To sum up a monetary order for Menger had to be based upon a commodity value. In a particular currency all governmental bank notes, treasury bills etc. shall ultimately depend on this legal commodity, such that they always would be redeemable back into gold or silver (this was his theoretical notion, very unlike and opposed to actual conditions of the monetary regime at that time, where governmental bank notes were irredeemable). The core of a monetary order could only consist of a precious commodity and paper monies as well as other token monies only played a subsidiary role, since they shall not be definite but facultative means of payment and thus be redeemable. In this monetary environment the coherency of deposits is neglected to have an influence on key working of the particular order (Menger (1892b)). Menger therefore is in line with *Banking* doctrine when he excludes and understates significant subsets of money, which at that time already constituted for essential parts of monetary systems with respect to their entirety.

What was Menger's idea about the role of the government then? Since money initially arose without any influence of the state, the state was solely meant to ensure the administrative maintenance of the monetary system, like the procurement of coinage under certain quality traits (Menger (1892a), pp.51-52; (1909), p.41). Thus Menger assigned a subordinated role to the government, solely upholding the administrative framework in the background, e.g. defining gold as underlying commodity of a particular currency (Menger (1909), pp.42-43). Throughout Menger's writings it becomes obvious that his perspective on the role of the state was somehow strongly focused on the relations between matters of coinage and the resulting behaviour of the state. He thus

admitted the necessity of governmental regulation with respect to coinage, but refused to broaden his point of view to the actual historical circumstances regarding more abstract token monies.

His theoretical notions are largely reflected in the recommendations he made to the Austrian *currency enquete commission*, who was in charge of redefining the Austrian monetary order around 1890-1900. Menger pledged to implement a gold standard under which the governmental bank notes and treasury bills should not only be restricted but redeemable into gold, i.e. precious metal, at all times (Menger (1892c), pp.242-244, p.252). Menger's view on monetary regimes was dominated by a precious metal based understanding of money and henceforth he did not conceive the ever-growing importance and predominance of not only bank notes, but particularly of means of payment which lacked any positive form and thus were only kept as book entries. He oversaw that the composition of monetary orders was increasingly captured by a sharply growing deposit system.

Nevertheless his propositions found its way into the newly arranged Austrian financial system. As documented by the Austrian National Bank (2013) the adoption of gold currency principles together with the insufficient yet misleading regulations on bank notes and a missing inclusion of deposit subsets as legal tender led to numerous financial crisis and persistently instable economic conditions in the decades to follow.

### 3.2. The maturity of "Free Banking" - How Hayek induced the heights of *Free Banking* doctrine through his seminal work "The Denationalization of Money"

Although Menger's thoughts about the private, contractual origin of money were reviewed to be based upon relapsed beliefs by some of his contemporaries already within that period, they took great influence in delivering the fundamental of the modern 20th century *Free Banking* doctrine, especially when it comes to the eclipsed role of the central bank, resuming the function of the monetary night-watchman. Again the analysis will start off with a review of theoretical considerations and will then try to line out the implication for the real world circumstances.

Hayek can be viewed as the successor of Menger's attitude towards monetary orders in many ways. They share some important basic assumptions about the individual derivation of monetary regimes albeit Hayek overcomes the mere metallic view on money and incorporates deposit institutions into his theory on *Free Banking*. Nevertheless Hayek found an even more rigorous argument about the mission of central banking and the task of the state. Whereas Menger admitted the inevitability of the institutional guarantee to uphold and maintain monetary orders at least to a certain limited degree, Hayek refuses to involve any significant governmental influence in his monetary conceptions.

First of all there is to say, that Hayek had a clear view on essential problems of the highly developed monetary regimes he was witnessing during his lifetime. The *fractional reserve* system, which developed under the legacy of the 1844 *Bank Charter* regime (a blue print for all subsequent regimes), had already been adapted by most powerful economies throughout the world such as the U.S., the UK, France and Germany. Similarly to the key features of the 1844 *Bank Charter Act* fractional reserve regimes have the tendency not to be able to exercise satisfactory control upon deposits, although fractional reserve principles do apply weak regulations on deposit reserves. Unfortunately the reserve requirements on deposits do not appropriately hinder commercial banks to expand the amount of money by further expanding deposit accounts (Hayek (1978), p.68). Likewise Hayek

observed the dilution of the governmental monopoly to issue money, since commercial banks found methods to evade the legal tender regulations with bank notes and coinage. In Hayek's (1976, pp.91-92) opinion this unfortunate development came about *"because for a long time it was not generally understood that deposits subject to cheque played very much the same role, and could be created by the commercial banks in exactly the same manner, as bank notes. The consequent dilution of what was still believed to be a government monopoly of the issue of all money resulted in the control of the total circulation of money being divided between a central bank and a large number of commercial banks whose creation of credit it could influence only indirectly"*.

The theory behind "The Denationalization of Money" integrated those important insights on money issuance. However Hayek attributed the genesis of the severe malfunction, i.e. private financial institutions able to largely expand the amount of money through deposit transactions, to the interventions of the state, which actions and policies ultimately were conducted by particular interest groups. Therefore the state could never help to arrange a stable and solid grounded monetary system if it was subject to political pressure (Hayek (1976), p.117). Hence Hayek was to argue, that an efficient financial regime could only be built up by releasing off all governmental influence, such as regulations on legal tender.

Contrariwise commercial banks shall be allowed to issue their own currency, which means that there shall be a variety of privately issued currencies other than a single nationally issued currency (Hayek (1976), p.51). The term currency in this notion includes besides bank notes and coinage also deposits. Certainly there was no whatsoever reserve demand required at all. The issuer of those *"clearly distinguishable kinds of currency"* (p.51) will then under competition be forced to maintain a stable quantity of currency. In Hayek's view the possibility to self regulate the amount of currency shall ultimately guaranty the stability of the monetary system as a whole, because all private financial institutions would want their own currency to be generally accepted by the public. Therefore *"the penalty for failing to fulfil the expectations raised (assumption of the author: into the idiosyncratic currency of the bank) would be the prompt loss of business (...)"*, since *"(...) the success of a currency would very much depend on establishing the credibility and trust that the bank was able and determined to carry out its declared intentions"* (Hayek (1976), p.51).

Public information systems shall purvey all relevant information about the particular currency to support the correct workings of a competitive currency regime. Hence only reliable currencies could survive under the detailed public monitoring. Hayek considered rating agencies, the financial press and similar structures to inherit the function of a public monitoring system, although he was convinced that even the issue banks themselves would provide all relevant information about their currency (p.53).

Finally the role of the state shall become confined to a minimum level such that it solely resumes the most basic administrative tasks of a monetary system. Hayek quotes here Lord Farrer, a high civil servant, lawyer and "defender of liberal economic policy" in the UK around 1900 who wrote that *"if nations make nothing else but the standard unit of value (they have adopted) legal tender, there is no need and no room for any special law of legal tender. The ordinary law of contract does all that is necessary without any law giving special functions to particular forms of currency"*(pp.37-38). Thus becomes obvious Hayek's notion about the enigmatic monetary specifications of the government where all control on money supply business be abolished (Howard (1977), p.7).

How can Hayek's proposals be judged in the light of oligopoly structures of the financial sector, which already happened to be evolved at that time back in the 1970s? His assumptions, that the impositions of a competitive model (an efficient market) can be applied to money production, should have been demonstrated more clearly, since "*he often discusses his proposals in terms which seem to imply there are only a few money producers*" (p.6). David H. Howard (1977, p.6) contends, "*a dominant money supplier might emerge from a competitive money industry*". Major banks issuing their own currency could readily control not only financial but also real economic markets (Huber (2011), p.61). Furthermore another problem comes to existence, namely that severe currency speculation between commercial banks could embark. Henceforth the self-regulation mechanism of the stock of money could suspend and massively lead into inflationary expansions of the overall amount of money, because the incentives to maintain acceptability among the public shall then be replaced by efforts of breaking their competitors.

Although Hayek's radical version of *Free Banking* remained a vision ever since its inception nearly 40 years ago, some crucial features of present-day monetary, especially financial regimes appear to be sampled from his extremist point of view. As Milton Friedman contended in 1986 "*there are no restrictions in current laws, which would prevent voluntary bilateral exchange between parties via any medium of exchange freely accepted by two parties*" (Friedman (1986), p.332). With this important insight one can turn towards the exponential spread in financial products and the extension of interbank trade throughout the world. It is not possible in this thesis to extensively examine different kinds of financial products, it is only important to capture the general meaning of the diverse portfolio range of financial products and the highly relevant interbank reserve trade. Therefore it appears that the denationalization of money has taken place as a complementary process, which was no longer tied to legal tender, catalysed by the ever-expanding financial sector. The former rather simple mechanisms and conducts of deposit banking evolved into a highly complex and linked up deposit instrument reservoir. Present-day deposit instrument institutions carry out vital tasks of most international payments transactions. They are essential part of today's high speed Internet trade as well. Similarly the development of communication technology essentially helped to enable more private matters to issue money (Huber &Robertson (2000), p.1).

In order to be able to fully understand the impact of Hayek's opus upon present-day monetary regimes, the discussion will focus on the actual workings and also the composition of monetary systems worldwide after the last historical chapter about enhancement of *Currency* tradition put forth by Georg Friedrich Knapp. Hence the term *denationalization of money* reveals its underlying meaning in a modern context.

#### 4. The evolution of “Currency” principles

##### 4.1. How Knapp derived the “State Theory of Money” in historical retrospect and thereby put the cornerstone of subsequent *Currency* scholars

Knapp faced with Menger similar questions about the derivation of monetary principles. Nevertheless they both claimed very distinct and antithetic characteristics about the origin of money and the inherent main purpose of monetary structures. Thus it is certainly interesting to discover that they have developed their conclusion very much in a diametric opposed manner. Knapp however is in line with the widespread historical evidences examined by Graeber (2011) and Zarlenga (2002), who consistently traced the origin of money back to the needs of the state and not to the needs of private trading relationships. “*The historically and anthropologically correct state/institutional story for the origins of money is one of the arguments supporting the government issuance and control of money under the rule of law*” (Kumhof& Benes (2012), p.12). Knapp wrote the “State Theory of Money” around 1900 and it was published in 1905, about 13 years later than Menger’s publications about the Austrian monetary order. In the following analysis Knapp’s particular development of some major *Currency* ideas shall be unfold.

Knapp clearly felt the ever-increasing separation of money and commodities. Although money may originally have been closely connected to commodities, such as corn, cattle or precious metal in pre-industrialized times, it more and more “dematerialized” and finally became a purely informational magnitude (Huber (2011), p.59). Knapp referred to this modern token money as *chartal* money (Knapp (1905), pp.36-37). Thereby he wanted to express that money solely rested upon the declarations of legal tender and was created out of thin air (fiat money). The lawful institutions shall be authorized to declare and issue legal tender and they thus shall ultimately constitute monetary orders (Knapp (1905), p.157). Evidently Knapp therefore clearly contended an institutional origin of money, which came about as a conscious invention of mankind. This essentially states that only governmental institutions initially were accountable to resume the sponsorship of a monetary establishment. In this notion only the government can ultimately absorb and be responsible for vital parts of a particular monetary order.

His institutional conception of monetary regimes especially included means of payment, or rather methods of payments, which were not directly included through whichever eventual regulations on legal tender, but drew influence on a certain monetary order. Knapp (1905, p.95) contended that it ultimately was the behaviour of the state that would frame the monetary system (and not just the declarations of legal tender): “*Then all means by which a payment can be made to the state form part of the monetary system.*” All means of payment, i.e. methods of payment, which can be used to do payments to public authorities (e.g. to pay taxes), shape the monetary regime.

Knapp reasoned his particular view on the properties of monetary regimes by putting into consideration the development of the former Giro Bank in Hamburg and its successors during the 17<sup>th</sup> century, who closely adapted the “giro method”. The Giro Bank was a special deposit institution, which would build up its very own deposit account system and run all payment transaction through their giro payment method (Knapp (1905), p.146). Thus creating, deferring and settling the payments via book entries executed all transactions. Subsequently other banks embraced and developed the giro system. Eventually most banks within Germany had incorporated a giro branch. Knapp (1905, p. 149) describes the mechanisms in the following manner:

*“People who wish to become a member of the Giro group of a bank make a “payment” (with either bank notes, or coins) into the bank, for which the bank opens an account for them. The payment is made in State money (...) and the accounts are kept in the units (mark, franc, pound sterling), which are already in use in the country. “Payment in” does not discharge a debit, but establishes a credit.*

*(...) If a member of the Giro association wishes to make a payment to another member, he does this just in the same way as in the Hamburg institution; the bank receives a written order to debit the amount against the deposit of the one and credit it to the deposit of the other.*

*(...) Since the bank is not pledged to keep the corpus of the money paid in, it obtains a considerable stock of money (...). Thus the working capital of the bank is increased (...).”*

This states that payments were no longer subject to factual mean of payment, neither chartal token money, nor precious money, but solely effected in book entries. It is crucial, however, to understand that the whole Giro institution initially arose as a private payment community (pp.152-153). Eventually the Giro institution would reach a widespread use, although still only within the private payment community. Thereafter the Giro institution was elevated into the state-approved monetary system, given the state *“allowed payments made to it through the giro machinery. What it thus “accepted” is not a “real” means of payment, but rather a legal method of payment”* (Knapp (1905), pp.155-156).

Through this example it becomes obvious how a formative private payment institution eventually becomes part of the state-approved monetary regime. Knapp (1905) developed a very progressive, yet appropriate perception about the future of monetary systems. He clearly distinguished between money (in a metallic, yet even chartal sense) and means of payment. He realized that a given monetary order was not ultimately subject to money but rather to the world of payments. He (p.156) contended this opinion as follows:

*“The structure of our economy, which we like to designate a money economy, does not depend on money; it only appears to depend on it because we almost always make our payments by the transfer of money. But that is only a special case. The essential feature is obligations measured in units of value. These would not be abolished with the abolition of money, but retained and managed in the Giro method.”*

To him the world of payment was a deliberate creation not only by law, but also by private societies. Payments therefore can be regarded as administrative phenomenon (p.156). The world of payments essentially depends on the concept of a unit of value, which has consciously developed in societies other than on actual, physical money. Henceforth Knapp brings forward his image of a monetary regime, which could solely be maintained through a *state giro institution* where under payments in pieces could be completely abolished (p.156). He proposes the idea of separating metallic and even chartal token money from the exclusively abstract concept of the unit of value and thus designed an image of a completely independent payment-based monetary system. This notion is of special interest since Knapp somehow anticipated the modern composition of monetary systems, wherein the major parts of payments are conducted solely via book entries, yet exceedingly exist only as database entries.

It was a natural question to Knapp whether the private giro machinery could be transformed into a governmental institution (p.156). He further assumed that a state giro institution could bring about significant changes and carry out potential merits, which are inherent to the giro machinery. This proposal can be viewed as the first step towards the concepts of the monetary sovereignty of the state and it laid down a very fundamental starting point for the later discussion. Yet it shows that Knapp was well aware of the influential powers of the deposit system and tried to integrate them in a straightforward, possibly beneficial way. Since Knapp conceived money issuance as a downright aspect of the public order he wanted to orderly establish the monetary order within a simple yet transparent framework of an unambiguous regulated money issuance mandate.

## 5. Modern notions about money issuance terms

After the preceding analysis of former historical notions on actual as well as theoretical money issuance mechanisms, it first of all now is necessary to lay down clear-cut definitions about modern money issuance terms in order to be able to properly describe certain processes in money issuance and to be fully precise about them. This also gives a distinction to the ancient comprehension of the money issuance terms, which were used in the former analysis. Only a decisive distinction of the particular definitions of money makes it possible to understand money issuance mechanisms in their full effect, henceforth shall be defined the general notion of money, central bank money, payment reserves and deposit money.

However the defined terms only refer adequately to current modern notions about money issuance. Although the ancient understanding of the terms might be based upon the same core values, they thus lack the differentiated features and notions of the modern definitions.

### 5.1. The general notion of money

It is convenient for authors writing about the subject of money to specify their understanding about the notion of money. There exists no consistent definition of money; hence the author has to be clear about his underlain apprehension on the notion of money in order to further define the particular sorts of money. In the course of the thesis Switzerland and its monetary conditions will be the exemplary case, since the Swiss monetary regime carries all character traits of a typical western *fractional reserve* regime and because information about the particular features were accessible the best and most substantially.

When turning towards the particular definitions of the stock of money, the question arises what exactly is money and where to draw the lines between particular definitions of the stocks of money. There are certainly a lot of ambiguous general notions on money. One question for instance is whether money only constitutes from what central banks summarize under M1 or if further parts compose money. Generally authors have a very open and distinct understanding of what else constitutes for money; since the stocks of money are not internationally regulated they vary considerably in their definitions. Therefore the distinction between “money” and “broad- or near-money” remains intangible, for example Krugman & Obstfeld (2009) refuse to draw a clear line and do not want to express the aggregates M2 and M3 in either terms.

In the following it is to declare which comprehension of money is the underlying one for this thesis. I further base myself on the definition of money by Huber (2011) who describes money as official and generally customary means of payment in the currency, which is valid in the sovereign territory of the state (p.11). The money in such currency is used in form of cash and deposit money and the practical criteria to confine money are given through the immediate availability to conduct payments (Huber (2011), p.14). Hence Huber exclusively defines money through the stock of money in circulation M1. Accordingly it is misleading to describe aggregates M2 and M3 as stocks of money, since Huber conceives the content of those aggregates not solely as money (p.43). If the stock of money M1 (which itself is part of the M2 and M3 aggregates) becomes subtracted from the M2- or even from the M3-pot, only claims on money remain – but not money per se, since the savings deposits from M2 and the time deposits of M3 are temporarily constricted and thus can not be used as means of payment at all times. Banks do not regard those monetary aggregates as overnight liabilities with instantaneous maturity like they do with sight and demand deposits included in M1 (Huber (2011), p.14).



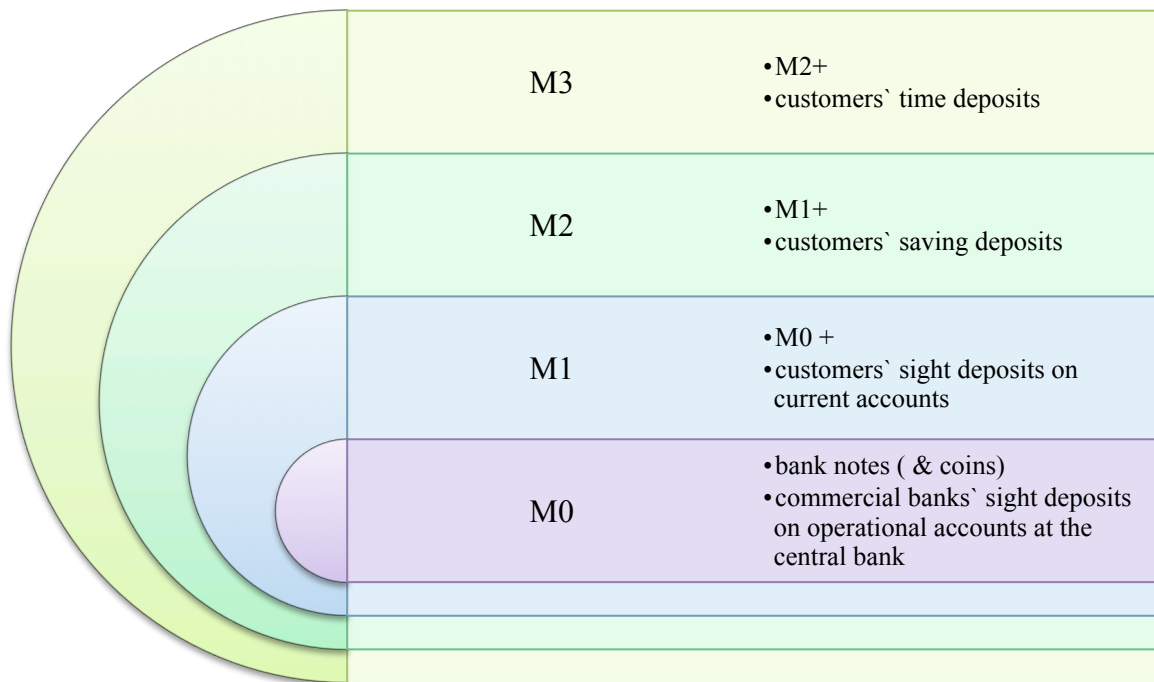


Figure I: composition and build-up of the existent volumes of money under fractional reserve

## 5.2. Central bank money

As already introduced above, stocks of money generally are divided into different sub volumes in order for central banks to be able to generate statistics and to overview macroeconomic tendencies (European Central Bank (ECB), (2013)). The smallest of those aggregates – the volume M0 – is similar to the volumes M2, M3 not universally defined in the same manner within the world. As for instance in Switzerland the M0 stock is defined through the entire stock of money created by the Swiss National Bank (SNB). This more precisely attributes to the note circulation as well as to the sight deposits commercial banks maintain on operational accounts with the Swiss National Bank (SNB (2013b)). Coins are merely brought into circulation by the Swiss National Bank, though not minted. The Swissmint is responsible to procure coinage (Swissmint (2013)). Yet coinage is not included into the M0 volume, following the definition of the Swiss National Bank. By contrast coinage is included into M0 following the definition of the ECB (Huber (2011), p.12). This yields a different importance of M0 in the Eurozone compared to Switzerland, since M0 somewhat increases through the addition of coinage. Nevertheless this shall not be of greater remark, it only reveals the cross-national disparities concerning monetary statistics.

The M0 volume of money stands under the direct and detailed control of the central bank and can be referred to as “monetary base” or even as “high-powered money” following the SNB (2013b). Hence it shall be defined as “central bank money”. Though under close monitoring of central banks this high-powered money plays only a subsidiary role compared to the more capacious, thus widespread payment reserves.

## 5.3. Payment reserves

Modern payment reserves generally consist of all available non-cash reserves as well as of cash holdings of banks (Huber (2011), p.15). Those means are used to operate the daily payment transactions.

Initially it is clearly necessary to distinguish between the two separate worlds of accounts, i.e. interbank accounts and customer accounts, as Huber (2011) states (p.15). On the hand Huber comprehends commercial banks' holdings of (non-cash) reserve balances as operational accounts maintained with the central bank (Huber (2011), p.12). Senf (2005) also refers to those operational accounts as to commercial banks' giro accounts with the central bank (p.135). The reserves, which merely amount to a particular part of the total stock of payment reserves, are used by commercial banks to settle the non-cash payment transactions in the interbank market (Huber (2011), p.27-28). The interbank circle is never interfering with the public circle (Huber (2010), p.16). This means that reserves exclusively circulate among the banks and never become directly transferred from commercial banks' to customers' current accounts (Huber (2011), p.16). On the other hand commercial banks maintain customers current accounts in order for customers to able to settle their daily payment transactions. At the same time customers always keep full accessibility with their current account balances, in contrast to savings- or time deposit account balances.

Cash holdings constitute for that part of payment reserves, which commercial banks require in terms of notes and coins. If a commercial bank is to order this physical money at the central bank (e.g. because a higher demand for cash becomes foreseeable and hence the cash management of the bank may become imbalanced yet even scarce), the central bank is obliged to supply this money (Huber (2011), p.15). The amount of cash is equally subtracted and electronically charged off from the stock of reserves on the banks' operational account with the central bank. Commercial banks payment reserves maintained with their operational accounts at the central bank amount to the maximum amount of cash, which could be supplied in case of emergency to satisfy the demand of cash. The comprehension of this notion is crucial with respect to bank run difficulties. As will be shown in the later examination only a small share, a fraction, of the overall stock of money is covered through payment reserves and could thus be exchanged into cash. However all cash, which is in circulation outside of banks (at non banks), must not be regarded as payment reserves.

Payment reserves are in different words "official money" (Huber (2011), p.15), which are brought into circulation by the central bank. It is generally referred to as "legal tender" and includes besides coins and notes also banks sight deposits on operational accounts maintained with the central bank. Not included into legal tender are the sight deposits subject to public circulation (giro money), which are not created through the central bank but through commercial banks via giro money issuance. This process will be described in greater detail in chapter 6.

Commercial banks in Switzerland, as well as in every other major western economy, are lawfully required to maintain minimum reserves. Art. 17 Sec.1 of the Swiss National Bank Act (NBA) from October 3.2003, Sr.951.11 requires them to do so. Following Art. 18 Sec.1 of NBA "*minimum reserves shall consist of Swiss franc denominated coins, banknotes and sight deposit accounts which the banks hold with the National Bank*" (SNB (2003)). All three different sorts of assets are a 100% chargeable according to Art. 13 of the National Bank Ordinance (NBO), March 18.2004, Sr.951.131. In Art.18 Sec.1 of NGA the National Bank defines the minimum reserves as the "*the rate for minimum reserves which the banks must hold on an average of a specific period of time*". In Art.15 Sec.1 of NBO the minimum reserves are determined on 2,5% of the authoritative liabilities on average. Art.18 Sec.4 of NGA finally states that commercial banks are responsible to continuously disclose and give account of their requested minimum reserves. Under the assumption that banks completely utilize their scope when targeting credit initiation (i.e. they only maintain the minimum reserves) this means from a

customer's perspective, that he could only draw out about 2.5% of the deposits on his current account in cash, given that all customers would simultaneously show up to exchange their deposits into cash at the bank (e.g. because they lost the confidence into the bank).

#### 5.4. Deposit money (giro money)

Giro money forms as stated above part of the M1 volume of money and mainly includes customers' current accounts with commercial banks (Huber (2011), p.12). The term "giro money" is synonymous with the terms "sight deposits" or "demand deposits" (Huber (2011), p.27-28). Giro money is not declared and included into legal tender in Switzerland. This sort of money exclusively circulates in the public circle and other than in the interbank circle (Huber (2011), p.16).

Giro money though has to be distinguished from book money. The latter includes besides giro money also further monetary aggregates kept as "book entries" such as savings- and time deposits (Huber (2011), p.13). Giro money is different to savings- and time deposits in the respect that giro money is available for customers at all times, whereas the latter are claims on money, which are temporarily blocked (Huber (2011), p.13). Giro money constitute for overnight liabilities with commercial banks.

When having a look on the statistics presented in the monthly review by the SNB, the enormous relevance of giro deposits become obvious: In the beginning of the year 2013 the giro money was with 88.9% from the overall M1 stock roughly about ten times bigger than the share of cash, which accounted for about 11% (SNB (2013a)). In the past years the tendency that giro money grew bigger relative to cash strongly prevailed. The amount of cash for instance has more than redoubled since 1980. This development is accompanied by far more significant growth of the stock of giro money. Deposits increased more than ten-fold within the same period of time.

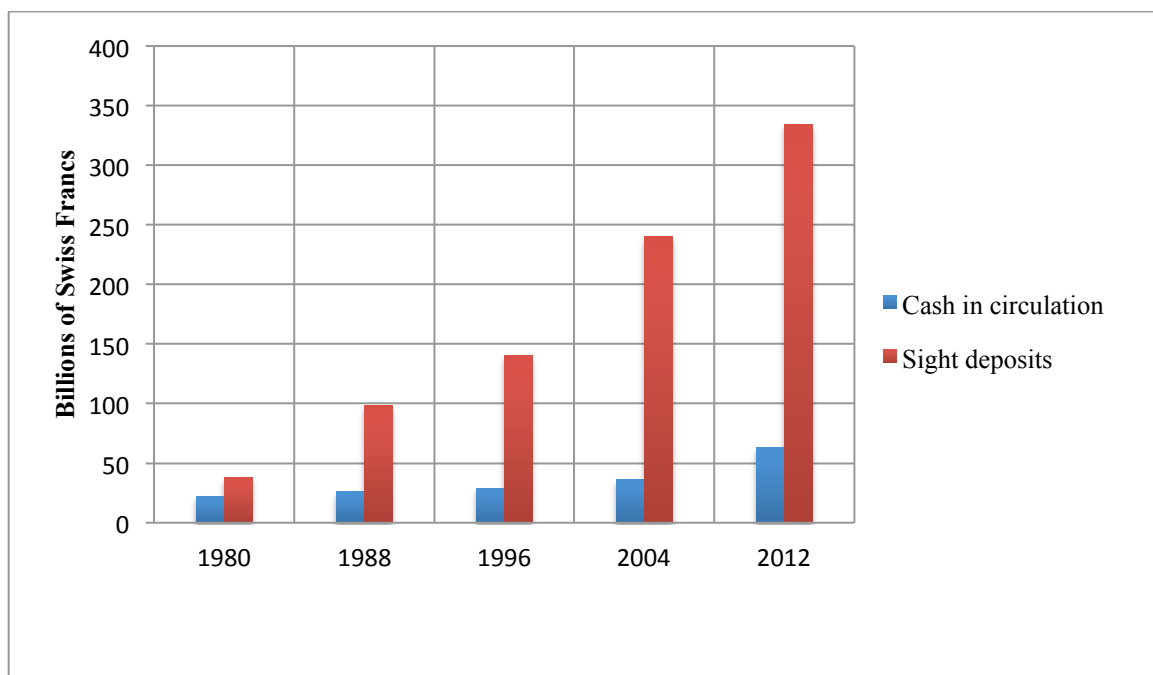


Figure II: composition of M1 in Switzerland (SNB (2013a), p.26; SNB (2007), p.24)

Which circumstances accrue for the disproportionate increase of giro money? Through the modernisation of communication- and information technologies new methods of payment have been developed (Huber & Robertson (2008), p.7). Especially modern methods of payment like E-Banking, where giro money is transferred either via credit transfer or debit advice from one account to another, helped to spread the massive use of giro money. Similarly the giro money is important for payments via EC-card, where the payable amount is directly withdrawn from the current account of the card owner. It is likely that more and more bank customers will decide to use the new services of electronic payment transactions and thus giro money will further gain importance. Henceforth the operating mode and the difficulties arising from the afterwards described fractional reserve mechanism shall be reviewed in greater detail.

## 6. Operating mode of today's money issuance system

The preceding examinations of antithetic money issuance concepts and the agreement on modern notions set up a seminal structure in order to now describe the mechanisms of contemporary prevailing money issuance regimes. Both development directions of theoretical money issuance strongly affected the ambivalent construction of fractional reserve regime. Therefore both, *Banking* and *Currency* characteristics shall be revealed and analysed. The diagnosis of the operating mode is necessary to further understand which problems arise through the structure of fractional reserve and how *sovereign money reform* or even *100%-money* concepts shall attempt to solve them. First of all shall be demonstrated how new money becomes issued and how it eventually becomes annihilated again at a later date.

Money issuance simply refers to the process where new money is created and where it gets issued to the first user (Huber (2011), p.17). Yet the process of latter-day money issuance is split since there are two different issuers. The Swiss National Bank and numerous commercial banks appear as issuers of money.

### 6.1. Issuance of the payment reserves through the central bank

The central bank is responsible to issue payment reserves. In Switzerland the SNB, who issues all bank notes and non-cash reserves, is partly responsible to dispose payment reserves. On the other hand the Swissmint residually is responsible to procure coinage. If commercial banks receive credit, i.e. payment reserves, from the central bank they have to deposit certain security instruments and other bonds as a counter value at the central bank (Huber (2011), p.17). Non-cash reserves then become transferred to the operational account of commercial banks maintained with the central bank (p.17). Hence new payment reserves become issued.

Naturally different procedures of credit initiation through the central bank exist, yet the monetary and accounting treatments always remain the same. Both, the balance sheet of the central bank and the balance sheet of the commercial bank, enlarge about exactly the same amount of credit, which was demanded by the commercial banks at the central bank. On the central bank's asset side of their balance sheet the assets increase with "debits against banks". On the liability side the liabilities, to provide the amount in cash, similarly increase about the same sum (p.17).

The commercial bank's asset side increases because of the transferal of the payment reserves from the central bank, whereas the liability side increases about the amount of credit the bank is obligated to pay back to the central bank (p.17). The reversion of this process is as easy as the creation: when the commercial bank pays back the credit of payment reserves, both the balance sheet of the central bank and of the commercial bank reduce by the same accounted item as it was expanded before.

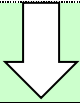


Assets	Liabilities
Payment reserves (cash, non-cash reserves)	Saving- and time deposits of customers
 + Amount of central bank credit	 + Amount of central bank credit
Commercial Papers and tangible assets	Overnight deposits (liability customer)
Debt claims (loans receivable with customers)	 + Amount of central bank credit
	Equity

Figure III: financial extension on the (simplified) balance sheet of commercial banks (when receiving central bank credit)

In dependence to the 1844 Bank Charter Act system an ancient relict of gold coverage was present in Switzerland until the year 1999 when so-called “Totalrevision” of the “Bundesverfassung” came about: by then the SNB was obligated to cover 40% of the bank notes and coins in gold (Schweizerische Eidgenossenschaft (1999)). Though the revision only acted as a legal reconciliation, since the actual gold coverage principles technically were abandoned in the 1970s. In the preceding decades the SNB was however limited in the overall stock of cash, which could be issued. Convertibility obligations restricted them in the amount of new note and coin issues. Again with the 1844 Act the coverage only applied to notes and coins and not to sight deposits. Nevertheless since the introduction of “Totalrevision der Bundesverfassung” the gold coverage was abandoned and Switzerland entered into a universal fiat money system. The term “fiat money” can be deduced from the divine command “fiat lux” – “Let there be light” (Gen, 1:3). Analogously applied to latter-day money issuance affairs this refers to money, which can be created out of thin air by legal command without determining an equivalent commodity value (Baader (2005), p.23-24). Switzerland is said to have a fiat money system because the payment reserves are issued out of thin air. Furthermore this established the foundation for commercial banks to issue giro money. Such a fiat money system postulates a “unrestricted confidence into money” (Friedman (1992)).

## 6.2. Issuance of giro money through commercial banks

The previous specification about central bank money issuance imposed a framework in order to be able to understand the various issuance possibilities of deposit money through commercial banks. The main part of M1 stock of money becomes issued through commercial banks, i.e. the payment reserves of the SNB only account for approximately 6% of M1 (Huber (2011), p.23). Therefore the influence by the central bank continuously

faded with the ever-growing usage of giro money (Huber (2011), p.48). Initially shall be explained the deposit money issuance between banks and customers. Giro money becomes issued when bank credit is granted to a customer and credited to his current account (Huber (2011), p.50). Similarly a bank does not in advance possess the money it uses to grant and thus issue credits, i.e. in the form of savings from their customers. Huber (2011) contends that credit is merely financed through savings, yet deposits come into existence through the creation of credit. *“A bank is not an institution to accept and to lend out money, but an institution to create credit”* (Macleod (1889), p.594). Therefore banks do not interact with their customers savings to lend out credit, rather they issue the giro money necessary themselves by extending their balance sheet about the granted amount (Huber (2011), p.52-54).

The bank`s accounting record when allowing a credit to a customer is: “loans receivable customer” to “liability customer” (Huber (2011), p.18). Subsequently the bank`s balance sheet increases about exact same amount of credit it has granted to the customer. The extension of the loans receivable item indicates that the customer owes the borrowed amount to the bank. The extension of the liability item obligates the bank to provide the amount in cash (if the customer has his current account at the granting bank). This essentially means that banks claim to provide all such customers with cash who want to exchange the deposit credit from their current accounts into cash.



<b>Assets</b>	<b>Liabilities</b>
Payment reserves (cash, non-cash reserves)	Saving- and time deposits of customers
Commercial Papers and tangible assets	Overnight deposits (liability customer)
Debt claims (loans receivable with customers)	 + Amount of customer credit (= increase of the M1 volume of money)
 + Amount of customer credit (= increase of the M1 volume of money)	Equity

Figure IV: financial extension on the balance sheet of commercial banks (when issuing deposit credit to customers)

This is a very unsure promise, since cash holdings of banks amount only to a negligibly small fraction (less than 3%) of the overall stock of sight and demand deposits. Basically this promise is based upon the assumption that only a small number of customers want to withdraw cash from their current accounts within the same period (this accurately holds true for periods of economic composure) (Huber (2011), p.50). This speculative assumption rapidly becomes unmaintainable in times of economic turbulence, where bank runs can lead to

widespread insolvency due to shortfalls of general cash supply management (Anari, Kolari and Mason (2005) p.754).

Contrariwise the balance sheets of the bank and of the debtor contract again when paying back the granted amount, similarly to the latter contraction of central bank reserve mechanism as stated above. Hence giro money, which initially was issued through credit, becomes annihilated again by the time the credit is paid back (Huber (2011), p.43).

Assets	Liabilities
Payment reserves (cash, non-cash reserves)	Saving- and time deposits of customers
Commercial Papers and tangible assets	Overnight deposits (liability customer)
Debt claims (loans receivable customer)	<div style="background-color: #e67e22; color: white; padding: 2px;">  – Payoff amount of customer credit (= reduction of the M1 volume of money)                 </div>
<div style="background-color: #e67e22; color: white; padding: 2px;">  – Payoff amount of customer credit (= reduction of the M1 volume of money)                 </div>	Equity

*Figure V: financial contraction on the balance sheet of commercial banks (when redemption payment of customers` deposit credit is rendered)*

Obviously commercial banks are also able to issue giro money other than through credit granting made to customers. If for instance banks buy stocks or obligation (commercial papers) from non-banks and at the same time pay through their own giro accounts, new giro money becomes issued (Huber (2011), p.44). It is certainly interesting to note, that the reserve basis initially remains unchanged when conducting such businesses. Only in the second instance, as a subsequent necessity, the extension of the reserve basis becomes unavoidable because the large amounts of newly issued giro-credit stocks demand for higher reserves. Payment reserves thus only result as a re-financed variable, which solely adapt to the net total of cash and non-cash in- and outflows of payments within a certain period of time (Huber (2011), p.54). Huber (2011) even contends to argue that deposit money issuance has become the original process whereas central banks only refinance the therefore relevant fractional basis of payment reserves.

Another remarkable process of deposit money issuance is revealed when turning towards the interbank payment transactions. Those demands and liabilities constitute for a special interbank stock of money (MIB). They can neither be counted to central bank money M0 nor can they be counted to aggregates M1, M2 or M3 (Huber (2011), p.47). Although the respective amounts are accounted in banks` statistics, they are not aggregated to a



certain stock of money, since they solely amount for credits between banks and exclude non-banks (this however is a special criteria to exclude the MIB from the usual monetary aggregates). Interbank credits are mostly created through payment transactions via interbank settlement systems. Evidently the MIB is yet another large sub-volume of deposit money, though not actually captured by official monetary aggregates. Nonetheless Huber calculates significant number for MIB, i.e. about 150 billions euros for instance in Germany and thus conceives it as a crucial difficulty of fractional reserve regimes (Huber (2011), p.47).

Eventually the question may arise why giro money is not issued indefinitely through banks in order to boost their interest payments. The minimum payment reserves of 2,5% of the overall stock of giro money are the only legal restriction to constraint the money issuance through commercial banks (Brown (2008), p.211). For instance Swiss commercial banks shall not fall short of the minimum reserve restraints subject to Art.17 Sec.1 of National Bank Ordinance. Otherwise banks are convictable to pay penalty interests due to shortfall of liquidity. These payment reserves are lent out by the central bank in form of an interest-bearing and redeemable credit.

## 7. Problems of present day's money issuance system

The preceding analysis of today's money issuance mechanism also exhibits some important virtues of Switzerland's fiat money system. In comparison to a gold standard, money issuance out of thin air enables societies to issue money without being restricted by resources such as to a certain stock of gold. Yet this feature, to issue fiat currency, is crucial to keep the balance between the stock of goods and money and therefore maintain price stability. It is therefore pointless to cover money with money, i.e. metal, like metallic currencies did. There is no original economic condition that would determine the actual value of gold or silver and thus constitute a limited stock of money. Metallic currencies lacked a crucial safeguarding in order to keep up price stability, since the stock of money could not be adapted in a suitable manner at any time. Legal restraints of money issuance made the central bank dependent on the stock of metal.

By contrast money represents the continuously generated gross domestic product in the same dimension in which goods and services are produced (Huber (2011), p.66). Relations of value stay variable at all times. The value of money is reflected in its purchasing power henceforth the coverage of fiat money is to be found in the actual gross domestic product. Money is a measure for all continuously generated goods and services.

This notion about the relation between money and goods shall also be applied to the conception of inflation and deflation. Of course the latter relation is not solely responsible for inflationary and deflationary tendencies. Following the quantity equation of money, the velocity of money and the trading volume impact the general price development (Ackermann (1977), p.9). Nevertheless in the course of the thesis it shall be assumed that the relation between the stock of money and goods primarily is responsible for general price levels. Or as Friedman contends it: "*Inflation shall always and everywhere be a monetary phenomenon*" (Friedman (1991), p.16).

Can the central bank effectively maintain price stability at times when electronic means of payment constitute the most dominant means of payment? In my view the National Bank can merely exercise this task adequately anymore and moreover is barely in control over the amount of money. The major cause is to be searched and found for in the ancient constitution ordinance, which does not impose adequate regulations on the control over the stock of deposit money. Thus, I conclude that it becomes necessary to pose a fundamental question about today's financial structures, namely why do inflationary overshooting financial means constantly occur and why do they impose an ever increasing hazardous pressure upon investments and assets. I think that the control and maintenance of M1 stock of money in terms of a "target-oriented exertion of influence" has become impossible. The severe lack of control shall be depicted in this chapter.

### 7.1. The absent control of the money supply through the central bank

In order to effectively guaranty price stability the central bank should have the ability to control the overall supply of M1 volume of money. Eventually this would include besides bank notes, coins and noncash reserves all noncash giro money as well. Matter a fact the Swiss National Bank, i.e. any other central bank in major western economies, has no direct control upon the latter sort of money, even though giro money accounts for 89,5% of the M1 volume of money (SNB (2013a)). The influence of the SNB can at most be perceived as context supervision, since the initiative and decision to issue (giro) money has shifted to commercial banks.

Yet commercial banks absorbed the general money issuance monopoly, whereas the central bank is left with a residual reserve- and bank note monopoly, which is in turn subject to the demand of banks respectively the public (Huber (2011), p.75). Of course central banks possess diverse instruments to enact influence upon the money supply, though it is crucial to understand that this always happens in an indirect manner, namely through interest rate policy: it shall reactively and indirectly enforce an impact on the money issuance behaviour of commercial banks. Central banks rather fractionally refinance the resulting reserve (and the accordant cash-) demand, whereas accordingly the commercial banks issue giro money through credit in the first place (Huber (2011), p.74).

Why is it that all monetary policy instruments of the central bank only have an indirect impact on M1 stock of money? The SNB's terms of business (2013c) distinguish between varieties of regulatory instruments: On the one hand definitive, non-borrowed reserve instruments contain open market operations and outright exchange market operations. Naturally those instruments are not limited to a certain period of time. On the other hand the borrowed reserve instruments, such as Repo- and Lombard credits or exchange swaps, rank among the temporary issued credits. By the time the credits are being paid back those credits eventually liquidate themselves (SNB (2013c), p.11-12).

The SNB is to maintain price stability through the determination of the prime rate (Euro-Libor). According to the terms of business (SNB (2013c)) the SNB solely minds the rate of interest other than the stock of money. This particular steering policy instrument holds a certain limitation, since the interest rate, to issue central bank credit, cannot be fixed below zero per cent in order to induce a borrowing of credit by commercial banks. Economists commonly refer to this situation as the liquidity trap, since in the situation of zero per cent interest rates the central bank cannot force banks to borrow loans, given that banks do not want to receive any further credit (Blanchard & Illing (2009), pp. 674). The determination of the prime rate to dispose the payment reserves can only influence commercial banks in a limited way and thus the SNB cannot exactly steer the amount of payment reserves. Again the former statement becomes important: The decision whether to take out credit from the central bank and to issue giro money on the basis of reserves exclusively rests upon the discretion of commercial banks (Huber (2011), p. 73).

It is thus a monetary regime, which is bounded to the pro-cyclical, profit seeking credit allocation of banks. There is no regulation in this process, since of course the allocation of giro money is governed by private, profit seeking interests other than by public interests. Following Huber (2011, p.76) financial markets are blind and indifferent towards the difference between a potential-oriented money demand and an inflationary overshooting money demand. Similarly commercial banks show off a very pro-cyclical behaviour, i.e. in economically better days they relax their regulations of credit issuance whereas in times of crisis they tighten the regulation of credit issuance. This leads to a recurrent over- and undershooting exuberance in the money supply in times of economic prosperity as well as contraction. Thus bank-created money significantly contributes to overheating as well as overcooling business cycles, amplifying their peaks and troughs. Huber and Robertson (2000, p.37) contend that *“under the present system positive feedback – generated by the link between the quantity of money in circulation, the demand for loans by bank customers, and the readiness of the banks to supply them – amplifies the volatility of the economy, increasing the scale and accelerating the pace of the swings between highs and lows, peaks and troughs, of the economic cycle“*.

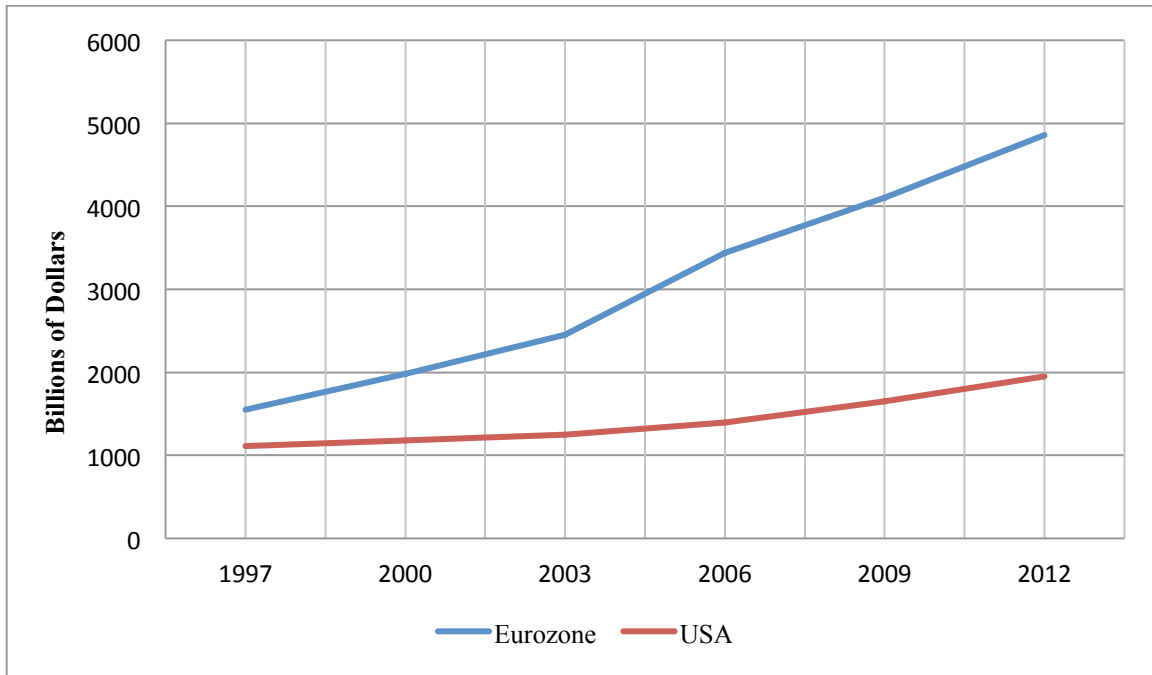


Figure XI: absolute growth of M1 stock of money (Eurozone/ Usa) ( ECB (2013a); ECB (2013b))

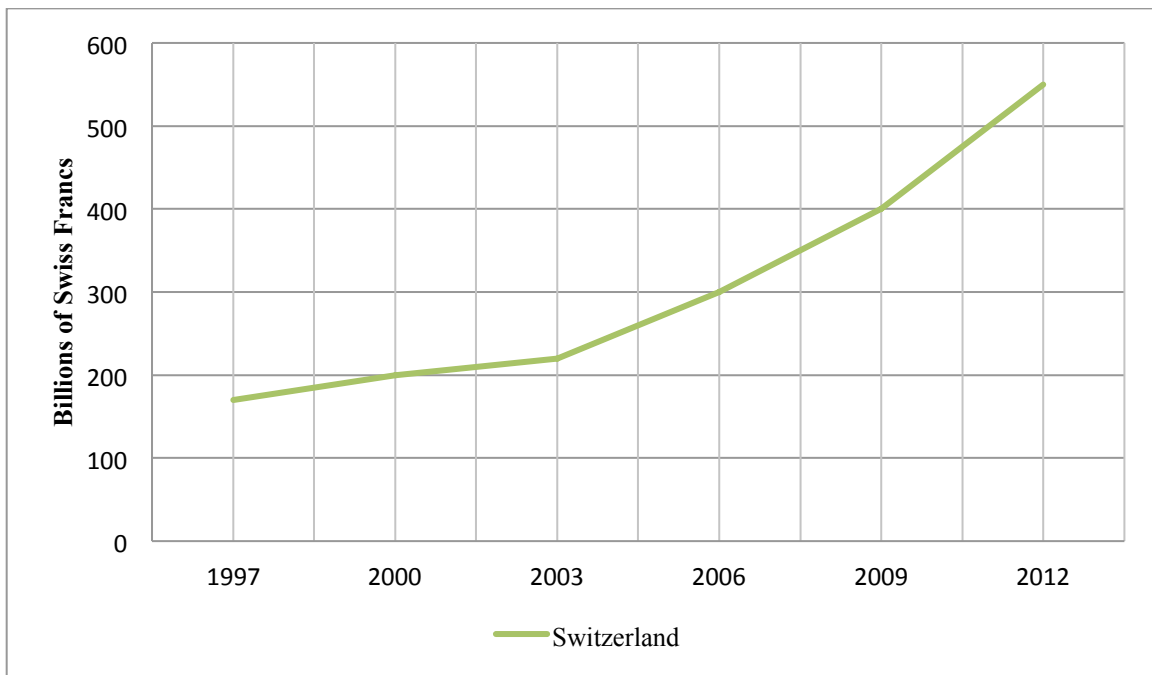


Figure VII: absolute Growth of M1 stock of money (Switzerland) (SNB (2007), p.24; SNB (2013a), p.26)

Yet the overall money supply outstandingly grew in the past 30 years. Since the 1980s an increasing share of private money issuance has not taken place due to actual economic demand in production, trade or consume, but instead followed the ever-growing urge for maximum interest-bearing financial assets (Huber (2011), p.77). To be precise this development reflects the disproportionate extension of self-promoting credit businesses (investment banking) exclusively related to financial assets. Nominal or even real growth rates (about 51%

respectively 23% in the Eurozone within the last 25 years) for the gross domestic products within that period cannot nearly explain the massive increase in financial assets and thus the increase with M1 stock of money (about 189% in the Eurozone within the last 25 years). Mere financial reasons, i.e. asset price inflation, account for the build up financial investments into stocks, commodities, real estates and derivatives such as options, futures, certificates and swaps (Huber (2011), p.77). Therefore speculative bubbles come about because financial assets are supplied with additional credit, i.e. they largely become leveraged. The credit borrowing respectively the indebtedness of the financial sector disproportionately grew due to substantial leveraging of financial assets (Huber (2011), p.78). It is crucial however to note that cycles of monetary expansions subject to credit are at the same time also cycles of expanding debts. The stock of debts inversely grows with the stock of credit. Huber (2011, p.78) refers to a variety of recent financial crisis all over the world, for example the “Black Monday” in 1987, the Junk Bond Crisis in 1989-90, the Dotcom-Bubble in 2000-01 and finally the world financial crisis in 2007-09. He argues that those relatively big crises together with numerous smaller financial crashes in Mexico, Argentina, South-East Asia etc. form recurrent and alternating speculative bubbles exhibiting very similar and repeating patterns to burst out and process. Eventually every latter stated crisis was catalysed through the phase-out of such cycles of over investment through unreasonable hazardous leveraging, i.e. over indebtedness. At a certain point expectations on the return of investment become largely disappointed due to small or absent profits. This eventually leads to the reversal of the cycle. Leveraged Investors suddenly loose earnings and financial assets but fully remain to repay their debts. Thus they find themselves in financial tilt and the so-called deleveraging, i.e. debt write off, inserts. During the credit crisis of 2007-09 stocks alone wrote off about 30 trillion US-Dollar and real estate followed with about 11 trillion US-Dollars of depreciations. This process however shall be depicted in greater detail in chapter 7.2.

## 7.2. Current monetary regimes generally issue money as a debt

Money nowadays becomes issued via credit that is every time new money is issued some actor of the economic system goes into debt. A credit extension on the asset side of balance sheets leads to the same extension on the liability side of balance sheets in form of an increasing debt. That holds true for balance sheets are always affected the same way on both sides (Huber, 2011, p.79). What are the consequences of this ambivalent connection between credit and money issuance? In the situation where an economic cycle enters from a boom period into a period of recession, the artificially build up bubble busts. It is straightforward to see, that in such situations the financial assets of investors and stockholders loose value. Given those assets initially were financed via credit (“leveraging”) the investors and stockholders have to face solvency problems and eventually even bankruptcy. Since in this situation they are obligated to pay back the full amount of credit, although their corresponding assets possibly lost much of their value (Huber (2011), p.79). They simply cannot pay back their debts, because their continuous earnings and lowered wealth assets do not cover the payments of interest rates etc. It is thus a reinforcing movement, since breakdowns and insolvencies cause even more bankruptcies and strengthen the crisis. Huber (2011, p.79) precisely puts it down: *“Die Krise nährt die Krise, wie zuvor die Hausse die Hausse nährt”* (The crisis feeds the crisis; just as did the hausse nurture the hausse before).

In such events of crisis even highly relevant corporations (as financial institutions) can readily breakdown and eventually cause major depressions in the financial and even real economy. The financial crisis of 2007-2009 showed that most governments throughout the world are willing to rescue big financial corporations from

bankruptcy. In Switzerland the rescue of the UBS was a clear example of the “too-big-to-fail” or also “too-interconnected-to-fail” policy of today’s governments. Besides providing help in case of financial emergencies governments at the same time account for the biggest debtor of commercial banks. Since latter-day’s central banks are prohibited to directly lend out money to the state, commercial banks generally serve the state’s demand for credit. Accordingly this led to the tendency that states continuously increased their debt levels throughout the past couple of decades (Huber (2011), p.81). Governmental bonds are commonly sold to commercial banks and other institutional investors. Thereafter, although re-sold and traded, the main part of the bonds remains in the hands of banks, trust, insurances and other financial institutions (Huber (2011), p.82). The state is the best debtor from the view of the banks, since states theoretically can always raise taxes in order to pay back the credits allowed to them. Most modern western states reached debt levels between 80-100% of their idiosyncratic GDP, some even worse. Japan for instance has a twice as high debt level compared to their GDP. This essentially means that an ever-growing share of the public expenditure has to be utilized to pay either interest rates or to actually repay debts. Many industrialized countries have to utilize approximately one fifth of the entire public expenditure to maintain the interest rates and to pay debt retirements (Huber (2011), p.83).

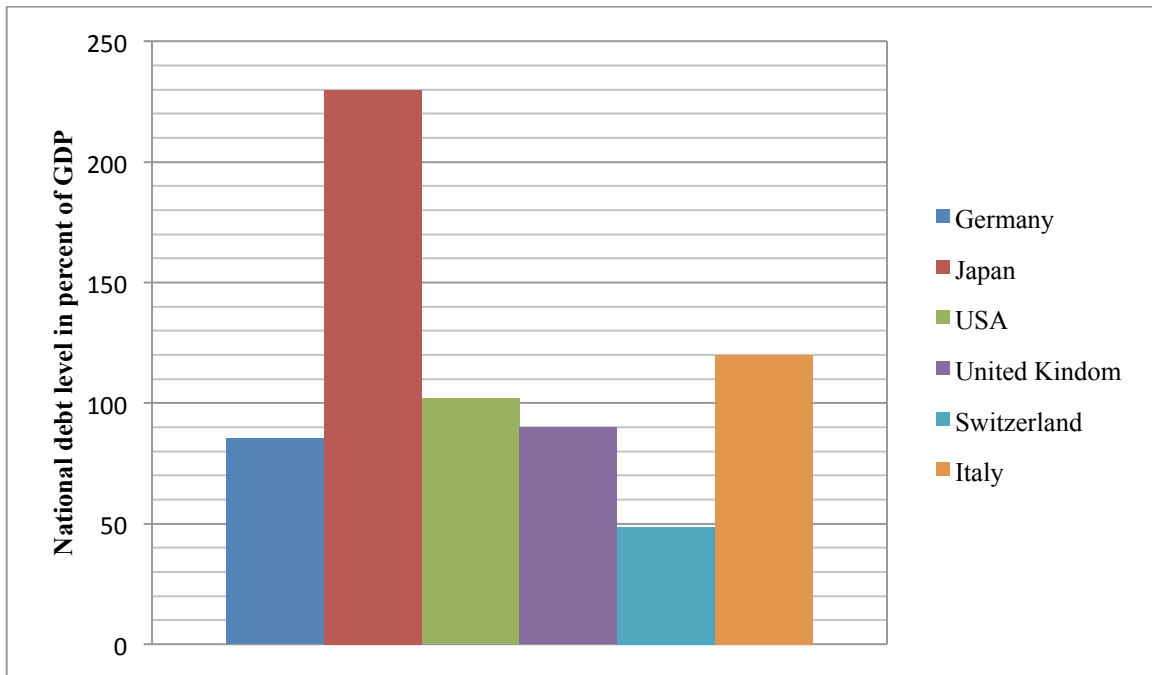


Figure VIII: gross national debt of the world’s leading economies (IMF (2012); European Commission (2013))

Although for instance Switzerland’s debt levels may be low comparing to debt levels of other western states, the question arises why governments leave the main part of money issuance to commercial banks and subsequently have to go into major debt cycles, where about they would be able to issue the money necessary themselves. It is however not straightforward to capture the reasoning behind this mechanism, especially since the state has to utilize significant amounts of tax revenues to pay back the debts and to maintain interest rates. However one may argue that the state, i.e. the central bank, shall not be in the position to directly issue money himself, since this arrangement will always tend to let the state misuse the power to issue money. It is argued that the government will then dictate the central bank policy an ultimately will flood financial markets with too much money. It is therefore inevitable to clearly establish an independent central bank institution. Thus can be found the most

notable difference between commercial banks and the Swiss National Bank, since the SNB is obligated to fulfil a constitutional task and can widely be controlled via democratic instruments of control. Commercial banks bear no such instruments of control. Present days legal regulations found a suitable compromise between the demand of independence of the central bank and the demand for an effective democratic control of the actions of the central bank. Yet those regulations often remain a theoretical vision, since in reality central banks may heavily have to subdue national or even supranational and private financial interests.

### 7.3. Money issuance profits are absorbed by individual enterprises

Blanchard & Illing (2009, p.774) define “seigniorage” as the state’s earnings from money issuance occupation. Stated more precisely the term only includes the net earnings and thus can be described as the money issuance profit of the state (Huber (2011), p.86). Such profit can be taken when the state brings new money into circulation via public expenditure (Huber (2011), p.19).

How in contrast is the term “seigniorage” used in modern finance? In modern finance “seigniorage” as well refers to the interest margin profit, which is absorbed by both central banks and commercial banks from granting credits. Nonetheless Huber (2011) clearly distinguished between ordinary seigniorage and the interest margin profit (p.19). In Huber’s ordinary notion seigniorage merely refers to the differential between the purchasing power minus the costs of provision, i.e. costs of production, of the newly issued money (p.19).

Certainly this notion goes back to the customary conception of seigniorage relating to the minting of coinage. It is thus the difference between nominal value and manufacturing costs of coins (Huber (2011), p.18). In Switzerland for instance the Swissmint is owned by the Confederation and therefore the government entirely earns the seigniorage from mint mark. Art.2 Sec.1 of Statutory Coinage Ordinance March 16.2001, SR.941.102 states that the Seigniorage of mint mark is generally used to support cultural projects (Swissmint (2001)).

The seigniorage from bank notes accordingly is much higher. Arguably the manufacturing costs with bank notes are significantly lower than with coinage and the nominal values of notes are much higher at the same time (Huber (2011), p.19). This holds true in a much bigger magnitude for giro money as well, since the manufacturing costs for non-cash money are negligibly small. Additionally giro money can be denominated with all possible face values, since the face values are not subject to any legal restraints like it is the case with latter coins and notes (p.19). Yet it is not convenient to think of ordinary seigniorage in the current giro money issuance process, because the state does not directly accrue to the banks special profits. The excess profit through giro money issuance of banks is generated because commercial banks demand higher interest rates on borrowings issued as giro credit than they themselves pay to their customers, who deposit their money on the banks’ current accounts. In other words the excess margin results as the difference between money market interest rates (since those are the relevant interest rates banks actually had to pay, if they would fully finance the credits they lend out) and customers’ current accounts interest rates (Huber (2011), p.86). With this background knowledge one can estimate the annual excess profit from giro money issuance. Therefore multiply the amount of sight and demand deposits of a certain country times the difference between current account interest and money market interest rates. For example in 2009 the excess profit in Switzerland amounted for 2-3 % of total giro money (3-5% money market interest rates minus 0,5-1,5% current account interest rates). Thus yields a total amount between 10 to 20 billion Swiss Francs for 2009. In the overall Eurozone this amount ranges from 200

billion Euros up until 350 billion Euros (Huber (2011), p.86). If henceforth giro money was issued and brought into circulation by means of public expenditure and not by credit with commercial banks, the state would accrue to the seigniorage just about the same amount as newly money becomes issued. This holds true because the manufacturing costs for deposit money are negligibly small. In a world were giro money merely does not even exist as a book entry anymore, giro money comes into existence at the push of a button, as is the case with electronically created means of payment. There are no mentionable manufacturing costs like they occur for instance with the minting of coinage (Huber (2011), p.19). Nevertheless today states miss out most money issuance profits, since the states leave the giro money issuance to commercial banks. A small share of the banks' special issuance profits eventually reach the state indirectly due to tax payments of banks, yet this share is negligible compared to the actual profit from giro money issuance.

As was shown banks' special profits are not identical with ordinary seigniorage, which would accrue to the state. As Huber points out the former represents an excess interest margin profit. The latter in contrast constitutes a unique, once-only amount, which would be put into effect as non-interest-bearing provision into the money supply. Present-day's annual growth of M1 gives a good hint what the annual seigniorage for the state shall account for, since this increase represents the newly issued amount of money.

If one takes a closer look on how the (private) money issuance special profits are distributed, it is interesting to note that those special profits are exclusively shared among the biggest financial institution throughout the world. Smaller institutions lack the critical size to generate a beneficial level of idiosyncratic giro money issuance. Hence only largely operating banks can stand to benefit (Huber (2011), p.87). A privilege thus that only applies to a small group of corporations. In my opinion those special profits from private money issuance are in no adequate relation with the efforts. This essentially depicts a *free lunch*, comparing to no other in economics. Furthermore I think it is illegitimate from a regulatory point of view and not performance related at all.

Although downright unacceptable in a modern society the paradigm became approved, that at the latest since the financial crisis 2007-2009 the general public has to bear the losses of private banks. Contrariwise the profits are continuously passed into private hands whereas far-reaching government guarantees go against every free-market based conception to eventually become bankrupt and thus let bank failures happen if the actors cannot resist the (self-inflicted) financial pressure (Huber (2011), p.85). In my view it is therefore paradox and injustice to leave the money issuance profit to the banks and at the same time to push states into major debts where by taxpayers have to be held accountable to pay the interest rates.

By contrast I contend that the supply with new money and the money supply in general shall become a "Service Public" (Mastronardi, Binswanger and Huber (2012), p.62), since it heavily influences on the organisation and stability of economic systems. The circulating stock of money shall therefore be recognized as a common good, a public domain, and the monetary order shall be recognized as an aspect of the public order. The monetary order has constitutional status.



8. How “sovereign money reform”, i.e. seigniorage reform, attempts to solve the problems of latter-day’s money issuance systems

In the final and conclusive chapter Professor Joseph Huber & James Robertson’s *seigniorage reform* will be analysed and contrasted with Fisher’s *100%-money* proposal and its successive advancements made through Professor Michael Kumhof & Jaromir Benes in their recently published “Chicago Plan Revisited”-paper. Both directions of monetary reform point to a very pragmatic solution of some fundamental problems without turning the entire free market economic order upside down. The reform proposals shall not attempt to challenge free market accomplishments neither shall they subvert free democratic and liberal orders. In contrast both proposals aim to ensure the fundamental legitimation of free market economic orders at times when they are endangered to suspend and merely remain as ostensible lip services. They are to strengthen and enhance the essential pillars of today’s prosperity and common welfare since they attempt to make today’s and prospective regulations more resistant to crisis. Thus current risk movements can be reverted and major threats for mankind can effectively be prevented. At times were most attempts to solve latter-day’s financial problems merely try to ease or rather delay the destructive financial conditions; it remains inevitable to face vital problem solving reforms.

Initially Huber’s *seigniorage reform* will be contrasted with the cognitional approach to reform made by Fisher as well as by Kumhof and Benes with their jointly advocated *full-reserve* proposal. Henceforth in chapters 8.2 to 8.4 it shall be demonstrated how *seigniorage reform* might solve the problems discussed in the preceding fourth chapter occurring with present-day’s monetary regimes. Finally in chapter 8.5 possible objections against *sovereign money reform* shall become evaluated and responded to.

8.1. “Seigniorage reform” confined from “100%-money”

The *100%-money* concept, initially put forth and brilliantly summarized by Irving Fisher in 1936, is a precursor of *seigniorage reform* and thus *sovereign money*. Fisher stood under the grave impression of the “Great Depression” during the 1920s and 30s. He could directly witness the severe malfunctions of American *Federal Reserve* regime, which came into effect somewhat 20 years earlier in 1913 and erupted in its first major financial crisis in 1929. The FED system was already prevailing as the most important and capacious *fractional reserve* regime within that period and even today it still remains representative to depict the uncontrollable and overshooting processes of giro money issuance. Fisher’s proposal was straightforward, since he simply required commercial banks to raise their required payment reserves to a 100% level. Hence too, he was to prohibit giro money issuance with private banks (Fisher (1935), pp.11-14). With 100% reserve regulations commercial banks first had to increase and then to continuously maintain payment reserves about the exact same stock of giro money they were holding in their balance sheets. The deposits on customers’ current accounts shall then be available at a 100%. Applied to modern notions this demands for a complete collateralization of the entire stock of sight deposits in M1 through payment reserves (Kumhof & Benes (2011), pp.33-34). Nevertheless it remains unsettled how a transitional increase to a 100% reserve level shall be achieved. One suggestion is to successively raise the reserve levels and make the banks undergo a gradual transition (Huber (2011), p.164). Another proposal is to initially hand the reserves necessary over to the banks and so to say bestow them on the banks. Yet this carries some fundamental inconsistencies, since banks would be gravely fleeced and thus stood under unjustified protection (Huber (2011), pp.164-165).

Through a transition to 100% reserves the control over the M1 stock of money was therefore gradually assigned into the authority of the central bank again. Yet the *100%-money* concept is unable to solve some major problems of the general money issuance process: money enters into the economic system as a debt. In the first instance the payment reserves, brought into circulation by the central bank, shall still be issued through interest bearing credits and thus come into existence as a debt. The unresolved problem of the identity of money and credit therefore persists and the proposal remains stuck in the old framework of reserve regimes. Again, as Huber contends, it is pointless to re-establish and maintain a system where money, issued out of thin air is covered with cash or paper money or even non-cash reserves (Huber (2011), p.97). Contrariwise the major enhancement of fiat-money-systems accurately is that money issuance is no longer subject to reserves. Thus can be achieved a much more convenient and straightforward solution than the one implied through Fisher, Kumhof and Benes. The point is to overcome unnecessary dualism in the outset of money issuance and obsolete reserve policy. Though the *100%-money* proposal does not inherit such purposes. Before turning towards the solution proposed through seigniorage reform, yet it shall be of interest to take into consideration the results of the very modern interpretation of *100%-money* in Benes & Kumhof's (2012) "Chicago Plan Revisited".

The intension behind their recently published research paper basically was to model a *full-reserve* framework within a modelling environment of the U.S. economy. They thus applied the recommendations of Fisher's 100%-reserve proposal to a state-of-the-art monetary DSGE model that contains a rigorous, fully micro funded and carefully calibrated model of the current U.S. financial system. DSGE model techniques are commonly used by the IMF to make macroeconomic forecasts and predictions on the U.S. economy (Kumhof & Benes (2012), p.7). It gives a carefully calibrated scope on macroeconomic fundamentals and is able to predict future trends and developments very precise, yet within a reasonable range. It embodies a large gathering of macro- and microeconomic data, which has been collected and compiled from available databases and data libraries worldwide (Kumhof & Benes (2012), p.55). Therefore it gives a quite appropriate outlook on anyone relevant scenario modelled. In the model calibration they setup two successive stages. The first stage displays an environment of the current financial system, pre transition to 100%-reserve. The second, post-transitional stage in contrast displays a 100%-reserve environment. They designed the model such that they could check Fisher's assumption under the 100%-reserve framework:

*"1. Much better control of a major source of business cycle fluctuations, sudden increases and contractions of bank credit and of the supply of bank-created money.*

*2. Complete elimination of bank runs.*

*3. Dramatic reduction of the (net) public debt.*

*4. Dramatic reduction of private debt, as money creation no longer requires simultaneous debt creation"* (Kumhof & Benes (2012), p.1)

Evidentially they find strong support for all four claims of Fisher and yet even predict much smoother business cycles enabled through a significant reduction of business cycle volatility and accompanied by a steady-state inflation rate dropped to zero per cent. Furthermore a 100% reserve regime could lead to an instantaneous and large reduction of debt levels across economies and abolish the possibility of bank runs (Kumhof & Benes (2012), p.56). They also claim that *"under the Chicago Plan private financial institutions would continue to play*

*a key role in providing a state-of-the-art payments system, facilitating the efficient allocation of capital to its most productive uses, and facilitating intertemporal smoothing by households and firms. Credit, especially socially useful credit that supports real physical investment activity, would continue to exist*” (Kumhof & Benes (2012), p.7). It is noteworthy that both their analytical and simulation results validate Fisher’s (1936) claims. And even beyond they contend further advantages of a transition to 100%-reserve such as *“large steady state output gains due to the removal or reduction of multiple distortions, including interest rate risk spreads, distortionary taxes, and costly monitoring of macroeconomically unnecessary credit risks”* (Kumhof & Benes (2012), p.56).

It is however not possible to go into a detailed examination of the particular model calibration and calculating methods since this thesis can only present the scientific evidences and results. In contrast the fundamental enhancement of seigniorage reform can henceforth be revealed for the underlying crux of the dualism in money issuance shall have become obvious by now. What is it then that overcomes the dysfunctional identity of money and credit in Huber and Robertson’s “seigniorage reform”? Certainly at this point not all relevant details of the reform can be examined, yet I focus on answering the problems analysed in the preceding chapter.

By doing so initially Huber & Robertson shall have their say about the general explanation of the reform:

*“It is basically simple. It is in two parts.*

*1. Central banks should create the amount of new non-cash money (as well as cash) they decide is needed to increase the money supply, by crediting it to their governments as public revenue. Governments should then put it into circulation by spending it.*

*2. It should become infeasible and be made illegal for anyone else to create new money denominated in an official currency. Commercial banks will thus be excluded from creating new credit as they do now, and be limited to credit-broking as financial intermediaries.*

*We refer to this as “seigniorage reform”. While adapting to the new conditions of the Information Age, it will also restore the prerogative of the state to issue legal tender, and to capture as public revenue the seigniorage income that arises from issuing it.”* (Huber & Robertson (2000), pp.1-2)

In this notion the terms “seigniorage reform” and “sovereign money reform” are used synonymously, whereas Huber (2011) introduced the latter term. Sovereign money reform completely assigns money issuance to the central bank and similarly assigns the responsibility of the entire money in circulation with the central bank. Besides issuing coins and notes the central bank shall also issue “giro money”, that is after seigniorage reform “giro money” will furthermore be denominated as non-cash “plain sovereign money” or short “plain money” (Huber (2011), p.93).<sup>3</sup> For instance in Switzerland this part of the reform merely requires an extension in Art.99 Sec.1 of the Federal Constitution as well as in Art.4 of Federal Law about legal tender with the Swiss National Bank (Huber (2011), p.92). This particular empowerment shall then enable the Swiss National Bank to not only issue cash money and non-cash money in the form of interbank payment reserves, which never interfere with the public. Yet it accurately shall enable her to issue the non-cash money for the public as well.

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<sup>3</sup> German translation: unbares Vollgeld

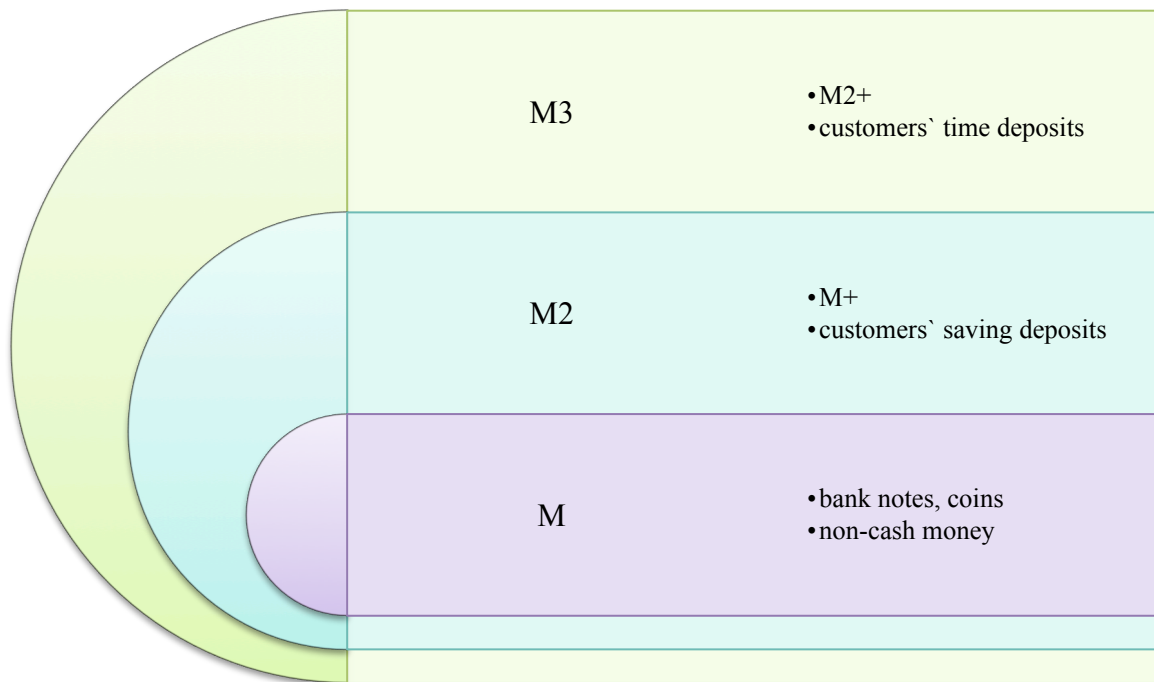


Figure IX: relation of monetary aggregates under seigniorage reform

The Swiss National Bank shall henceforth issue every amount of new money in a discretionary manner, which is regarded necessary to fulfil her constitutional duty to mainly guarantee price stability:

*“Increases in the quantity of money in circulation will have to accord strictly and clearly with the amounts judged necessary to meet the objectives of monetary policy. At present the main objective of monetary policy is to keep inflation under control. It will therefore be essential to guard, and be seen to guard, against the risk of contributing to inflation by creating too much money.”* (Huber &Robertson (2000), p.14)

The way however to put new money into circulation shall be as an interest-free contribution to public revenue rather than as a bank loan. Money thus enters into circulation as an everlasting insertion and similarly the destructive interest rate mechanism is abandoned (Huber (2011), p.93). This holds the crucial difference to Fisher's *100%-money*.

When introducing *seigniorage reform* the entire stock of currently existing sight deposits of businesses and private persons shall be declared legal tender and thus become “sovereign money” (Huber &Robertson (2000), p.25). What exactly does this declaration imply for commercial banks? Customers' current account simply cease to be part of banks' balance sheets and are maintained in their own respect, since they no longer belong to liabilities of banks but to the customers themselves (Huber (2011), p.94). Similar to the accounting treatments in portfolio management, i.e. fund businesses, customers' assets such as stocks or bonds are not part of the custodians' balance sheets. This step however guarantees the continuous availability of customers' deposits. Thus they can be conceived as customers' assets, solely lodged and administrated by the commercial bank as to conduct the customers' payment transactions (Huber (2011), p.95). Every customer's deposit balance on his or her current accounts is fully valid and can be withdrawn in cash at all times (Huber &Robertson, (2000), p.25).

This of course only holds true if enough cash is kept by the central bank in order to immediately supply it to commercial banks in urgent times. *“The sight deposits will have become plain non-cash money and, by becoming unequivocal owners of this money, the customers will have fully satisfied their claims”* (Huber & Robertson (2000), p.25). This alternation in legal situation will fully transmit to the processes of banks’ credit initiation and settlement with their customers, thus *“when banks wish to make loans to customers, they will finance the loans by taking the money from their own tills or accounts. The greater part of that money will have been borrowed for the purpose by the banks from bank customers and other banks”* (p.25). It is noteworthy however that the stock of circulating money will thence remain unchanged, since banks have to actually dispose of all the money they lend to customers.

Although the sight deposits cease to be liabilities of the bank to their customers, they still remain as liabilities of the bank. By the time a conversion to *sovereign money* has offset, the entire stock of the then existent sight deposits will have been converted into liabilities to the central bank. This provision reflects the origin of the sight deposits then existing, i.e. issued *“as non-cash money by commercial banks when they were performing the money-creating function proper to the central bank”* (Huber & Robertson (2000), p.26).

Assets	Liabilities
Payment reserves (cash, non-cash reserves)	Saving- and time deposits of customers
Commercial Papers and tangible assets	Overnight deposits (liabilities <b>to the central bank</b> )
Debt claims (customer credits)	<div style="background-color: #e67e22; padding: 5px; display: flex; align-items: center;"> <span style="font-size: 2em; margin-right: 10px;">↑</span> <span>– Amount redemption of discarded sight deposits</span> </div>
<div style="background-color: #e67e22; padding: 5px; display: flex; align-items: center;"> <span style="font-size: 2em; margin-right: 10px;">↑</span> <span>– Amount redemption of discarded sight deposits</span> </div>	Equity

Figure X: financial and administrative requirements on the balance sheet of commercial banks at the date of conversion

Furthermore this provision recognizes, *“that money would have been issued by the central bank, and that – because it was not so issued – needs to be phased out”* (p.26). Over this transitional period the elapsed stock of sight deposit will be phased out by the banks repaying it to the central bank, as customers repay old bank loans to them. Again the reader shall keep in mind, that the amount of old credit creation will be equal to the existent stock of sight deposits.

Assets	Liabilities
Currency- & gold-reserves	Liabilities from note circulation
Commercial Papers and tangible assets	Sight deposits with commercial banks
Debt claims (commercial bank credits)	+ Outstanding demands with commercial banks (discarded amount of customers' sight deposits)
+ Outstanding demands with commercial banks (discarded amount of customers' sight deposits)	Equity

*Figure XI: financial and administrative requirements on the balance sheet of the central bank at the date of conversion*

Simultaneously the amount of phased out sight deposits will be replaced, i.e. re-issued, through ordinary plain money in about the same amount by the central bank. Eventually by the time the entire amount has been paid off by the banks to the central banks, equally the banks' liabilities arising from their creation of credit have been dissolved. This marks the end of the transitional period and thus the era of debt-free money will have arrived (Huber& Robertson (2000), p.26).





Assets	Liabilities
Currency- & gold-reserves	Liabilities from note circulation
Commercial papers and tangible assets	Sight deposits with commercial banks
Debt claims (commercial bank credits)	Outstanding demands with commercial banks (discarded amount of customers' sight deposits)
	 - Amount redemption of discarded credits
Outstanding demands with commercial banks (discarded amount of customers' sight deposits)	Equity
 - Amount redemption of discarded credits  + Everlasting Provision to Government to the amount of the discarded redemption	 + New (everlasting) liability to the amount of the discarded redemption

Figure XII: phasing-out of discarded sight deposits and substitution through sovereign money represented on the balance sheet of the central bank

## 8.2. Establishment of the central bank as a constitutional authority

In the course of *seigniorage reform* it shall be crucial to establish the central bank as a fourth, independent authority within the state. Based on the division of powers (judiciary, executive & legislative authority) the central bank shall resume incontestable monetary sovereignty and at the same time be controlled democratically. Huber (2011) and Senf (2005) therefore introduced the German expression of the “*Monetative-*” institution. The exclusive instance of decision-making in discretionary monetary policy is subject to consent principles and by no means at all subject to private financial forces. Thus a single public institution shall assure the control on the entire stock of money whereupon the stock of money shall no longer be directly dependent on exclusionary interests of commercial banks. It is inevitable to subdue this monetary supremacy and at the same time guarantee the independence of the central bank so as to safeguard her from governmental influences and private self-serving interests (p.90). As Huber and Robertson add “*the time has come to take the next step in the longer-term trend in the development of central banks from being private sector commercial concerns towards being institutions of public policy, and to transfer full control of the stock of official money to central banks. The national monetary order will then be fully recognised as one aspect of the public order, and the stock of official money as a public domain*” (Huber& Robertson (2000), pp.34-35). Yet the creation and regulation of official money shall be accepted and regarded as a public policy task, for which a public authority such as the central bank shall become fully responsible. Of course this development can only take place “*on the basis of democratic accountability combined with a high degree of independence*” (p.35).

Therefore strict regulations, e.g. the reorganization of the central bank's structure of possession as a fully-fledged public domain, shall further be implemented. Today central banks unequally are held in either fully-fledged national possession or have a shared governmental and private ownership. As for instance in Switzerland the shares of Swiss National Bank are held by 55% with the Confederation & the Cantons, thereafter about 45% remain with private bodies (SNB (2012), p.154). However revaluation as a constitutional power conditions the residual nationalisation of the central bank, since the seigniorage profits shall thoroughly benefit to the public and not to private shareholders. This question shall be discussed more detailed in chapter 8.5.

### 8.3. The abolishment of indebtedness structures in money issuance

Although sovereign money reform shall abolish interest rate payments at the point of origin, where new money becomes issued, it shall not generally abolish interest payments with loans in the economic system and thus restrict the freedom of the banks. As Huber and Robertson assert *“borrowing money, and paying and receiving interest on loans, will continue to play a key role in economic life, and banks will continue to develop the credit-broking side of their business. We both agree that seigniorage reform will not necessarily reduce aggregate levels of borrowing and lending”* (Huber& Robertson (2000), p.34). Yet more debt-free incomes shall be channelled to firms and households by an increase of public spending or by a reduction of taxation and government borrowing. Thus shall be encouraged a *“more widely spread build-up of incomes, savings and capital ownership, providing a firmer base of savings and capital for borrowing and lending within sound limits, and indirectly contributing to greater social cohesion in that way”* (p.34). Yet seigniorage reform is far from being a step on the road to any kind of central planned economy. Contrariwise it will significantly contribute to a freer and more efficient functioning of the market economy. Already Irving Fisher (1936) insisted that the monetary order and thus the official currency of a national economy were questions of constitutional importance. As he contended it, *“Nationalisation of money, yes; of banking, no”* (Fisher (1936), p.58).

Under discretionary monetary policy the central bank continuously decides if and how much new money shall be issued and brought into circulation in order to fulfil their legally obligated duty. Thus if the central bank decides to increase the money supply the newly issued amount simply gets written into the operational account the central bank manages for its government in form of a non-interest bearing and everlasting seigniorage provision (Huber &Robertson (2000), p.9). Naturally the customary instruments of the central bank such as foreign exchange supervision or open market interventions will continue to exist and further on conduct supportive operations in order to maintain short-term fine tuning of the money supply and to conduct instantaneous monetary interventions (Huber& Robertson (2000), p.28).



<b>Assets</b>	<b>Liabilities</b>
Currency- & gold-reserves	Liabilities from note circulation
Commercial Papers and tangible assets	Sight deposits with commercial banks
Debt claims (commercial bank credits)	<b>Liability to the amount of the stock of non-cash money in circulation</b>
<b>Everlasting Provision to Government to the amount of the stock of non-cash money in circulation</b>	Equity



Figure XIII: financial and administrative treatment on the balance sheet of the central bank regarding the status of sovereign money

#### 8.4. Safety and stability of the banking system

As already described in chapter 8.1 customer`s current accounts will be outsourced from the commercial banks` balance sheets. The money held by customers on their sight deposit accounts will clearly remain their money hence current accounts shall be declared plain money accounts. Customers` current account balances do no longer belong to the bankruptcy assets of the bank and are therefore secured through being outsourced. Banks solely hold the accounts for their customers as their agents, for matters of noncash safekeeping and as a basis for account processing and noncash payment services (Huber &Robertson (2000), p.38). Banks will not be able anymore to use it for their own financial business interest. Similarly customers will not have accounts receivable with the bank, but are only left with right to exchange between cash and book money (Huber (2011), p.93).

If banks want to acquire (plain) money from their customers they have to explicitly borrow it from their customers. This process of borrowing it from their customers then involves the transferring of plain money from customers` current account to the bank itself. Customers therefore receive actual deposits in savings accounts or similar accounts in exchange. *“Those deposits in savings accounts will not be money itself; they will represent claims on the part of customers to be repaid the money that the bank has borrowed from them”* (Huber &Robertson (2000), p.38). In other words every credit will be fully financed under seigniorage reform because every credit has to be paid off in plain money. This holds true for every accounting record of the bank, whether external or internal, can only take place through a positive deferral of plain money (Huber (2011), pp.93-94). Most notably the transition to plain money only requires small modification with today`s transaction- and settlement systems, since they already inherit the requisite structures (p.94).

This thesis cannot examine all technical implication of seigniorage reform in greater detail thence shall be referred to the at length discussion by Huber (2011). However it is important in the course of this sub section to make clear that the outsourcing of the customer`s current accounts solves the bank run problem, since customers are guaranteed to acquire cash for their noncash money at all times. Their credit balance cannot dissolve anymore in chase of banks` bankruptcies. So even at times when a particular bank might struggle to survive there is no incentive for customers to withdraw their money from their current accounts, since it is secured independently. Also monetary transactions to broker credits can only be made with positive plain money and thus do not have influence on the stock of money anymore. Yet such transactions reflect actual cash flows of plain money and not just extensions of balance sheets (p.94).

Assets	Liabilities
Payment reserves (cash, non-cash reserves)	Saving- and time deposits of customers
 - Amount customer credit	
Commercial Papers and tangible assets	
Debt claims (customer credits)	
 + Amount customer credit	Equity

*Figure XIV: financial process on the balance sheet of commercial banks when granting customer credits under sovereign money principles*

### 8.5. How new money is brought into circulation through seigniorage

The government`s means to bring newly issued money into circulation, and thus realize their seigniorage, are of particular interest. However the main enhancement of seigniorage reform is to establish a monetary base, which is completely non-interest bearing and most notably is not subject to any principal repayment. Another way to conceive the importance of this feature is to imagine the central bank`s assets, i.e. the stock of money issued. In this context the assets represent an everlasting provision into the productive force of a particular nation (Huber (2011), p.99). General public will entirely benefit from seigniorage of new money. The government will have a variety of possibilities to spend the new money into circulation. It is however not the intention of seigniorage reform to define the particular means of spending seigniorage. Basically the question how to use the seigniorage has to be left to politics and is a matter of democratic legitimation (Huber (2011)). One way to make not only the state but also commercial banks benefit from seigniorage issuance and spending is to pay off governmental debts. Therefore governmental debts levels can be reduced significantly as well as commercial banks can therefore acquire new money from the paid off debts in order to conduct credit broking (p.102). The retirement

of governmental debts is healthy in both directions since it balances the asset and liability structures of both banks and governments.

Authors have argued many different ways to bring the new money into circulation. The proposals to employ the seigniorage range from the reduction of taxes to the financing of public expenditure such as infrastructure and education and thus can ultimately help to guarantee the safeguarding of today's as well as future public expenditure (p.101). Most notably it does not precisely matter how the new money is brought into circulation but rather that in any way it will become available in the economy almost immediately. The money will be reused and eventually reaches financial institutions in order for them to conduct ordinary businesses.

#### 8.6. Possible objections against seigniorage reform

Since seigniorage imposes very fundamental changes within monetary frameworks it is inevitable to broach the issues of exposures and examine possible objections. The most common and immediate reaction towards *sovereign money reform* basically is the claim, that money issuance must not be left in the responsibility of the state, since this would inherit a strong inflationary threat. In this mindset people however fear that the state can print out the required money as necessary and thus would ultimately cause widespread inflation (Huber (2011), p.117). This fear partly derives from the historical knowledge of governmental abuse with money issuance. Governments pushed their nations into hyperinflations or indebtedness due to war finance or corrupt structures (p.117). As stated above in chapter 8.2 it therefore is crucial for central banks as the fourth public authority always to independently meet with their lawfully obligated duties other than being guided by the necessities of the remaining authorities (p. 117). Although the central bank policy shall be subject to the securing of price stability, it similarly shall not gain complete independence. So for instance in Switzerland the Swiss National Bank shall be liable to disclose the Swiss Federal Council (Bundesrat) as well as the Banking Supervision Committee (Bankrat). Yet the central bank shall be able to freely and independently execute her main order to guarantee the securing of price stability. Accordingly this objection ought to be refuted, as seigniorage reform ought to lower the inflationary pressure in the economy. In contrast it aims to rebalance the stock of money and the amount of goods (p.118).

The next exposure is a very prominent one, since it accompanied the evolution of monetary systems since their most primitive states. This exposure claims that commercial banks universally found loopholes and ways to evade monetary regulations, i.e. to simulate, develop and eventually to launch circumventive means of payment and thus money. In a simplified view those attempts first led to the evolution of bank notes after coinage was established legal tender. Thereafter the evolution of deposits took place as soon as bank notes became declared legal tender besides coinage. This argument however leads to the assumption that banks will find means to circumvent *sovereign money reform*. Banks could try to borrow plain money credits from their customers in the very short term. Those credits could then be available very rapidly and help banks to maintain the same flexibility they have through giro money issuance today. For instance banks could negotiate steady and uninterrupted access to the customers' current accounts against a small interest rate payment. Hence this would lead to significant acceleration of back and forth deferrals between plain money accounts and fixed asset accounts such as savings accounts. Banks could simulate money issuance and draw influence upon the stock of money, since the velocity of circulation is directly relevant for the stock of money following Fisher's (1936) quantity equation of money. Such sudden multiplication of the stock of money's turnover frequency does not

equal a net extension of the stock of money per se, but it certainly has the same impact (Huber (2011), p.112). Under the quantity equation of money it may then become impossible to further guarantee the securing of price stability, since not only the net stock of money ultimately determines inflation but similarly does the velocity of circulation (p.119).

In order to prevent and even anticipate such loopholes with commercial banks, it however requires accompanying measures as for instance the regulation of credit periods and the life of loans in general. It may be necessary to set a lawfully binding minimum credit term notice for banks to lend out client funds. Thus adds another policy instrument with the central bank, namely to be able to variegate the credit period notice. The variable contingencies to adjust the minimum credit terms shall henceforth exercise influence on the velocity of circulation (p.119). The longer the minimum term notices the slower the velocity of circulation. This has the same impact as a contraction of the stock of money. Contrariwise the shortening of minimum term notices shall accelerate the velocity of circulation and thus function as a broadening of the stock of money (p.119). Similarly the central bank shall apply the new minimum notice instrument to interbank dealings and thus gain control over short-term borrowing in interbank circulation.

As a conclusive objection will be examined the possible resistance of banks. They probably will disapprove seigniorage reform because they might conceive it as an intrusion into their commercial freedom of action. Of course they might fear to loose their financial preeminence as well as the associated privileges. In my view the occupancy of special profits with private money issuance is inequitable and lacks any acceptable liberal and even free democratic ground. I think from a macroeconomic or rather societal point of view it is completely unacceptable to let special profits from money issuance rest in few exclusionary hands. Economist commonly state: *There ain't no such thing as a free lunch*. This holds not true for the financial sector, since special profits amount to a very large and unjustified *free lunch*.

The reasoning of the banks to oppose seigniorage reform however might go into a different direction, respectively to point at potential increases in fees to carry out cashless payments and the potential reduction in account management quality. Banks could collectively decide to significantly increase the account maintenance-, payment and usage fees because their special profits from private money issuance cease to exist and they will want to recoup the loss from abolished special profits (Huber &Robertson (2000), p.45). However the Banking Supervision Committee had to intervene and assure the competitiveness between the banks. Agreements on prices shall thus be prohibited. Therefore suitable regulations could further assure the stability in banks' services price, since increases in price cannot be justified through the shortfall of illegitimate special profits in money issuance (p.45). All in all, Huber and Robertson see *"little reason to fear that seigniorage reform will seriously affect the quality and loss of payment services available to bank customers"* (Huber &Robertson (2000), p.46).

## 9. Conclusion and Outlook

I am convinced that seigniorage reform can solve urgent and inevitable difficulties of today's financial sufferings worldwide and I am not able to conceive any strong objection against *seigniorage reform* at this point. Since there has not taken place a public and thus more widespread discussion about seigniorage reform, potential dangers might not yet have been revealed. The dangers however must be of great significance to outweigh the benefits from *sovereign money reform*. One general problem might be to resist against impertinent and thus misleading arguments against seigniorage reform deliberately used by oppositional interest groups. In my view sovereign money reform is a necessary consequence in path dependent evolution of monetary environments in order to meet the ever-increasing needs and growth of mankind and to ensure the productive as well as ecological basis of this earth. Not only would sovereign money reform establish far more stable financial conditions but also would it abandon compulsory economic growth, which is ultimately subject to the maximum return dictate induced through exponential extension of today's money supply. Seigniorage reform principally is able to relieve the compulsion for economic, i.e. financial, growth. Yet it promises to balance the growth levels of both financial and real economic needs according to real circumstances. Furthermore seigniorage reform inherits the potential to sustain and even the money supply on relatively constant levels and thus enable corporations to change their predominant focus from primarily being concerned about economic and financial growth to causing less impact on the environment and maybe even work under cooperative superstructures other than under competitive rivalry.

Finally the question arises whether introducing seigniorage reform shall initially be more reasonable on a national level, i.e. seigniorage should be initiated by one single country, or on a more widespread international basis. However Switzerland shall again be the exemplary precedent to suggest sovereign money reform on a national level, since it features profound democratic opportunities to adopt seigniorage reform through the people themselves and also has the required financial environment regarding stability and autonomy. So if Switzerland was to pioneer seigniorage reform alone what will be the international consequences with respect to operating foreign exchange markets, exchange rates, possibilities of capital flights or overflows and the threats of aggressive currency speculations from outside?

Huber and Robertson (2000, p.55) contend that the public in Switzerland and abroad shall use a debt-free stock of money just in the same ways the use money now. Yet foreign business and trading partners would hardly even notice that seigniorage reform had happened if nobody told them about it. This holds true for their everyday economic and financial routines remain undisturbed. Neither will free convertibility of the currency be affected nor will there be bureaucratic control of foreign trade or foreign exchange. Contrariwise seigniorage reform shall *"be completely in tune with open international markets and free trade (...)"* (Huber & Robertson (2000), p.56). In the medium and long term the Swiss economy shall even be very likely to attract foreign capital, since prices and interest rates are predicted to stabilize under seigniorage reform. Thus a country like Switzerland might benefit from major advantages of seigniorage reform such as enhanced economic stability, safe money and stable exchange rates. Altogether those effects are likely to be more attractive to domestic and inward investment capital, not less (p.56).

Nevertheless the exclusive initiation of seigniorage reform in such an economically small country as Switzerland also carries some potential dangers. The threat of severe currency speculation is never to be excluded, since

Switzerland's money supply remains an absolutely small figure compared to currency areas such as the U.S. or the Eurozone. Massive inflows of capital, that is overflows, might deliberately or unintentionally occur with sovereign money regime, since foreign investors might regard the newly establish monetary regime as a "safe haven" for their money and thus try to corner the Swiss currency market as to benefit from secured Swiss currency stock.

Thus in the beginning the initiation of seigniorage reform in a comparably important currency area or with several nations together might even be more desirable, because the bigger the currency area the stronger is also the power to resist troublesome influences and possible dangers from outside, i.e. from the remaining fractional reserve environment. Similarly bigger currency areas might attract and even predispose the mutual initiation of seigniorage reform with their trading partners, neighbours and associated states, since they possibly might trigger a beneficial incentive to undergo a transition towards *sovereign money* (Huber (2011), p.141). Key currency areas such as the Eurozone or the USA might pioneer *seigniorage reform* best, since their political and economic standing is above reproach. Nonetheless also smaller economies such as Switzerland, Great Britain, Sweden or Japan might resume sovereign money principles as first movers for their comparably strong currency, legal security, efficient administration and stable political conditions enable them to withstand most conceivable threats and to ensure successful adoption of a transition to plain money.

Apart from the question about the most reasonable implementation of *seigniorage reform* with either big and thus widespread currency potencies other than with smaller, stand-alone national currencies I conclude that it is a vital step to enduringly reshape present-day's monetary conditions and thus provide essential premises in order to preserve and enhance means of human livelihood of today's as well as future generations.

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