

Lazcano, Israel Cedillo

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## The Historical Role of the European Shadow Banking System in the Development and Evolution of Our Monetary Institutions

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CITYPERC Working Paper Series

## The Historical Role of the European Shadow Banking System in the Development and Evolution of Our Monetary Institutions

Israel Cedillo Lazcano

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City Political Economy Research Centre  
[cityperc@city.ac.uk](mailto:cityperc@city.ac.uk) / [@cityperc](https://twitter.com/cityperc)

City, University of London  
Northampton Square  
London EC1V 0HB  
United Kingdom

# The Historical Role of the European Shadow Banking System in the Development and Evolution of Our Monetary Institutions

Israel Cedillo Lazcano<sup>\*</sup>

## Abstract

*When we hear about the 2008 Lehman Brothers crisis, immediately we relate it to the concept of “shadow banking system”; however, the credit intermediation involving lightly regulated entities and activities outside the traditional banking system are not new for the European Financial Systems, after all, many innovations developed in the past, were adopted by European nations and exported to the rest of the world (i.e. coinage and central banking), and European innovators unleashed several financial crises related to “shadowy” financial intermediaries (i.e. the Gebroeders de Neufville crisis of 1763). However, despite not many academics, legislators and regulators even agree on what “shadow banking” is, this latter does not refer exclusively to the functions of credit intermediation and maturity transformation. This concept also refers to the creation of assets such as digital media of exchange which are designed under the influence of Friedrich Hayek and the Austrian School of Economics. This lack of a uniform definition of “shadow banking” has limited our regulatory efforts on key issues like the private money creation, a source of vulnerability in the financial system that, paradoxically, at the same time could result in an opportunity to renovate European institutions, heirs of the tradition of the Wisselbank and the Bank of England which, during the seventeenth century, faced monetary innovations and led the European monetary revolution that originated the current monetary and regulatory practices implemented around the world.*

**Keywords:** Europe, shadow banking, world-system, central banking, financial innovation, regulation

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<sup>\*</sup> Israel Cedillo Lazcano is legal advisor and researcher at Fundación Universidad de las Américas, Puebla, Mexico.

Every time we hear and/or read the term “shadow banking” most of us immediately relate it to the collapse of Lehman Brothers and the development of the American Subprime Crisis; thus, we have spent uncountable hours trying to design an optimal regulatory framework with the aim of avoiding another financial crisis of these characteristics. But, unfortunately, we do not fully understand what “shadow banking” is and does, and its role in the evolution of our Financial World System, a system that is structured around a scheme of innovative frictions under the premises of Immanuel Wallerstein (1976).

Despite these facts, for Europe, this is a familiar scenario. Historically, merchants, money changers and bankers have introduced unregulated financial innovations which were gradually adopted by European institutions. These financial developments evolved gradually and, paradoxically, constitute the cornerstone of our Financial World System.

## 1. Definition of Shadow Banking

Despite we found similar terms related to “shadow banking” in Europe such as “pseudo-banking” institutions, which was proposed by Hammond Chubb in 1872, the term “shadow banking” is relatively new in our academic and financial literature. It has been attributed to the economist and money manager Paul McCulley who in 2007 described, under this term, *“a large segment of financial intermediation that is routed outside the balance sheets of regulated commercial banks and other depositary institutions”* (McCulley 2007; Noeth and Sengupta 2011). Since then, several authors and institutions have proposed their own definitions which include common elements like trading activities of hedge funds, sovereign guarantees, and traditional financial practices like credit intermediation. Hence, we found definitions such as the following:

**Edward J. Kane** (2012: 2): *“A shadow bank is an institution or bank-sponsored special purpose vehicle that has persuaded its customers that its liabilities can be redeemed de facto at par without delay even though they are not formally protected by government guarantees.”*

**Klára Bakk-Simmon, et al.** (2012: 8): *“shadow banking” is the set of “activities related to credit intermediation, liquidity and maturity transformation that take place outside the regulated banking system.”*

**Financial Stability Board** (2011: 1): *“The “shadow banking system” can broadly be described as credit intermediation involving entities and activities outside the regular banking system.”*

**Lord Adair Turner** (Masters 2012): *“Shadow banks are institutions or chains of institutions that get involved in two particularly bank-like activities; either, they create credit, such as by using the same assets multiple times, or they engage in maturity transformation.”*

**Zoltan Pozsar, et al.** (2010: 6): *“Shadow banks are financial intermediaries that conduct maturity, credit, and liquidity transformation without explicit access to central bank liquidity or public sector credit guarantees.”*

As we can see, there is a rich and growing academic literature on this matter that, unfortunately, lacks of uniformity as consequence of the fact that there are degrees to which any particular instance of “shadow banking” replicates traditional models (Tucker 2012: 2). Additionally, these definitions are culturally constrained to a single financial phenomenon: the financial crisis of 2007. Just as George A. Akerlof and Robert J. Shiller (2009: 51) explain, our minds are built to think in terms of sequences of events with an

internal logic and dynamic that appear as a unified whole; thus, the motivations behind these definitions comes from the evolution of the referred crisis, an experience that we describe to ourselves and that creates a framework of motivation that works with a specific group of non-banks that developed and fostered practices which were supported by legal fictions such as Residential Mortgage-Backed Securities (RMBSs), Collateralized Debt Obligations (CDOs), Collateralized Loan Obligations (CLOs), Structured Investment Vehicles (SIVs), Mortgage-Backed Securities (MBSs), etc.

With the aim of contributing to a better understanding of this term, I define "shadow banking" as the set of financial institutions, activities, markets and contracts that result from the evolution of practices and traditions of private individuals and/or institutions outside the regulatory framework put in place by every nation in a particular context to regulate their financial sectors under a traditional paradigm.

## **2. Shadow Banking in Europe.**

With basis on the definition proposed in this document, it is evident that credit intermediation involving lightly regulated entities and activities outside sovereign regulatory schemes are not new for the European Financial System; after all, many innovations developed in the past were adopted by European nations and exported to the rest of the world. For example, central banking and some practices related to it were conceived originally as answers to several "shadowy" financial crises that were unleashed by European innovators.

Historically, European states have faced many of these innovations through their adoption and regulation. This pragmatic approach was consequence of the structure of the European world-system. A world-system, according to Immanuel Wallerstein, is a social system that has boundaries, structures, member groups, rules of legitimation, and coherence. Its existence is made up of the conflicting forces which hold it together by tension and tear it apart as each member seeks eternally to remold it, through specialization and innovation, to its respective advantage. Among the most important structures of the European world-system we found a power hierarchy between core states and peripheral states that are differentiated on a series of dimensions, such as the complexity of economic activities, strength of the state machinery, cultural integrity, etc. (Wallerstein 1976: 229-230). So, for our purposes, we can conclude that innovation has been a central factor in the positioning of a member in the core or the periphery of the European world-system.

Considering this cultural, political and economic structure, I present here a chain of "shadowy" financial innovations that were the forerunners of the instruments and practices that led to the collapse of Lehman Brothers, and that, paradoxically, contributed to the evolution and consolidation of our financial institutions.

### **2.1. Monetary Fictions.**

The core of our financial systems is money. Money does not occur in nature, and no similar version of it exists among any other member of the animal kingdom (Wheaterford 1997: 27). Money emerges logically as a convenient medium of exchange commodity in the context of trade among free self-seeking individuals not subject to the power of a

central public authority, whether in the form of taxation or regulation (Semenova 2011). In absence of an act of legislation, the first media of exchange were regulated by the merchants, (generally by those merchants that practiced long-distance trade and that were, consequently, exposed to a great variety of media of exchange) who set the value of the commodities used as money, divided money into "special purpose" and "all purpose" money under the anthropological premises of Karl Polanyi (1989) and Viviana Zelizer (1989), and sanctioned the bad practices related to its use. Thus, the first revolution related to the structure of modern financial systems began in Europe with the Lydian invention of coin approximately on 600 B.C. Coins are *official* products issued by sovereign entities who, through the conception of a legal fiction, represent the power, the wealth, the history and the culture of the issuer on a piece of metal or other cultural valuable commodity. So, local gods and heroes were portrayed as were real or imaginary, animals, plants, and many other objects (Doty 1978: 24; Wetterberg 2009: 15). These Lydian coins which were made of the gold-silver alloy known as *electrum* were the forerunners of the Athenian tetradrachm, the Roman aureus, denarius and sesterius, and consequently of our modern metallic coins. Coins were not unique to ancient Mediterranean, but they clearly arose there first (Ferguson 2008: 24).

The invention of coins made trade easier, and encouraged economic expansion among the earlier members of the European world-paradigm. This expansion meant that transactions got bigger, so carrying and securing coins became more troublesome (Cooper 2008: 46). Wallerstein argues that Europe, after the collapse of the Roman Empire and before the sixteenth century, moved towards the establishment of a capitalist world economy in order to ensure this economic expansion. However, this entailed the expansion of the geographical size of Western Europe, the development of different modes of labor control, and the creation of strong state machineries in the states of the referred region. This was the first time that an economic system encompassed a big continental expansion with links that superseded national or other sovereign boundaries. This world economy was not a product of expansionary policies of an empire. Only the monetary innovations and other techniques of modern capitalism enabled modern world economy to extend beyond any sovereign boundary.

As we can infer, this was a period of multiple systems of coinage, some gold, some silver, some base metal, so that any long-distance trade or tax payment was complicated by the need to convert from one currency to another (Ferguson 2008: 42). Therefore, to avoid using large amounts of coins, Renaissance moneychangers developed deposit banking in Italy which spread to Barcelona and Bruges. Through this innovation, European merchants would go to a banker and transfer funds among counts; thus, they did not have to worry about the security and integrity of their coins. This innovation diffused across mercantile Europe and jumped to the medium of exchange used for international payments called the bill of exchange (Quinn 2001: 6-8). Legally a bill of exchange is an "order to pay" that, in contrast to a modern credit-debtor relationship, which involves a bilateral agreement, there are typically at least four interested parties in a loan agreement involving a bill of exchange (Schnabel and Shin 2004: 8):

- (i) The *drawer* of the bill;
- (ii) The *drawee* of the bill;
- (iii) The *beneficiary* of the bill; and
- (iv) The *holder* of the bill.

The bill would be created by the *drawer*, who would instruct the *drawee* to pay the *beneficiary* a certain sum, at a fixed place, at some future date. The *drawee* would indicate his intention to pay the bill by signing or “accepting” it. A particular *beneficiary* could also transfer the bill to a fourth party by endorsing it over (Quinn and Roberds 2012: 5).

This innovation was revolutionary. A paper that does not contain a financial text is simply a piece of cellulose. An economic right that is not inserted in a document will be only an academic hypothesis that cannot be executed, useful only to explain the legal-financial phenomenon called incorporation. Incorporation in financial instruments, like the bill of exchange, is a legal fiction by means of which the quantity of money, rights and/or goods (present or future) shown in the instrument are in possession of the titular of the rights contained in the instrument wherever he/she goes (Dávalos 2005: 85). This revolutionary innovation developed by private institutions resulted in the consolidation of the European world-paradigm. The invention of this fiction destroyed feudalism, changed the basis of organization from heredity to money, and it changed the basis of economic power from owning land to owning fictions like stocks, bonds and corporations (Wheaterford 1997). Also, this innovation allowed nimble market players to increase leverage in buoyant financial markets and amass rapid gains at the expense of increased fragility of the system (Schnabel and Shin 2004: 2). Sounds familiar? That is probable because this innovation started the *Homo moneta* era (Cedillo 2011), a period characterized by the extensive use of monetary fictions to expand the wealth beyond rational and tangible paradigms.

Rational models, during the conformation of the basic elements that would integrate gradually the European world system, were focused on the rational administration of resources in a world of limited and tangible goods that were produced under a specialization scheme. With the monetary innovation materialized through the phenomenon of incorporation, we were able to generate wealth from almost everything, from silk to spices, from whale oil to tulips and that's how the pillars of modern financial institutions emerged. The *Homo moneta* paradigm is not constraint by natural laws, it creates wealth from nothing against the paradigms established by economists, it is more complex and reflects creativity. The inventiveness of the *Homo moneta* has created a great diversity of financial products, services, institutions and regulations that integrate every national financial system, which in turn integrate our Financial World System. As result, we were obliged to put in place limits to this inventiveness through the constitution of institutions like central banks, which were conceived as an answer to periods of financial innovation.

## **2.2. “Shadowy” crises in Europe.**

Europe has faced financial crises originated in the “shadow banking system” in the past. During the eighteenth and nineteenth century, “shadowy” innovations related to the bill of exchange unleashed two financial crises that, considering their particular elements, are compared with the Lehman Brothers collapse by authors like Stephen Quinn (2012), William Roberds (2012), Marc Flandreu (2011) and Stefano Ugolini (2011).

### 2.2.1. *Gebroeders de Neufville* crisis of 1763.

Financial activity in late eighteenth century Amsterdam was dominated by a group of banking firms known simply as *banquiers*. These institutions were not deposit banks in the Italian tradition; deposit-taking was viewed as an excessively risky source of funding (Quinn and Roberds 2012: 5). The primary role of these firms was in the payments system associated with the trade of goods through the European world-system; thus, the most prominent bankers were also merchants who extended their activities by offering credit to their clients through the acceptance of commercial bills, hence the origin of the term “merchant banker” (Fleuriet 2008: 3; Shnabel and Shin 2001: 2). Since deposits were scarce, and in the absence of large financial intermediaries analogous to today’s international banks, financial intermediation was accomplished through a securitization scheme known as *acceptcrediet*. The building block of the *acceptcrediet* was the bill of exchange. In an *acceptcrediet*, the lender was the *drawee* of a bill, typically an Amsterdam merchant banker, the *drawer* generally a Hamburg merchant banker, and the beneficiary a merchant and/or an investor. (Shnabel and Shin 2001: 6-8; Quinn and Roberds 2012: 5).

However, a critical requirement for merchant bankers was to have an account at the *Amsterdamsche Wisselbank*, and maintain an adequate balance at it. This institution, constituted in 1609, was crucial to the development of Amsterdam as a nuclear element of the European system in that period. Following the tradition of towns like Venice, Seville and Antwerp, lending was prohibited by the bank’s statutes, which stipulated that the bank was to function solely as an exchange bank in the interest of commerce; thus, by allowing merchants to set up accounts denominated in a standardized currency, the Dutch guilder, the *Wisselbank* pioneered the system of direct debits and transfers that we take for granted today, a system that Adam Smith celebrated in his *Wealth of Nations* (Ferguson 2008: 48-49; Shnabel and Shin 2001: 5; Quinn and Roberds 2012: 9; Wetterberg 2009: 18-20).

The Seven Years’ War brought an economic boom that was accompanied by a strong expansion of credit through the *acceptcrediet* in Amsterdam. The key advantage enjoyed by *Gebroeders de Neufville* and other merchant banks was their base in a mature financial market with a legal infrastructure which provided the commitment power to borrow (Shnabel and Shin 2001: 13). Consequently, Amsterdam *acceptcrediet* market financed a wide range of activities associated with the war, including the flotation of sovereign loans and movements of specie designed to take advantage of fluctuating exchange rates (Quinn and Roberds 2012: 16).

*Gebroeders de Neufville* was a lightly regulated banking house founded in 1751 by Leendert Pieter de *Neufville* and it was no more than a medium-sized firm at the beginning of the Seven Years’ War. However, during the hostilities it was catapulted into being one of the richest and most prestigious banking houses in Amsterdam. *De Neufville*’s commercial interests were wide, but one project in particular deserves special mention. After the Peace of Hubertusburg in February 1763, *Gebroeders de Neufville* was party to a major speculative deal with the Berlin merchant banker Johan Ernst Gotzkowsky. The deal involved buying a large quantity of grain from the granaries of the departing Russian army in Poland. The purchase price was one million Dutch guilders (Shnabel and Shin 2001: 15). However, the Treaty of Hubertusburg spawned two shocks that diminished the value of the collateral backing Amsterdam’s *acceptcrediet* transactions.



The first shock was a drop in the value of grain: prices in Berlin and Hamburg dropped by 30 percent between November 1762 and May 1763. Then, in May 1763, Prussia decided to dump its unused wartime grain supplies, leading to a 75 percent drop in the local price of wheat, with other commodities prices soon following. Merchants recognized that the end of the war would bring a decrease in grain prices, but a drop of such magnitude was not expected (Quinn and Roberds 2012: 16; Shnabel and Shin 2001: 15). Additionally, this commodity price shock was compounded by a monetary policy reversal. Just as Quinn and Roberds (2012) explain, during the Seven Years' War, Prussia conducted a series of debasements that influenced directly the value of the *Reichsthaler*. Thus, Prussian merchants that were holding these debased monetary units saw the value of their collateral cut in half; consequently, they responded by funding short-term debts with new bills drawn on markets such as Amsterdam, and sending demonetized coins to financial centers in the hopes of finding higher value as bullion.

Consequently, the first failures in Amsterdam derived from this shocks started on July 29 with the collapse of *Aron Joseph en Compagnie* whose suspension of payments cause, in turn, the failure of *Gebroeders de Neufville* (Shnabel and Shin 2001: 17). As result of these events, *De Neufville* suspended its obligations at the *Amsterdamsche Wisselbank* on July 30. These local failures were followed by a systemic failures within the European world-system, particularly in Amsterdam and Hamburg as result of the links established by the tight web of bills existent between the merchants of both cities.

In the lightly regulated world of the eighteenth-century finance, the *Amsterdamsche Wisselbank* worked successfully one of the first market interventions by a forerunner of our central banks. It made available unlimited amounts of liquidity within the confines of Amsterdam, on fixed terms, through the *Wisselbank's* traditional repo window (a type of policy that would be repeated 245 years later), and a second window that was opened for less conventional assets like bullion. Both liquidity facilities, prevented additional failures of major market participants, and contained the domestic fallout from the collapse of *Gebroeders de Neufville* (Quinn and Roberds 2012).

### **2.2.2. The Gurney Panic of 1866.**

The next crisis related to "shadowy" innovations generated by the innovative activities of *Homo moneta* in Europe was not long time in coming, and inspired one of the main works on the role of functions of modern central banking: Walter Bagehot's *Lombard Street* (Ferguson 2008: 55; Rochet 2008: 24; Wetterberg 2009: 215). This crisis had its origin in the British money market that traditionally emphasized the role of a particular instrument: the acceptance. Acceptances were bills that one merchant or banker (the *drawer*) had drawn on another merchant or banker (the *drawee*) and that the *drawee* had accepted by putting his signature on the bill (Flandreau and Ugolini 2011: 6).

Some contemporaneous authors, like Hammond Chubb (1872: 179), found in this scheme the first element of risk: the existence of a class of "*pseudo-banking*" establishments known as bill brokers. Acceptances were purchased through bill brokers by large commercial banks for reserve purposes. As time passed, these bill brokers started to get invested in these acceptances by themselves, using resources they collected through "call loans" from the commercial banks. The result of these practices was that they gradually evolved into unregulated money market funds: these "*pseudo-banking*" establishments came to attract on-call deposits from commercial banks, which they

reinvested in the acceptance market. Bill brokers started as private finance companies, with unlimited liability, and essentially matched the supply and demand of bills. These “shadowy” institutions flourished after the 1825 crisis, when complete illiquidity of the inter-bank acceptance market caused by rampant credit rationing pushed many London-based commercial banks to bankruptcy (Flandreau and Ugolini 2011: 9-10).

In the 1840’s Overend, Gurney and Company stood as leader of this industry, and was better known abroad than any similar firm known, perhaps, better than any purely English firm (Bagehot 1973; Rochet 2008: 24). Overend, Gurney and Co. grew out of a merger between the Gurney Bank of Norwich and the London bill broking firm of Richardson, Overend and Company. Initially their discounts were confined to bills, and its growth was based on the fundamental banking principles of carefully checking carefully the reliability of their clients. These principles helped Overend, Gurney and Co. weather the banking panics of 1825, 1837 and 1840 (Mahate 1994: 102); particularly during the crisis of 1825 it was able to make short loans to provide liquidity assistance to most of the banks on the London place and it became known as the banker’s banker (Rochet 2008: 25).

During the 1850’s Gurney underwent a significant change that disfigured it until its collapse. The prudent management of Samuel Gurney and David Barclay Chapman was replaced by a new group. The new management lacked the prudence of its predecessors. Gurney’s customers were no longer checked for soundness and the old principle of lending on real estate transactions was no longer practiced (Mahate 1994: 102-103), and it developed during 1855-65 into something that looked more like a financial conglomerate (Flandreau and Ugolini 2011: 12). Successive failures of companies whose bills Gurney had subscribed led it to end up with industrial assets, which it tried to run for its own account. The firm invested heavily in railways, steamships, land companies, hotels, shipbuilding, finance associations, building operations, the purchase of private business of individuals, and banking under improved systems, thus essentially becoming a universal bank (Chubb 1872: 180; Flandreau and Ugolini 2011: 12). In what shareholders later described as a last ditch attempt to hide its collapse, the firm, taking advantage of the 1862 Companies Act, transformed itself into a limited liability company (Chubb 1872: 180; Flandreau and Ugolini 2011: 12; Mahate 1994: 103).

The stock market collapse of late 1865 and early 1866 battered Gurney’s balance sheet. Experiencing big losses on some of its loans, Overend, Gurney and Company it was forced to declare bankruptcy on May 10, 1866 at 3:30 p.m. with more than UKP 11 million in liabilities (Flandreau and Ugolini 2011: 13; Rochet 2008: 25). As result of this failure, many small banks lost their only provider of funds and were forced to close as well. In order to avoid such crises, Walter Bagehot reformulated the Bank of England’s proper role in a crisis as the “lender of last resort”, to lend freely, albeit at a penalty rate (Ferguson 2008: 55; Rochet 2008: 25). The “lender of last resort” doctrine was first put in practice by the Bank of England during the Barings’ crisis of 1890, and was adopted in continental Europe, resulting in the absence of a major banking crisis for more than thirty years (Rochet 2008: 25).

### **3. A New Monetary Revolution.**

I have the certainty that the next monetary revolution will be a digital one, and certainly it will foster the conception of non-regulated projects. Europe, like the rest of the world, will

face the necessity to create institutional and legal structures to take advantage of these “shadowy” innovations that will emerge of it, particularly those innovations related to the issuance of digital media of exchange. The idea of digital media of exchange has the attractive of being convenient, untraceable, liberated from the oversight of governments and banks, and has been a hot topic since the birth of the Internet. However, accordingly to our current definitions of “shadow banking”, regulators around the world focus their efforts only on those activities related to the Lehman context while other unregulated intermediaries evolve, willing to usurp the functions of our traditional institutions in a variety of ways. The development of new technologies, by means of which we seek to meet the needs of the last level of Maslow's hierarchy, is changing the paradigms under which we interact within our Financial World System (King 2010), a global system that has replicated the European structure after the collapse of the Bretton Woods system. Therefore, in our particular context, information technologies are changing our perception regarding what can be considered a bank and money, and like the European merchants in early stages of the European world-system did, private individuals and/or institutions are using these technologies to go beyond sovereign restrictions.

In this document we have seen the role of European innovators in the evolution of money, the progressive dematerialization of this latter through the conception of fictions, and the institutions conceived by the European legislators to face the innovations related to this process. Throughout history, money took different forms, from commodity money to fiat money. At the end of this dematerialization process, money is taking the form of information flows through computer networks (Radovanović 2009). The science of cryptography, which is the science of keeping digital data secure, makes this possible (Nakamoto 2009; Kok 2012: 150). Digital media of exchange are unregulated online account books that measure and record transactions of financial value between nodes through the Internet which are designed and controlled by its developers (ECB 2012: 5). The first ones boomed on the strength of gaming systems, but now are moving out of virtual gaming systems into the global economy. These digital media of exchange can be classified in two main categories according to its operation: 1) that ones that operate in a closed loop (Ven, Flattr), and 2) that ones that operate in an open nodal architecture (Bitcoin, Ripple) (Stalnaker 2011). Given these features, these systems can be sub-classified into four categories: 1) digital money spendable for virtual goods and services only (Virtual money in weiqi.cn), 2) digital money spendable for both virtual and real goods and services (AceBucks), 3) digital money purchasable by real-world money (QBCoins), and 4) digital money convertible to and from real-world money (Linden Dollars) (Guo y Chow 2008). These media of exchange had begun in the public-interested spirit of open source peer-to- peer (P2P) software and libertarian political philosophy, with references to the work of August von Hayek and the Austrian school of economics (Wallace 2011).

To face the innovations related to the issuance of digital media of exchange and use them later to foster a solid integration project under our Financial World System, central banks must take advantage of the digital infrastructure. Following this objective, legislators in turn must adopt again a pragmatic approach and empower central banks to regulate the issuance of digital currency. These faculties are necessary to control the private issuance of means of payment which could easily pose problems of fraud, forgery and adverse selection under the premises of Akerlof (1970: 490); problems that led to serious crises in the banking system in Western Europe in the eighteenth and nineteenth centuries (Kok 2012: 150).

Meanwhile, transitional projects in that sense have been launched. For example, less than a week after the government of Canada decided to withdraw pennies from circulation, the Royal Canadian Mint unveiled its project for a digital currency denominated MintChip, consistent in a digital coin that will let people pay for small transactions directly using their smartphones, USB sticks, computers, tablets and clouds; and the Singapore Electronic Legal Tender (SELT) by means of which the Board of Commissioners of Currency, Singapore (BCCS) faces the widespread use of cashcards that eventually could lead to the demise of legal tender and the re-emergence of free banking, and protects the *seignorage* of the currency issuing authority (Kok 2012).

From the European perspective, Europe witnessed the origination of the *aelectrum*, the first metallic coin; the conception of the pillars of modern banking through the practices of some “shadowy” innovators; and, during the eighteenth and nineteenth centuries, the emergence of the forerunners of modern central banks in Amsterdam and London that faced successfully the failures within the European “shadow banking system”. Europe has evolved through the history of money and the financial institutions related to it, and now is time for Europe to become, one more time, the model for the rest of the world.

Considering the structure of the European world-system, if Europe does not adopt its historical pragmatic approach and follows the current regulatory tendencies that do not consider development of digital media of exchange, it will put itself in a competitive disadvantage. The European Central Bank has recognized that our current regulatory framework lag behind technological developments by some years, and works with the idea that developers of digital media of exchange could be registered as financial institutions with their respective regulatory authorities (ECB 2012: 45). Particularly I believe that this point brings a problem of agency to this proposal and, again, works with the developments of a particular context. Probably, considering the structure of the European world-system, a more interesting idea on this sense could be the insertion of a common definition of bank in the European legislative instruments that integrates not only the issuance of digital media of exchange, but also the potential of new developments structured around these monetary fictions (Cedillo 2011). This new definition would, gradually, allow us integrate new innovations to the “arsenal” of products and services of the current European institutions. Furthermore, recognizing the fact that a return to a commodity-based monetary standard is unlikely, we may expect that in the future our Financial World System could work around a “digital standard”. Considering this possible scenario, I believe that the European Central Bank has the experience and the institutional framework to regulate the “democratic” projects inspired in the work of Hayek in a context of popular aversion against the financial sector, and take advantage of them taking the regional project to the next level through a digital Euro. This digital project could represent the first step to materialize the spirit of the “*moneta imaginaria*” proposed by Gasparo Scaruffi in 1582; thus, putting the example to the rest of the world who, gradually, could insert itself into a new global paradigm structured under the premises of Wallerstein.

#### 4. References.

Akerlof, George

1970 The Market for Lemons: Quality Uncertainty and the Market Mechanism. *Quarterly Journal of Economics* 84(3): 488-500.

Akerlof, George A.; Robert J. Shiller

2009 *Animal Spirits. How Human Psychology Drives The Economy and Why It Matters for Global Capitalism*. Princeton University Press. Princeton.

Bagehot, Walter

1973 *Lombard Street*. Kegan, Paul & Co. London.

Bakk-Simon, Klára; et al.

2012 Shadow Banking in the Euro Area. *ECB Ocassional Paper Series* 133.

Cedillo, Israel

2011 *Una nueva era. Una nueva definición (A new era. A new definition)*. Presentation for the First National Congress of Financial Research (IMEF), Mexico City, August 25.

Chubb, Hammond

1872 The Bank Act and the Crisis of 1866. *Journal of the Statistical Society of London* 35 (2): 171-195.

Cooper, George

2008 *The Origin of Financial Crises. Central Banks, Credit Bubbles and the Efficient Market Fallacy*. Vintage Books, New York.

Dávalos, L. Carlos Felipe

2005 *Títulos y operaciones de crédito (Credit Instruments and Operations)*. Oxford University Press, Mexico City.

Doty, Richard

1978 *Money of the World*. Ridge Press, London.

European Central Bank

2012 Virtual Currency Schemes. *European Central Bank Report*. Frankfurt.

Ferguson, Niall

2008 *The Ascent of Money. A Financial History of the World*. The Penguin Press. New York.

Financial Stability Board

2011 *Shadow Banking: Strengthening Oversight and Regulation*. Recommendations of the Financial Stability Board, Basel.

Flandreu, Marc; Stefano Ugolini

2011 Where It All Began: Lending of Last Resort and the Bank of England During the Overend, Gurney Panic of 1866. *EHES Working Papers in Economic History* 7.

Fleuriet

- 2008 *Investment Banking Explained. An Insider's Guide to the Industry*. McGraw-Hill. New York.
- Guo, Jingzhi; Angelina Chow  
2008 *Virtual Money Systems: A Phenomenal Analysis*. University of Macau. Macau.
- Kane, Edward J.  
2012 *The Inevitability of Shadow Banking*. Presentation for the 2012 Financial Markets Conference at the Federal Reserve Bank of Atlanta. Atlanta, April 10.
- King, Brett  
2010 *Bank 2.0 How Customer Behaviour and Technology will Change the Future of Financial Services*. Marshall Cavendish Business. New Industrial Road, Singapore.
- Kok, Low S.  
2012 Singapore Electronic Legal Tender (SELT). A Proposed Concept. In *The Future of Money*, edited by the Organization for Economic Co-operation and Development, pp. 145-152. OECD Publications. Paris.
- Mahate, Ashraf A.  
1994 Contagion Effects of Three Late Nineteenth Century British Bank Failures. *Business and Economic History* 23 (1): 102-115.
- Masters, Brooke  
2012 Regulators peer into financial shadows. *Financial Times*, <http://www.ft.com/intl/cms/s/0/36878ee2-3175-11e2-b68b-00144feabdc0.html#axzz2IKhRcygB>, accessed on November 18, 2012.
- McCulley, Paul  
2007 Teton Reflections. *PIMCO Global Central Banks Focus* August/September: 1-4.
- Nakamoto, Satoshi  
2009 Bitcoin: A Peer-to-Peer Electronic Cash System. <http://bitcoin.org/bitcoin.pdf>, accessed on September 21, 2011.
- Noeth, Bryan J.; Rajdeep Sengupta  
2011 Is Shadow Banking Really Banking? *The Regional Economist* October: 8-13.
- Polanyi, Karl  
1989 *La gran transformación (The Great Transformation)*. La Piqueta, Madrid.
- Pozsar, Zoltan; et al.  
2010 Shadow Banking. *Federal Reserve Bank of New York Staff Reports* 458.
- Quinn, Stephen; and William Roberds  
2012 Responding to a Shadow Banking Crisis: The Lessons of 1763. *Federal Reserve Bank of Atlanta. Working Paper Series* 8.
- Radovanović, Predrag

- 2009 Digital Economy, Digital Money and Digital Banking. *Economics and Organization* 6 (2): 153-160.
- Rochet, Jean-Charles  
2008 *Why Are There So Many Banking Crises? The Politics and Policy of Bank Regulation*. Princeton University Press, Princeton.
- Semenova, Ala  
2007 *The Origins of Money: Evaluating Chartalist and Metallist Theories in the Context of Ancient Greece and Mesopotamia*. Thesis presented in partial fulfillment of the requirement for the degree Doctor of Philosophy. Faculty of the University Missouri-Kansas City.
- Schnabel, Isabel; Hyun Song Shin  
2004 *Liquidity Contagion: The Crisis of 1763*. Revised, May 2004 (2001). Max Planck Institute for Research on Collective Goods. Bonn.
- Stalnaker, Stan  
2011 Bitcoin, Ven and the End of Currency. <http://techcrunch.com/2011/05/20/bitcoin-ven-and-the-end-of-currency/>, accessed on October 19, 2011.
- Tucker, Paul  
2012 *Shadow banking: thoughts for a possible policy agenda*. Speech given at the European Commission High Level Conference. Brussels, April 27.
- Wallace, Benjamin  
2011 The Rise and Fall of Bitcoin. [http://www.wired.com/magazine/2011/11/mf\\_bitcoin/all/1](http://www.wired.com/magazine/2011/11/mf_bitcoin/all/1), accessed on November 24, 2011.
- Wallerstein, Immanuel  
1976 *The Modern World-System. Capitalist Agriculture and the European World-Economy in the Sixteenth Century*. Academic Press, New York.
- Weatherford, Jack  
1997 *The History of Money*. Three Rivers Press. New York.
- Wetterberg, Gunnar  
2009 *Money and Power. From Stockholms Banco 1656 to Sveriges Riksbank today*. Sveriges Riksbank with Atlantis, Stockholm.
- Zelizer, Viviana A.  
1989 The Social Meaning of Money. "Special Moneys". *American Journal of Sociology* 95 (2), p.p. 342-377.