

# IANUS

Diritto e Finanza



Quaderni

<https://www.rivistaianus.it>



ISSN: 1974-9805

Quaderni - 2014

MODULO JEAN MONNET

REGULATING DIGITAL PAYMENT SYSTEMS  
THROUGH A  
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## REGULATING DIGITAL PAYMENT SYSTEMS THROUGH A FINANCIAL GOVERNANCE PARADIGM

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*Every time we hear or read about the collapse of Lehman Brothers and the crisis that resulted from it, we relate it immediately to the term “shadow banking”; however, one aspect of the shadow banking system that has not been analysed under this figure is the proliferation of financial governance paradigms that have been materialized through peer-to-peer projects such as lending facilitators/platforms and digital media of exchange; projects structured around the ideas of Friedrich Hayek and the Austrian School of Economics. Despite the good intentions of these initiatives, good governance is needed to secure three core elements: 1) security of property rights; 2) enforcement of contracts; and 3) collective action. Although the term “governance” is relatively new, the sovereign intervention in private initiatives has a rather long history; for example, throughout this history, the issuance of private money has been subject to taxes and the seignorage.*

*In the European context, entities carrying out banking-type activities, but which were lightly regulated, were at the centre of crises such as the Gebroeders de Neufville Crisis of 1763 and the Overend, Gurney & Co. panic of 1866. In particular, the latter, was the origin of a new concept: the lender of last resort proposed by Walter Bagehot. Therefore, through an optimal financial governance paradigm we could control the interaction betwixt legislators and financial innovators; thus, allowing us to regulate and integrate some of these innovations to our payment systems.*

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*Social inventions are no less important than advances in technology. Developing new tools or weapons is one road to greater prosperity; another is the construction of new rules, customs and behaviours.*

Gunnar Wetterberg (2009)

## 1. Introduction

Money and payment systems have evolved over time. Historically, the “financialization” of the world as described by Polanyi-Levitt<sup>1</sup> has put some challenges on traditional regulatory paradigms; particularly, by those related with payment schemes that individuals periodically structure around free banking models as response to different inducements such as financial crises. This “financialization” has been structured around money and the payment systems related to it, which have evolved according to the oddities of their respective contexts. In absence of an act of legislation, the first payment systems were regulated by merchants, (generally by those merchants that practiced long-distance trade and that were, consequently, exposed to a great variety of media of exchange). Thus, they set the value of the set commodities used as money, divided money into "special purpose" and "all purpose" money under the anthropological premises of Karl Polanyi<sup>2</sup> and Viviana Zelizer<sup>3</sup>, and sanctioned the bad practices related to its use. The sovereign intervention into the process of financial innovation came at a much later stage, after some financial instruments had already emerged and evolved through the minds of some creative individuals that, in the case of some financial innovations, have even left us a signature (i.e. Satoshi Nakamoto). Despite money and financial instruments in general were not a sovereign creation, they have been perfected and adapted to the diverse and changing needs of developing trade through government recognition and regulation<sup>4</sup>.

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<sup>1</sup> POLANYI-LEVITT, *From the Great Transformation to the Great Financialization. On Karl Polanyi and Other Essays*, 2013, New York.

<sup>2</sup> POLANYI, *The Great Transformation*, 1989, Madrid.

<sup>3</sup> ZELIZER, *The Social Meaning of Money: Special Monies*, in the *American Journal of Sociology*, 1989, 95(2), 342-377.

<sup>4</sup> MENGER, *On the Origin of Money*, in the *Economic Journal*, 1892, 2(6), 239-255; SCHLICHTER, *Paper Money Collapse. The Folly of Elastic Money and the Coming Monetary Breakdown*, 2012, New Jersey; SEMENOVA, *The Origins of Money: Evaluating Chartalist and Metallist Theories in the Context of Ancient Greece and Mesopotamia*, Thesis presented in partial fulfilment of the requirement for the degree Doctor of Philosophy, University of Missouri, Kansas City.

In contexts of crisis, individuals introduce to the system alternative payment paradigms that: 1) brake the indirect model of financial intermediation and/or 2) create a new scheme of intermediation outside the regulatory framework put in place by every Nation in that particular context that, as we will see later, constitute the core of the definition of “shadow banking”<sup>5</sup>; which in turn, constitute the perfect representation of the interaction amongst the State, the civil society and the market, elements that configure the definition of “governance”.

The terms of “governance” and “shadow banking” have risen from obscurity to buzzwords status in our context post-Lehman Brothers, and as with any buzzword, everyone understands these terms a little differently. In the particular case of the former, most people’s first instinctive reaction to the recognition of the relevance of governance paradigms is that good governance should be provided by the government<sup>6</sup>. However, there are other social institutions of governance that function in niches that the government serves poorly, or not at all, and because sometimes they work better than the formal law they introduce inducements for unregulated innovation.

## 2. “Shadow Banking”

The history of “shadow banking” is one of shifts in the type of institutions involved in it, but there is a common element across the decades. “Shadow banking” has caused or been at the heart of several financial crises in different periods and one important factor behind its growth has been the style and extent of bank regulation<sup>7</sup>. For example, during the eighteenth and nineteenth century, “shadowy” innovations relating to legal-financial fictions such as the bill of exchange unleashed two financial crises that, considering their particular elements, are compared with the Lehman Brothers collapse: the *Ge-boreders de Neufville* crisis of 1763 and the *Overend, Gurney & Co.* panic of 1866<sup>8</sup>.

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<sup>5</sup> Indirect finance is materialized through constitution of financial intermediaries that mediate betwixt the primary borrower and primary lender of funds in contrast with direct finance by means of which a borrower and a lender meet directly.

<sup>6</sup> DIXIT, *Governance Institutions and Economic Activity*, in *The American Economic Review*, 99(1), 6.

<sup>7</sup> JACKSON, *Shadow Banking and New Lending Channels-Past and Future*, in BALLING-GNAN (eds), *50 Years of Money and Finance: Lessons and Challenges*, 2013, 377.

<sup>8</sup> CEDILLO, *The Historical Role of the European Shadow Banking System in the Development and Evolution of Our Monetary Institutions*, in *CITYPERC Working Paper Series*, 2013, 5, 7.

## 2.1. Defining “Shadow Banking” through “Governance”

Amongst academics, governance refers to a “new” process of governing; however, this is not so simple. If we look for a definition of the term “governance”, we will find that it is used in different contexts and it is distinguished amongst governance in public administration, governance in international relations, European Union governance, corporative governance, and governance as extolled by institutions such as the World Bank. Unfortunately for us, these uses have little or nothing in common; thus, for our purposes, we can define governance with basis on the following elements<sup>9</sup>:

- 1) Interdependence betwixt sovereign and non-sovereign actors.
- 2) Continuing interactions amongst networks members, as result of the necessity to exchange resources and negotiate shared purposes.
- 3) Game-like interactions, rooted in trust and regulated by rules of the game negotiated and agreed by network participants.
- 4) A significant degree of autonomy from the State.

In sum, governance refers to governing with and through public-private networks by means of which the State, the market and the civil society provide public goods such as monetary and financial stability. The absence of these interactions results in negative outcomes such as financial crises.

As with many debated topics such as “governance”, the source of confusion in “shadow banking” begins with its definition. Despite the fact that historically we found similar terms relating to “shadow banking” such as “pseudo-banking” institutions, which was proposed by Hammond Chubb<sup>10</sup> in 1872, the term “shadow banking” is relatively new in our academic literature. Its creation has been attributed to the economist and money manager Paul McCulley who, in 2007, described under the referred term «a large segment of financial intermediation that is routed outside the balance sheets of regulated commercial banks and other depository institutions»<sup>11</sup>. Since then, a myriad of authors and institutions have proposed their own definitions which include common elements like trading activities of hedge funds, sovereign

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<sup>9</sup> RHODES, *Understanding Governance: Ten Years On*, in *Organization Studies*, 2007, 28, 1246.

<sup>10</sup> CHUBB, *The Bank Act and the Crisis of 1866*, in the *Journal of Statistical Society of London*, 1872, 35(2), 171-195.

<sup>11</sup> MCCULLEY, *Teton Reflections*, in *PIMCO Global Central Banks Focus*, 2007, August/September, 1-4.

guarantees, and traditional financial practices like credit intermediation<sup>12</sup>. Therefore, we found definitions such as the following:

- **Edward J. Kane**<sup>13</sup>: «A shadow bank is an institution or bank-sponsored special purpose vehicle that has persuaded its costumers 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.**<sup>14</sup>: «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**<sup>15</sup>: «The ‘shadow baking system’ can broadly be described as credit intermediation involving entities and activities outside the regular banking system».
- **Lord Adair Turner**<sup>16</sup>: «Shadow banks are institutions or chains of institutions that get involved in two particular 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.**<sup>17</sup>: «Shadow banks are financial intermediaries that conduct maturity, credit, and liquidity transformation without explicit access to central bank liquidity or public sector credit guarantees».

But “shadow banking” is almost certainly broader than this<sup>18</sup>. The Institute of International Finance<sup>19</sup> accurately sees “shadow banking” in relation to three core activities of banks: 1) taking highly liquid deposits, 2) extending

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<sup>12</sup> CEDILLO, *The Historical Role of the European Shadow Banking System in the Development and Evolution of Our Monetary Institutions*, in *CITYPERC Working Paper Series*, 2013, 5, 2.

<sup>13</sup> KANE, *The Inevitability of Shadow Banking*, Presentation for the Financial Conference at the Federal Reserve Bank of Atlanta., Georgia, 2012, 2.

<sup>14</sup> BAKK-SIMON et al, *Shadow Banking in the Euro Area*, in *ECB Occasional Paper Series*, 2012, 133, 8.

<sup>15</sup> FSB, *Shadow Banking: Strengthening Oversight and Regulation, Recommendations of the FSB*, 2011, 1.

<sup>16</sup> MASTERS, *Regulators peer into financial shadows*, in *Financial Times*, 2012, <http://www.ft.com/intl/cms/s/0/36878ee2-3175-11e2-b68b-00144feabdc0.html#axzz2IKhRcygB>

<sup>17</sup> POZSAR et al., *Shadow Banking*, in *Federal Reserve Bank of New York Staff Reports*, 2010, 458, 6.

<sup>18</sup> JACKSON, *Shadow Banking and New Lending Channels-Past and Future*, in BALLING-GNAN (eds), *50 Years of Money and Finance: Lessons and Challenges*, 2013, 377.

<sup>19</sup> IIF, “Shadow Banking”: *A Forward Looking Framework for Effective Policy*, 2013, Washington, D.C., 4.

credit, and 3) providing a payments system; which have been driven outside the traditional system by light or non-existent regulations. So, 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 respective financial sectors.

## 2.2. Where are we going? and how do we get there?

Particularly, the past five decades have seen a destabilization of the traditional governing mechanisms and have been characterized by liberalisation and deregulation under new arrangements of governance. Consequently, people and institutions have been allowed more and more to define and follow their own goals outside traditional regulatory paradigms<sup>20</sup>, despite the fact that some sectors such as banking have always tended to be regulated more than other areas of the economy because of its inherent “dangerous” systemic nature, which has been recognized for long<sup>21</sup>. So, one question is what lies ahead?

Historically, the State manage innovations to some degree by coming in to support the private media of exchange and/or payment systems through their gradual nationalization. An illustration of this is the Medici banking house, which made its financial mark through the *banchi grossi*<sup>22</sup> model by dealing merchandise and facilitating money transfers for merchants and traders across renaissance Europe<sup>23</sup>. The system the Medici developed exploited

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<sup>20</sup> BERNANKE, *The Effects of the Great Recession on Central Bank Doctrine and Practice*, Speech at the Federal Reserve Bank of Boston 56<sup>th</sup> Conference, 2011, Boston; BALLING-GNAN, *Shadow Banking in the Euro Area*, in *ECB Occasional Paper Series*, 133; WEISS, *Governance, Good Governance and Global Governance: Conceptual and Actual Challenges*, in *Third World Quarterly*, 2009, 21(5).

<sup>21</sup> BALLING-GNARR, *Shadow Banking in the Euro Area*, in *ECB Occasional Paper Series*, 133.

<sup>22</sup> In Florence, in the fifteenth century, there were four different credit intermediaries called banks in Italy: *banchi di pegno*, *banchi a minute*, *banchi in mercato*, and *banchi grossi*. DE ROOVER, *The Medici Bank Organization and Management*, in *The Journal of Economic History*, 1946, 6 (1), 24-52.

<sup>23</sup> DE ROOVER, *The Medici Bank Organization and Management*, in *The Journal of Economic History*, 1946, 6(1), 24-52; KAMINSKA, *The theory of money entanglement (Part 2)*, in *Financial Times*, 2013, <http://ftalphaville.ft.com/2013/12/19/1728302/the-theory-of-money-entanglement-part-2/>

the fact that it was not only extremely cumbersome and dangerous for traders to carry heavy coinage with them to foreign lands, but also incredible expensive to convert such currencies into local equivalents because of foreign money bans or capital controls<sup>24</sup>. However, through the Medici system a *prenditore* could deposit his collateral at home, be issued a Medici bill of exchange, then pay for the goods at the destination point via the liquidation of the referred bill at the prevailing local currency rate with basis on gold florin<sup>25</sup>. This, of course, is not dissimilar to how digital media of exchange operate: Medici bills became money-like in their own right, bestowing the Medici with the awesome power of *seignorage*. However, the Medici's ability to exploit that power in the modern free banking sense was constrained by usury laws of the day. Thus, much of it was directed at lending to governments<sup>26</sup>.

Now, despite that the Medici case is a very old example, for Europe, this is a familiar scenario. European merchants, money changers and bankers have introduced unregulated financial innovations, such as Lydian coins, which were gradually regulated and adopted by European institutions. These financial developments have evolved progressively and, paradoxically, they constitute the fulcrum of our Financial World System; thus, we can affirm that financial innovation periodically change the legal framework within which financial markets in Europe, and that the current innovations will force us to adapt regulatory frameworks around the world to include innovations such as Peer-to-Peer lending and digital media of exchange in our regulated payment systems.

### 3. Peer to Peer Lending

Media around the world tell us when the economy goes into recession that it is necessary to “restore confidence<sup>27</sup>. Confidence plays an important role in understanding economic growth, financial development, low stock market

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<sup>24</sup> COOPER, *The Origin of Financial Crises. Central Banks, Credit Bubbles, and the Efficient Market Fallacy*, 2008, New York; KAMINSKA, *The theory of money entanglement (Part 2)*, in *Financial Times*, 2013, <http://ftalphaville.ft.com/2013/12/19/1728302/the-theory-of-money-entanglement-part-2/>

<sup>25</sup> DE ROOVER, *The Decline of the Medici Bank*, in *The Journal of Economic History*, 1947, 7(1), 69-82; KAMINSKA, *The theory of money entanglement (Part 2)*, in *Financial Times*, 2013, <http://ftalphaville.ft.com/2013/12/19/1728302/the-theory-of-money-entanglement-part-2/>

<sup>26</sup> KAMINSKA, *The theory of money entanglement (Part 2)*, in *Financial Times*, 2013, <http://ftalphaville.ft.com/2013/12/19/1728302/the-theory-of-money-entanglement-part-2/>

<sup>27</sup> AKERLOR-SHILLER, *Animal Spirits. How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism*, 2009, New Jersey.



participation, diversification on investors' financial portfolios, as well as the pattern of cross-border investments<sup>28</sup>; confidence, in theory, is rational: people use the information at hand to make rational predictions<sup>29</sup>. Consequently, information asymmetry betwixt financial institutions and borrowers is one of the key issues in the financial sector<sup>30</sup>.

Banks are the materialization of a good governance paradigm because they are designed as delegated monitors. Authors such as Xavier Freixas and Jean-Charles Rochet<sup>31</sup> argue that banks exist because ensuring the enforcement of contracts is costly; hence, intermediaries are established to economize on the actions required to achieve that social goal. However, following the financial crisis, the bank's retrenchment has given a boost to small-scale operators such as loan sharks, pay day lenders, pawnbrokers amongst others. According to the Economist<sup>32</sup>, the value of payday loans in Britain more than doubled betwixt 2010 and 2012, to almost £800m. More importantly, these shadowy institutions have encouraged a new form of grass-roots finance: peer-to-peer lending<sup>33</sup>.

Peer-to-peer lending is the practice of direct unsecured lending to small businesses or individuals by other individuals and potentially other businesses, but in terms of quantity is predominantly lending to individuals<sup>34</sup> through some sort of online system<sup>35</sup>. All peer-to-peer lending communities operate on the principle of "full financing" (i.e. the loan request gets funded only if it receives enough bids to cover the entire amount requested by the

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<sup>28</sup> DUARTE-SIEGELL-YOUNG, *Trust and Credit*, Electronic Document, 2013, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1343275](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1343275)

<sup>29</sup> AKERLOR-SHILLER, *Animal Spirits. How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism*, 2009, New Jersey.

<sup>30</sup> LIN, *Peer-to-Peer Lending: An Empirical Study*, Document accepted for its inclusion in AMCIS Consortium, 2009, San Francisco.

<sup>31</sup> FREIXAS-ROCHET, *Economía Bancaria*, 1997, Madrid, 36-37.

<sup>32</sup> THE ECONOMIST, *Shadow and Substance*, in *The Economist*, 2014, 41(8886).

<sup>33</sup> JACKSON, *Shadow Banking and New Lending Channels-Past and Future*, in BALLING-GNAN, *50 Years of Money and Finance: Lessons and Challenges*, 2013. THE ECONOMIST, *Shadow and Substance*, in *The Economist*, 2014, 41(8886).

<sup>34</sup> JACKSON, *Shadow Banking and New Lending Channels-Past and Future*, in BALLING-GNAN, *50 Years of Money and Finance: Lessons and Challenges*, 2013.

<sup>35</sup> THE ECONOMIST, *Shadow and Substance*, in *The Economist*, 2014, 41(8886).

borrower)<sup>36</sup>. The peer-to-peer firm is only an intermediary and does not underwrite the risk as described by authors such as Mehrling<sup>37</sup>, and Freixas and Rochet<sup>38</sup> under the traditional financial intermediation model, but they provide other services such as marketing to attract lenders and borrowers and information gathering and monitoring; depending heavily on whether information production in this context can prove to be no less efficient than what is produced by regulated intermediaries<sup>39</sup>. Some offer insurance against defaults, others pass losses directly to investors<sup>40</sup>. Lenders earn a higher rate of interest than they can get on a bank deposit, and borrowers generally pay less than they would for a loan from a traditional source. The peer-to-peer firm makes money by leaving a fee, usually a small percentage of the money lent<sup>41</sup>.

Initially, one could be tempted to think that the regulation of these firms could be relatively easy as result of the regulations relating to Big Data that are appearing around the world, and the regulations on money transmitters that have been put in place trying to face some financial innovations in digital contexts with basis on legal definitions of money. Unfortunately, we have not considered that these firms could, eventually, work with unregulated digital media of exchange; thus, creating systemic risk due to the volatile nature of the latter.

#### 4. Hierarchy of Money

Always and everywhere, monetary systems are hierarchical. Historically, economists around the world try to get an analytical grip on this empirical fact is to distinguish “money” from “credit”<sup>42</sup>; thus, we can start our analysis on the hierarchy of money with basis on the remnants of an old paradigm: barter.

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<sup>36</sup> HERZENSTEIN et al., *The Democratization of Personal Consumer Loans? Determinants of Success in Online Peer-to-Peer Lending Communities*, Electronic Document, 2008, [www.rice.edu/nationalmedia/multimedia/online](http://www.rice.edu/nationalmedia/multimedia/online)

<sup>37</sup> MEHRLING, *The Inherent Hierarchy of Money*, in *Social fairness and economics: economic essays in the spirit of Duncan Foley*, 394-404.

<sup>38</sup> FREIXAS-ROCHET, *Economía Bancaria*, 1997, Madrid.

<sup>39</sup> JACKSON, *Shadow Banking and New Lending Channels-Past and Future*, in BALLING-GNAN, *50 Years of Money and Finance: Lessons and Challenges*, 2013, 401. LIN, *Peer-to-Peer Lending: An Empirical Study*, Document accepted for its inclusion in AMCIS Consortium, 2009, San Francisco, 3.

<sup>40</sup> THE ECONOMIST, *Shadow and Substance*, in *The Economist*, 2014, 41(8886).

<sup>41</sup> THE ECONOMIST, *Shadow and Substance*, in *The Economist*, 2014, 41(8886).

<sup>42</sup> MEHRLING, *The Inherent Hierarchy of Money*, in *Social fairness and economics: economic essays in the spirit of Duncan Foley*, 394-404.

Long time ago, the first trade was conducted via barter by means of which all goods were exchanged directly for all other goods. However it was not a great system; for example, if you wanted to swap your fish for a loaf of bread, but the baker happened to want firewood, you were stuck with the task of traipsing around the market until you could find someone with firewood who just happened to want fish. Despite its drawbacks societies around the world muddled along with barter exchange for a few hundred thousand years<sup>43</sup>. This problem led to the social invention of money, which gradually was adopted by sovereign entities through regulation.

Sovereign currencies are a form of sovereign credit in the sense that they are promises to pay a certain amount of a particular commodity with basis on a particular legislation. In theory, if we take a metallic standard as our basic paradigm, a currency may be backed mostly by silver and/or gold, in the sense that the issuer of the currency holds some silver and/or gold in its vaults. Further down the hierarchy, bank deposits are promises to pay currency on demand, so they are twice removed promises to pay the ultimate money, and securities are promises to pay currency over some time horizon in the future, so they are even more attenuated promises to pay<sup>44</sup>.

Despite the sovereign intervention in the evolution of money, in contexts of crisis, individuals introduce to the system alternative media of exchange based on some cultural elements, in our particular case, elements relating to the context of the information society.

#### 4.1. Digital Media of Exchange

If we analyse the historical evolution of money, we can appreciate its progressive dematerialization. As electronic payments get easier, notes and coins make up only a tiny part of the money in circulation: just 3% in Britain, for example<sup>45</sup>. At the end of this dematerialization process, money takes the form of information flows through computer networks either at a bank or at the central bank<sup>46</sup>. The science of cryptography, which is the science of keeping

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<sup>43</sup> COOPER, *The Origin of Financial Crises. Central Banks, Credit Bubbles, and the Efficient Market Fallacy*, 2008, New York.

<sup>44</sup> MEHLING, *The Inherent Hierarchy of Money*, in *Social fairness and economics: economic essays in the spirit of Duncan Foley*, 394-404.

<sup>45</sup> THE ECONOMIST, *Leaving Dead Presidents in Peace*, in *The Economist*, 2014, 41(8905).

<sup>46</sup> RADAVANOVIC, *Digital Economy, Digital Money and Digital Money*, in *Economics and Organization*, 2009. 6(2), 153-160; THE ECONOMIST, *Leaving Dead Presidents in Peace*, in *The Economist*, 2014, 41(8905).

digital data secure, makes this possible<sup>47</sup>. With basis on this, we can define digital media of exchange as unregulated online accounts that measure and record transactions of financial value amongst nodes through the Internet which are designed and controlled by their developers<sup>48</sup>. The first ones boomed on the strength of gaming systems, but now these innovations are moving out of virtual gaming systems into the global economy. These media of exchange had begun in the public-interested spirit of open source P2P software and libertarian political philosophy, with references to the work of Friedrich Hayek and the Austrian School of Economics<sup>49</sup>.

#### 4.1.2. “Digital Currencies”. An abuse of language

If we write the word “currency” in the web search engine of our preference, immediately we will find many results relating to “virtual currencies”, “digital coins”, and financial innovations such as Bitcoins, Litecoins, Facebook credits, and Vens, amongst others. As we can see, practically all aspects that integrate the monetary theory can now be represented, scrutinized, processed, digitized and recorded, circulating amongst the information society in the form of binary digits and algorithms; thus, our context turns the task of distinguishing the Metallist-legal concept of “currency” and the generic “money” under a Chartalist approach. In strict legal terms, we use the term “currency” only to define a sovereign medium of exchange recognized by every Nation through their respective monetary legislations. If we analyse these latter, most of them do not integrate in their content, the innovations that constitute private money. For example, according to the article 105a (2) of the Treaty establishing the European Community, the single currency is materialized through coins and bank notes issued with the authorization of the European Central Bank (ECB), and these pieces of metal and paper, as established in their respective regulations, have the status of legal tender within the Community.

In our Financial World System, the lack of a uniform definition adjusted to the spirit of the context, has fostered a myriad of interpretations on the nature of these innovations, in occasions, in opposition to the content of most

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<sup>47</sup> NAKAMOTO, *Bitcoin a Peer-to-Peer Electronic Cash System*, Electronic Document, 2009, <http://bitcoin.org/bitcoin.pdf>. KOK, *Singapore Electronic Legal Tender (SELT). A Proposed Concept*, in OECD, *The Future of Money*, 2012, 145-152.

<sup>48</sup> ECB, *Virtual Currency Schemes*, 2012, Frankfurt.

<sup>49</sup> WALLACE, *The Rise and Fall of Bitcoin*, in *Wired Magazine*, 2011, [http://www.wired.com/magazine/2011/11/mf\\_bitcoin/all/1](http://www.wired.com/magazine/2011/11/mf_bitcoin/all/1).

monetary legislations in force around the world. In some jurisdictions, these innovations have been classed as money, but if we analyse their respective legal definitions of money, we will appreciate that most of these definitions are restricted to the official media of exchange issued by foreign sovereign entities that interact with local currencies.

This abuse of language is not new. If we study contexts relating to this problem such as the nineteenth century of H.D. Macleod where some enthusiasts tried to include under the term “currency” instruments such as bills of exchange and deposits<sup>50</sup>, or our particular context where Matt Clinch<sup>51</sup> of CNBC affirmed erroneously, through the popular interpretation of “currency”, that Bitcoin was considered legal tender under the German legislation<sup>52</sup>. Against these misinterpretations, Samuel Jones Loyd, Lord Overstone, stated accurately that these innovations do not constitute a currency because this term contemplates only the precious metals converted into coin under a sovereign act, and the notes that, through a legal fiction denominated incorporation<sup>53</sup>, represent a particular amount of coins, constituting the currency of a particular country<sup>54</sup>.

Just as Macleod<sup>55</sup> explains, this term has its origin in the foundation of the Common Law that established that the property of money passed along with the honest possession of it in every exchange, and from this institutionalized practice, money was said to be current, and from this exceptional property, the expression arose of the currency of money, and gradually it was a common practice to call the money itself currency. If we work with this original definition, certainly we can use the word currency to describe digital media of exchange under a Chartalist theory of money’s origin, considering that the term money is a generic used to describe private innovations and sovereign currencies.

However, there is a difference betwixt the original and the current uses derived from the evolution of law and the legal use of the generic money. As result of this latter, some governmental agencies and economists ignore the

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<sup>50</sup> MACLEOD, *Theory and Practice of Banking*, 1906, London.

<sup>51</sup> CLINCH, *Bitcoin recognized by Germany as ‘private money’*, CNBC, 2013, <http://cnbc.com/id/100971898>.

<sup>52</sup> CNBC recognized later that this story incorrectly stated that the virtual “currency” was legal tender, confirming the original criteria that defines this innovation only as “private money”.

<sup>53</sup> DAVALOS, *Títulos y operaciones de crédito*, 2005, Mexico City, 85.

<sup>54</sup> MACLEOD, *Theory and Practice of Banking*, 1906, London, 316.

<sup>55</sup> MACLEOD, *Theory and Practice of Banking*, 1906, London, 292.

legal definitions that apply to our context or have not been aware of their existence and use the term “currency” to apply to all media of exchange, including credit instruments and bank credit.

## 5. Regulation or Governance?

Regulating the innovation and the use of technology is an inherently difficult task. Society has placed a high value on rapid technological advancement. Unfortunately, the concomitant development of the law to account for the effects of new technologies frequently occurs very slowly just as we have recognized in documents such as “Virtual Currency Schemes” issued by the European Central Bank<sup>56</sup>. Consequently, under the same spirit of the Directive 2009/110/EC of the European Parliament and the Council, we have to create flexible, technologically agnostic rules, which in turn will depend critically on clear definitions of “bank” and “currency”. For this purpose, we should first achieve, through uniform definitions, a good understanding of the structure and properties of the existent “shadow banking” system. Thus, we could determine whether existing institutions are there for good reason, and how our reforms would interact with these innovations in the short and in the long run, analysing the applicability of the Gresham’s law as result of the gradual dematerialization of money, its impact on the *seignorage* of central banks, and its relevance for monetary legislations around the world in order to study the viability of a reform to empower sovereign entities such as central banks to issue and regulate digital currencies.

This task sounds relatively easy, but law and economics involves the study of how people, under a rational paradigm, use and allocate finite resources. However, when the analysis goes beyond a particular culture or era, detecting regular relationships becomes more difficult. Changes in technology, institutions and customs alter the circumstances on which choices are based, sometimes to such an extent that time honoured truths and rules of thumb no longer apply<sup>57</sup>.

Consequently, for our purposes, we have to accept that “governance” is important because markets, and financial transactions, more generally, cannot

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<sup>56</sup> ECB, *Virtual Currency Schemes*, 2012, Frankfurt

<sup>57</sup> WETTERBERG, *Money and Power. From Stockholms Banco 1656 to Sveriges Riksbank today*, 2009, Stockholm, 11.

function well in its absence. A good governance paradigm is needed to secure three essential prerequisites of market economies<sup>58</sup>:

1) Security of property rights: In its absence, individuals will lack the inducements to save and invest through these innovations, because they will fear that others, such as in the case of Mt. Gox, will deprive them of the fruits of these activities.

2) Enforcement of contracts: Economic transactions promise gains to all voluntary participants, but each party may lose if the other fails to fulfil its promised role in the transaction, but instead acts opportunistically under a free-rider scheme. Fear of such counterparty cheating may prevent people from entering in agreements involving digital media of exchange. Formally, as Dixit affirms, this is a bad equilibrium in a prisoner's dilemma.

3) Collective action: Much private interactions depend on an adequate provision of public goods and the control of public "bads", including not just physical but also institutional and regulatory framework to avoid free-riding.

In our context, public administration and the development of legal frameworks are the subject of several debates betwixt the ordinary citizen and the sovereign institutions. Legislate in the postmodern era means considering ordinary people and the schemes of civil association that foster social manifestations such as the proliferation of peer-to-peer lending platforms and digital media of exchange. Before, legislative and regulatory acts were design to face and satisfy massive and anonym interests, but now our legislators and regulators around the globe are facing challenges that have their origin in the diversity of interests that demand solutions to particular problems.

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 peer-to-peer projects, 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 innovators could be registered as financial institutions with their respective regulatory authorities<sup>59</sup>. Particularly I believe that this point brings a problem of agency to this

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<sup>58</sup> DIXIT, *Governance Institutions and Economic Activity*, in *the American Economic Review*, 99(1), 5.

<sup>59</sup> ECB, *Virtual Currency Schemes*, 2012, Frankfurt, 45.

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. 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 around the premises of Immanuel Wallerstein<sup>60</sup>.

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<sup>60</sup> WALLERSTEIN, *The Modern World-System. Capitalist Agriculture and the European World-Economy in the Sixteenth Century*, 1976, New York.



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