

Innovation in Financial Services: A Dual Ambiguity

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Edited by

Anne-Laure Mention and Marko Torkkeli

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P U B L I S H I N G

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INTRODUCTION

INNOVATION IN FINANCIAL SERVICES: UNVEILING AMBIGUITY

ANNE-LAURE MENTION
AND MARKO TORKKELI

This book, “Innovation in Financial Services: A Dual Ambiguity” brings together some of the latest thinking in the growing field of innovation in services and more particularly, in financial services. It explores the peculiarities of innovation in financial services firms and surrounding market players, discusses the determinants and success factors of the innovation process and investigates its impact; thus embracing the whole innovation lifecycle. It provides topical insights on the challenges facing the financial industry, such as the convergence with other sectors and the increasing regulatory burden. By combining multidisciplinary approaches and by selecting a number of cutting-edge research models, theories, empirical findings and practitioners’ insights, it offers unique and contemporary perspectives on innovation for a sector of paramount importance for the running of our economies.

Financial services represent a considerable economic sector at a global scale. In Europe, for example, financial services represented roughly 6% of gross value added in 2010 (Eurostat). In OECD countries, financial intermediation, real estate, renting and business activities accounted for almost 30% of total value added in 2010, while it represented about 10% in China and 17% in Russia (OECD, online library). Besides its dominant role per se, the financial industry also affects the proper functioning of the entire economy. Despite its central and essential role, this sector has largely been neglected in innovation studies. To some extent, this may be attributed to the fact that innovation is largely hidden, of intangible nature and hard to visualize in financial industries. Additionally, financial firms, rarely have a dedicated Innovation or R&D department and the closest corporate functions in many financial institutions, at least as far as Europe

is concerned, is the marketing department, which role may be essential in implementing open innovation, as a form of enhanced collaboration in order to create growth for the company and distinguish itself from its competitors.

Additionally, financial services have long been considered as conservative when it comes to innovation. The natural tendency of financial firms to adopt a risk-adverse attitude, with some notable exceptions, which will be discussed later, combined to the common belief that most financial innovations are mere imitations of existing products, have indeed contributed to this reputation of innovation laggards. After all, can introducing a new savings product, which operates on a $D+2/D-2$ value dating instead of $D+5/D-5$, be really considered innovative? The relatively scarce literature stream that, has hitherto focused on innovation in financial services, has mainly unveiled the factors predicting the occurrence of financial innovation and has put strong emphasis on technology-induced and enabled innovations, such as ATMs, mobile banking, e-banking, video banking and the like (e.g. Consoli, 2008; Pennings and Hariento, 1992). The ubiquitous role of information and communication technologies certainly contributes into shaping innovations in financial services, but the human and organizational sides that are intrinsically linked to the adoption of technologies should not be overlooked. Quite surprisingly though, the process of innovating in financial services has been largely disregarded; or has been explored within larger studies embracing all service industries; irrespectively of the distinctive features of the financial sector. Furthermore, the impact that innovation, or the lack of innovation, has had on households, firms and societies, has largely been overlooked too. Nevertheless, it is fairly obvious that financial services have evolved over time, as we describe in more details a bit later and this affects the running of the entire economy. Shifts in banking and accounting practices, increased complexity of procedures and processes have introduced long delays in payments of invoices for procurement services, thus challenging the survival of small and medium-sized firms that do not have the necessary cash flow to absorb these delays. Similarly, the reluctance of banks to grant loans to firms holding few tangible assets, which is typically the case of high technology start ups and potentially high growth firms, is a major hampering factor for economic development, growth and competitiveness. We support that innovation in financial services has a critical role to play so as to sustain the operations of the other economic sectors.

Recently, innovation in financial services has attracted increasing attention and criticism since the beginning of the financial and subsequent

economic turmoil. Nobel Laureate Paul Krugman states that it is “hard to think of any major recent financial innovations that actually aided society” (The New York Times, 2009). Critics of financial innovations argue that recent innovations were not aiming at the “enhancement of the ability of the financial sector to perform its social function” (Joseph Stiglitz, cited by The Economist, February 2012), but rather embraced “opaque pricing including billing tricks and traps ... that encourages unsafe lending practices” (Pew Charitable Trusts, 2009, cited by Lerner and Tufano, 2011) and had hardly any visible effect on the productivity of the economy according to Volcker, quoted in 2009. Furthermore, Volcker also stated that ATM was the only financial innovation he can think of that has improved society. Overall, this has fuelled a negative perception of novelties developed in this industry. With this book, our intent is to illustrate that innovation should not be feared as such, as it is an acknowledged driver of growth and competitiveness and it should bring benefits for the society as a whole. Nevertheless, we claim that innovation should be properly designed, sustainably managed and correctly implemented. In our view, beneficial financial innovation is the type of innovation that serves the interests of individual customers, households and states, thus positively affecting the functioning of society as a whole. Along these lines, we adopt a broad conception of financial innovation, which encompasses both the process of innovating in financial services and its outcomes, i.e. the introduction of novelties either internally or in the market, irrespectively of their degree of novelty. Accordingly, innovations do not have to be developed internally but can be either jointly developed with partners in the context of strategic alliances, cooperation agreements, joint ventures or can represent mere adoptions of externally developed innovations. More specifically, our definition embraces “changes in the offerings of banks, insurance companies, investment funds and other financial service firms, as well as modifications to internal structures and processes, managerial practices, new ways of interacting with customers and distribution channels” (Mention and Torkkeli, 2012).

Over the last decades, financial industries have gone through significant changes and shifts, which may be attributable to several contextual elements: the changes in the macroeconomic conditions; the accrued automation of processes and the increasing role of information and communication technologies; the concomitant wide scale digitalization and dematerialization; the subsequent waves of regulation, deregulation and re-regulation; the massive trend towards consolidation and constitution of bank-insurance conglomerates, through large mergers and acquisitions; drastic changes in the demand for financial services and

in customer preferences; the shift from an intermediation business to fee producing, off-balance sheet activities; stronger requirements regarding capital requirements and capital adequacy; the introduction of new market players offering competitive products and services, such as loans, credit facilities and insurance contracts; the emergence of branchless banks, the progressive disappearance of physical branches especially in remote areas, and the shift towards a “do it yourself” model for basic transactions such as payments; and finally, the globalization and increasing cross-border trade (Flier et al., 2001; Goddard et al., 2007; Mention and Torkkeli, 2012; Rossignoli and Arnaboldi, 2009). All these phenomena, ranging from technological change to regulatory frameworks, have stimulated innovations, in various forms and extents within financial firms. They have also triggered a reshaping of the industry, with increasing linkages among market players, either through cooperation or to a large extent, co-competition, leading to the emergence of new ecosystems. Another interesting feature, characterizing the evolution of the financial sector, is the growing importance of crowdfunding. Yet, relatively small in terms of volume, with about 735 MEUR recorded in 2012 and the identification of roughly 200 platforms (European Commission), this new means of financing is increasingly attracting interest, showing a 65% increase in volume in 2012. Another recent trend in the financial sector is the emergence of digital currencies, free of central bank supervision and independent from any country, such as the Bitcoin, which is scrutinized in Hilmola’s contribution.

Numerous scholars have highlighted the need for further understanding what financial innovation is, how it happens and which are its effects at different levels, including firm-level performance, impact on the functioning of other firms and on societies. By nature, innovation in and for financial services is highly intangible. It does not materialize itself in similar ways than innovation in manufacturing industries, with tangible products as outcomes. Innovation in financial services is multifaceted, with the traditional distinction between product, service and process innovations being largely irrelevant, as it also applies for most service industries (de Jong et al., 2003). The outcome of the innovation process is usually largely relying on a combination of multiple innovation types and frequently resulting in a bundle of new products and services, which are offered through innovative channels to customers. Recent literature and trends have stressed out that challenges for innovation in financial services are multifold and mainly stem from the undeniable role of regulation, the relative lack of formal appropriability mechanisms, the dominant use of new technologies including social media, the shift in behavior and towards

accrued customer centricity, the automation of processes and the rebuilding of trust and confidence (Mention and Torkkeli, 2012). These and other topical matters are discussed in this book, which combines pure academic and practitioners' perspective, thus enriching the debate with insights from multiple stakeholders.

Many business leaders and scholars alike have been debating about the proliferation of regulations for financial institutions, highlighting the complexity that those regulations create and the increasing compliance, audit and risk management costs. Scholars have been arguing whether regulation acts as an innovation catalyst or is a hampering factor (Marcus, 1981). Miller (1986) claims that regulation has been one of the main drivers for successful innovations, for decades. On the other hand, Merton (1995, p.471) contends that regulation can hinder the proper functioning of the "engine of innovation" and consequently constrain the achievement of greater efficiencies in the financial system, as a whole. Kane (1997), who coined the term "regulatory dialectic", posits that these subsequent waves of regulation, de-regulation and re-regulation, induce short-term innovations, which do not positively impact the financial system regarding improved efficiency or market effectiveness, in the long run (Anderloni and Bongini, 2009). Another leading scholar in the field of financial innovation, Lerner, further develops that the regulatory burden may deter young and inexperienced firms from engaging into the innovation process, due to resource scarcity and, therefore, provides argumentation that such a regulatory burden may create innovation barriers. From the practitioners' perspective, regulation is also perceived as a means to increase transparency, to reinforce customer protection and, also, to stimulate innovation. The latter can be exemplified by the elaboration of the UCITS (Undertakings for Collective Investment in Transferrable Securities) at EU level. Another example is MIFID (Market in Financial Instruments Directive), which entered into force in 2007 and requires European banks to comply with greater transparency on pricing structures and risk conflicts, to demonstrate best execution practices and to gain a deeper understanding of customer profiles. Basel II and recent developments also drastically affect bank's operations by aligning capital requirements with modern risk management practices (Fasnacht, 2009). The financial crises also led to a regulatory response from the European authorities, among others. In Europe, this regulatory response has targeted two levels: one at the macro level led by the European System Risk Board and another at the micro level led by a number of authorities. New regulatory structures to supervise the financial regime in the EU, at both the macro and micro levels, should provide more security to the regime against breakdowns.

However, the powers of these supervisory bodies may be limited and better cooperation amongst these individual bodies and with other national and international regulatory bodies may be needed. Furthermore, the observation that internationalization of finance is going backwards, as pointed out by Grülms during his Address at the Innovation for Financial Services event in 2013, is highly preoccupying. The financial industry used to rank among the most globalised ones in the years preceding the financial crisis. According to McKinsey Global Institute, between 1990 and 2007, cross-border bank flows increased about tenfold, reaching about five US trillion. The same indicator for 2012 shows that these flows are currently at a third of this amount, with Europe being the most affected region. This financial fragmentation undeniably challenges one of the greatest promises of globalization, which is the access to foreign capital. Recent illustrations from Southern European countries, where businesses face up to 160 basis-point interest rates than their German counterparts, exemplify the ring-fence, nationally-focused strategies adopted by some economies (Grülms, 2013). Effects of financial fragmentation may induce lower competition, as “often pampered domestic banks do not face nimbler foreign rivals” (Grülms, 2013). In an exploration of 11 Latin-American markets, over an eight-year period characterized by large-scale consolidation, restructuring of the market and internationalization of the sector, Yildirim and Philippatos (2007) have highlighted that domestic banks have increased their efficiency, while deteriorating their profitability, due to reduced margins when threatened in their market positioning by new entrants.

Exploring the drivers of innovation in financial services in one of the most innovative economies in booming Asia, Smith highlights that regulation is a double-edged sword as it simultaneously fosters innovation, through the requirements of adopting new systems, technologies, complying with new rules and also hampers it, as innovation may represent a threat in terms of meeting compliance and risk management policies. The role of public policies and public bodies is also mentioned as one possible driver of innovation, as agencies and focused industrial policies can leverage innovation through investment in education, facilitation of management buy-in and shift in practices. Da Silva also explores the various policies, incentives and instruments that have been elaborated and implemented so as to ensure financial inclusion in a large emerging economy in South America.

Another peculiarity of financial services pertains to the challenges innovators face to appropriate and reap the benefits of their novelties. Until recently, most of the innovations from financial services were not

considered eligible for patent protection (Kumar and Turnbull, 2006; Lerner, 2006). This appropriability concern applies to different extents across continents due to the lack of international harmonization surrounding the patentability of computerized business methods although financial patents are now commonplace in the US (Hunt et al., 2009; Tufano, 2003). Lerner (2010) provides evidence that financial patents are being litigated at a much higher rate, by several degrees of magnitude, than that of patents in general. His study unveils that larger entities as well as widely cited patents, usually featuring a high number of claims, are disproportionately prone to litigations. Awareness of the competitive advantages that firms may derive from protecting its critical knowledge assets, such as business methods and software solutions, leads financial firms to set up their internal patent department and incentive systems, as exemplified by the Swiss Re case (Bader, 2007). Nevertheless, financial innovations remain easily imitable and their diffusion across competing institutions is fast (Roberts and Amit, 2003). Product innovation has also been evidenced to experience a relatively short lifecycle, as a result of disclosure requirements and lack of formal protection mechanisms (Rossignoli and Arnaboldi, 2009). In contrast, the same authors contend that other forms of innovation, which relate either to organizational structures or operating systems, cannot be easily replicated by competitors and usually mirror significant changes in financial firms. Latest trends regarding patenting in the financial sector and their impact on performance are discussed in Arnaboldi and Claeys' contribution, which focuses on the US market and explores the relationship between patenting and performance, as well as in Kapoor's chapter, who introduces also new measures based on citation categories and looks into the value-creation process and the linkages with other patenting industries connected to the financial sector in the European setting.

The importance of information technology in financial services is incontestable. Technological change has induced innovations and productivity increases across sectors and industries, although measuring their effects remains a challenge for the academic community. Similarly to other industries, technologies have contributed to reshaping financial sector, in terms of new offerings, new ways of operating and new ways of delivering bundles of services. High frequency trading requiring complex and sophisticated hardware and software, mobile banking and electronic payments relying on extensive infrastructure, interoperable standards and devices illustrate the drastic changes in the industry. Mobile banking solutions are deemed to be the rising star in the area of innovations for financial services and this book exemplifies this tendency. Dennehy et al.

adopt a design science approach in order to design and evaluate a collaboration tool in the form of a Partnership Management Canvas that can assist practitioners to approach partnerships issues when forming an m-payment solution. Online banking is also the core topic of Santonen's contribution, who concentrates on which customization approaches are most valued by online bank end-users and what is their willingness to pay for customized online banking experience. This research exemplifies the importance of knowing and understanding customers' needs and behavior, using this as a guiding tool for designing and delivering innovations. The Schumpeterian view on creative destruction, the initiation of radical innovation, is supported by this evolution since the decentralized nature of information and communication technologies in banking will lead it to "disruptive innovation". Technology is a unique tool, which must be used to satisfy customer needs and it needs to be translated into customer values for a holistic implementation. Developing a better understanding of e-finance innovation services, through the design of a dedicated ontology, is the focus of Yablonsky's chapter, taking into consideration the peculiarities of one leading emerging economy. Moving to developing countries, Gómez-Barroso and Marbán-Flores explore the case of M-Pesa in Kenya, identifying the three main factors, namely the need, the knowledge and the context, which have influenced its development into such a successful venture, with wide and fast adoption.

However several factors can inhibit the realization of innovation. These can be e.g. the desire of the shareholders to achieve a quick short-term profit, the migration of the financial sector from being product-centric to being a customer service provider, the heavy use of technology that goes beyond the capacity of the banks (extreme level of high tech) and cultural issues related to risk-taking. It has also been observed that financial services still suffer from persistent manual processes, which may indicate that there is room for process innovation in this industry. As this kind of innovation cannot easily be copied, it may bring competitive advantage for first movers, and considering that it is incremental in nature, it may appear less risky in nature. Focusing on the realization of service innovation, exemplified in the financial industry, Hydle et al. discuss the intertwined relationships between the fields of innovation and strategy.

The open nature of the innovation process in financial services is another topic addressed in this book, from two perspectives. Martovoy discusses the advantages and disadvantages of adopting open innovation practices for new service development in the context of a small, open, leading European service economy where financial services contribute to about 30% of GDP. Delineating open innovation into inbound, outbound

and coupled processes, Salampasis posits that trust acts as a cornerstone in the implementation of such practice. Furthermore, according to Salampasis, trust plays a moderating role between the four antecedents of open innovation adoption, namely knowledge sharing attitude, ambidextrous thinking, collaborative culture and diversity management and the implementation of open innovation. Further opening the black box and adopting a pragmatic approach, Vantomme and De Ruyck depict the process of establishing structural collaboration, both with internal and external stakeholders and its impact in terms of fostering breakthrough innovations using a single case study in the leading Belgian insurance company.

Financial innovation emerges from the failure case of the worldwide financial system. It is perceived within the new rules of “a slow-moving, selective and with a heavy dash of nationalism and regionalism” globalization (Bremmer, 2014, p.104). Within such a turbulent, volatile and constantly changing environment the need for adopting non-predictive strategies becomes imperative (Wiltbank et al., 2006). Financial innovation is bound to play an integrative role towards the determination of the kind of capitalism that will drive the globalized economy in the aftermath of the debt and subprime crises. This requires adaptation and the foundation of a solid strategic intent that will “end the plague of short-termism” and realize the shift from “a quarterly capitalism and toward a true long-term mindset” (Barton and Wiseman, 2014, pp.44-45).

We wish the reader an enjoyable journey and hope it will stimulate fruitful thoughts and subsequent reasoned actions in the field of financial innovation.

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CHAPTER ONE

LABILE FIAT CURRENCIES: SKETCH OF FUTURE ALTERNATIVES

OLLI-PEKKA HILMOLA

1. Introduction

Recent history is full of examples of failed currencies. Typically people nominate Weimar Germany as one from the early 1920s (Fergusson, 1975). However, this rapid hyperinflation after World War I was just an attempt within a series of devaluations. Weimar Germany was trying to get manufacturing competitiveness and jobs back, by means of a massive devaluation of its own currency (Richards, 2012). After this, France and the UK followed; but inflation rates were not as high as in Weimar Germany. This series of competitive devaluations was also seen in the USA, where government confiscated all private gold in 1933 with 20.67 USD per ounce and tied US dollar to gold with 35 USD per ounce; just a couple of years later (basically resulting in a 40.9 % devaluation of its currency). The Fort Knox gold warehouse, with tight safety systems, originates from this period of decision-making-nationalized gold needed to be stored somewhere.

Another, but yet much faster moving series of devaluations took place during the late 1990s, when the Asian crisis hit medium-sized Asian economies, after tiger economies had grown too fast and taken too many toxic contracts with banks (complex derivate contracts with currency and/or interest rate swaps; more see Das, 2012). The Thai Baht was devaluated in 1997 by more than 50 % as did the Malaysian Ringgit and the South Korean Won accordingly. Russia followed this chain of dominoes falling, when in 1998 its currency devaluation was roughly 80 % over a period of one-year. Russia subsequently defaulted on its own foreign public debt. After Russia, the Brazilian Real was devaluated by nearly 40% in the late 1998. Therefore, in the late 1990s and early 2000s, all investors were cautious when dealing with these countries. However,

looking back to the changes that took place, we may argue that these very sudden devaluations played out well for all these countries. All of them have recorded significant current account surpluses thereafter (except for Brazil, where fluctuations have continued) and consistent GDP growths (even both in USD terms). It did not take that many years before “emerging markets” were again in hot demand and became popular investment targets from all over the world. In the current global monetary system it pays off to admit that economy or economies have made serious mistakes-the only advice is to make this visibly and promptly. Also it pays off, if the devaluation is high. Of course, savers and other money holders are on the losing side of the equation, but typically countries do better and gain in the long-run.

The world is yet confronted with another possible currency devaluation and great market changes; the valuation of major trading currencies. We illustrate in this chapter that possibly the Euro, USD and Yen are all overvalued against the Chinese Yuan (a much discussed issue, e.g. Burdekin, 2008; Turner, 2008). This is supported by foreign trade statistics and container movements between continents. In most recent years, China has moved towards the right direction with its currency, but these changes have been mild and a consistent decade of long appreciation is missing. Best progress is being made with the USD, but again trade accounts and container trade do not show that kind of favorable changes. Actually the situation is moving to the opposite side. It could be that the current fiat monetary system allowed such huge biases that it takes a lot of time for the system to repair itself back for manufacturing export. In the following pages we show that the current biases are so significant that there is hardly any change to revert back on the gold standard-this would mean, for the system to work, that gold prices should soar at least 10-20 times higher compared to the current prices. Basically the world does not have enough physical gold with respect to the current biases of trade and the valuation of gold is low compared to the required monetary transactions. Together with the gold standard and the looming appreciation of the Yuan, it could also be so that a country, independent and without central banks operating Internet currencies like Bitcoin, could take a more important role compared to the market.

2. Are Happy Days Here Again with a Gold Standard?

In the early 20th century, currencies were tied to gold. In a case of massive accumulation of foreign currency, central banks simply called gold shipments from other countries, which show that they were holding

them at their disposal. This resulted in massive changes within the ownership of gold and accumulation was typically activated in countries or continents, which were leading, in an industrial sense (significant trade account surpluses). For example, USA accumulated a lot of its current holdings during the rapid industrialization era. Gold was for example in the early 20th century tied to the USD in a way that 20.67 USD was equivalent to one ounce of gold (31.1 grams). Later the US government confiscated all private gold from domestic markets and this ratio was devaluated to 35 USD per one ounce of gold in 1935. Private ownership declined during the Great Recession, within the entire USA (only jewelry ownership was allowed and set free again in 1974, see Sarnoff, 1980), but this exchange rate lasted within international central bank operations until the Bretton Woods Standard was established at the end of the World War II. In this new currency system the USD was the only currency tied to gold with 35 USD per ounce and all the other joined currencies had fixed rates to the USD. If somebody insisted, USA would send gold instead of dollars; this especially benefitted emerging European manufacturing countries after World War II (like Germany, France, Italy, and Netherlands; see Richards, 2012). However, the Bretton Woods System was cancelled by the 1971 Nixon unilateral announcement, mostly due to public economics (general over-spending and wars) and the erosion of industrial performance. Otherwise the USA would have lost a lot of its gold reserves, should the Bretton Woods arrangement had continued.

After 1971, the whole world has been on the fiat currency arrangement, where currencies are just backed by nothing physical, just having goodwill and trust behind them. It is no wonder that many currencies have faced stiff devaluations in case of economic emergencies or panics (following other than normally distributed returns or changes as argued by Vogel, 2010). One of these moments has been the Asian crisis, which started in 1997 and continued in Russia in 1998. In the long run, some currencies have really lost their value, like the Indian Rupee, which has declined 85-90 % from its value as compared to 1973 and the USD. Similar, but more rapid changes have been recorded regarding the Russian Ruble, which has lost more than 95 % of its value within the last two decades against the USD. The value lost on the Mexican Peso is similar to the Ruble, but the time horizon needs to be extended to four decades. Later on in this chapter, readers may note that China has experienced a similar kind of devaluation from the early 1980's (against the USD, approx. -80 % during 1981-1994) and holding paper currency has not benefitted the savers at all. However, it should be mentioned that in the new fiat currency system, no paper currency is safe. This also concerns the US Dollar, the European Euro and

the Japanese Yen. Many governments, and particularly these three, have used the monetary stimulus after the 2008-2009 economic crisis and substantial amounts of money have been digitally printed. Currencies have sustained their values relatively well, but still no guarantee exists that this will be the situation in the future. The fiat system is said to be labile.

It is more than four decades since the world's gold standard was abandoned (Bretton Woods contract) and countries have continuously used small money printing, e.g. to keep economy at some inflation (typically 1-3 % per annum; Turner, 2008). Also during the times economic crisis, governments have used amounts of money to protect their institutions and operations-resulting again in a higher supply of notes. Increasing the amount of money in different currencies around the world, in the last four decades, has caused biases in the world trade accounts, biases which may not be repaired or paid back, should actual payment is demanded. Currently many trade account deficit countries just take more loans to keep up with consumption and public sector demands. Many trade deficit countries are also the greatest buyers of their own governmental debt (own central bank acquires country's governmental bonds; this now the situation e.g. in USA).

An attempt to illustrate the current state of biased trade account performance, globally, is presented below in Table 1, where information from central bank gold holdings and current account performance of the most important countries was brought together. From Table 1 it can be noted that with the current price of gold, many advanced countries could tolerate current account deficits for several months or in very rare cases, like France, several years. It is interesting to note that the USA, the largest gold holder in the world, could finance its current account deficits for nine months with a deficit level of the year 2011. If the average from years 2005 to 2011 is taken into consideration, then this safety net is only just above seven months. Interestingly, Spain and Greece are also in a similar kind of vulnerable position as gold reserves could only carry on for a few more months of deficits. Both of these economically problematic countries hold substantial amounts of gold.

Many issues play a role on Table 1. Some countries have sold off much of their gold after abandoning the Bretton Woods system. This is the case for the UK in early 2000 (276.9 tons; Wener, 2005), but similar substantial sales were executed at the same time in Austria, Belgium, the Netherlands and Switzerland. For some governments, gold is not considered as a safety net or a last-resort type of asset; instead it is seen as an unnecessary old asset, which should be sold to fund other activities. However, the timing of earlier described European gold sales could not have been more poorly

selected-selling at low prices in the late 1990s and early 2000. However, the opposite point of views also exists, like Russia and China, which have shown significant accumulation of gold reserves in recent years (Richards, 2012). These countries have been willing to pay for gold, prices that were five times higher than what Europeans sold them off just one or two decades earlier.

Table 1. Current account deficits (year 2011 and average of years 2005-2011) and the availability of gold reserves per each respective country to finance this deficit (Assumption: gold price 1,400 USD per ounce/45,000 USD per kg and world gold reserves of central banks, 30,000 tons). Sources (data): World Gold Council (2013), World Bank (2013)

Country	Gold reserves	Year 2011	Years 05-11
		Months of gold reserves	Months of gold reserves
Brazil	67.0	0.69	2.06
Australia	79.9	1.28	0.99
Ukraine	36.4	1.92	4.29
Greece	112.0	2.12	1.78
Poland	102.9	2.22	2.63
Spain	281.6	2.76	1.56
Turkey	445.3	3.20	6.37
South Africa	125.1	4.94	4.85
India	557.7	5.02	10.69
United Kingdom	310.3	5.11	2.94
Belarus	49.4	5.31	6.59
Peru	34.7	5.61	17.07
Romania	103.7	6.71	4.32
Mexico	124.0	6.92	7.71
Egypt	75.6	7.44	29.76
United States	8133.5	9.43	7.28
Portugal	382.5	12.32	8.85
Pakistan	64.4	15.57	5.81
Italy	2451.8	19.72	24.69
France	2435.4	24.16	40.13
Lebanon	286.8	31.83	37.69

Table 2 .Current account surpluses (year 2011 and average of years 2005-2011) and estimated duration that world gold reserves are gathered by each country (Assumption: gold price 1,400 USD per ounce/45,000 USD per kg, and world gold reserves of central banks, 30,000 tons). Sources (data): World Gold Council (2012), World Bank (2013)

Country	Year 2011		Years 05-11	
	Gold reserves	Years to gather world's gold reserves	Gold reserves	Years to gather world's gold reserves
Germany	3391.3	5.36		5.87
Saudi Arabia	322.9	8.42		14.14
China	1054.1	9.57		5.20
Japan	765.2	11.05		7.82
Russia	996.4	13.42		16.11
Netherlands	612.5	15.63		23.90
Kuwait	79	19.03		29.98
Singapore	127.4	20.58		31.47
Sweden	125.7	35.41		36.42
Switzerland	1040.1	36.30		30.35
Malaysia	36.4	42.44		45.88
South Korea	104.4	51.61		64.54
Venezuela	365.8	54.68		69.10
Algeria	173.6	68.17		63.74
Denmark	66.5	71.32		115.37
Kazakhstan	130.9	95.26		1279.45
Philippines	192.7	192.44		216.79
Thailand	152.4	226.97		186.87
Austria	280	242.34		120.70
Indonesia	75.9	799.13		240.38
Libya	116.6	953.79		73.02
Bolivia	42.3	2509.46		1217.90

Looking from the other side of the coin-the time of surplus countries earning the entire world's known gold through world trade - we get similar and yet surprising results. It is of course known *a priori*, that China would record well in this with its recent years of significant trade account surpluses, but surprisingly, Germany is as strong as China as the current account performance is being used in surplus evaluation. It would take roughly five years for Germany and China to earn the entire world's central bank gold if their current holdings of gold were taken into account. China's performance dropped a bit since 2011 because energy and particularly oil became so expensive that imports were needed. Together with these two, other leading countries are Saudi Arabia, Japan and Russia. However, a word of caution should be stated about Japan, as due to the nuclear disaster that took place in 2011, all the energy is being produced

with (mostly) imported oil, not cost-efficient nuclear power. This is already visible in the most recent current account performance. Surpluses have disappeared and current account shows mild positive amounts during 2012-2013.

Based on our analysis, it is understandable that the world cannot revert back to a gold standard. If it does, then the value of gold would be much higher than today, maybe 10-20 times higher, at least in the current monetary circulation situation. Of course biases between countries in foreign trade continue as long as currencies, in general, sustain and other parties approve practices of deficit countries. Please, also do note that gold valuation has significantly increased, compared to the early 1970s, when it was valued to 35 USD per ounce. Gold, at the time of writing, is roughly 40 times more expensive than then.

The most probable scenario for the future is that some leading current account deficit countries face stiff currency devaluations. After this, massive debts need to be renegotiated with the debtors again-some sort of restructuring is needed (mostly due to massive debt load, which increases even more with devaluation). This is the only way for these deficit countries to spark again their manufacturing activity and performance, so as to achieve a trade balance. Going back to the gold standard would hurt the world's economy significantly, as currencies would again start to carry value too (and people could trust them without the fear of losing). Then the monetary circulation in the system would be constrained, loans would be difficult to acquire and again economies would face recessions or continued depressions as investments would be hindered by considerable delays.

3. Trade and Currency Perspective

For a long period of time, currency valuations of the Yuan have been on the agenda in the large trade deficit regions, such as USA and Europe (deficits in the last six years, which are stabile and high, see Tables 3 and 4). For example, USA has argued for a long time that China has kept currency valuations at artificially low levels, favoring Chinese manufacturing exports and doing great harm to the remaining USA manufacturing industries. In Europe, the financial turmoil has also resulted in manufacturing losing its attraction and lacking strong export industries. Germany still shares manufacturing performance and current account surpluses, but even this glorified EU country, in the industrial sense, is showing a deficit in trading with China (Table 3). Together with Germany, Japan is included in the old power triad (Ohmae, 1985). The Japanese Yen

has been appreciating significantly over the past decades and this has partially affected its manufacturing growth to slow down. However, China's surplus was holding until 2012, when the first deficits were recorded (Table 4).

By observing Tables 3 and 4, it could be noted that the US trade deficit is still on a miserable growing trend and the European Union has leveled off to a very high-deficit position. Only Germany and Japan could be argued to be in a situation, where some control is still left on foreign trade and dependency is not only in one direction.

Table 3. Trade performance of European Union 27 and Germany with China (EU27 numbers in billion euros, Germany in bill. USD). Sources (data): Comtrade (2013), European Union (2013)

Year	European Union 27			Germany		
	Export	Import	Deficit	Export	Import	Deficit
2007	71.8	232.6	-160.8	41.11	75.05	-33.9
2008	78.2	247.9	-169.7	50.17	86.71	-36.5
2009	82.3	214.2	-131.9	51.09	77.50	-26.4
2010	113.3	282.5	-169.2	71.07	101.38	-30.3
2011	136.2	292.3	-156.1	90.50	112.18	-21.7
2012	143.8	289.7	-145.9	85.94	100.68	-14.7

Table 4. Trade performance of Japan and USA with China (all in bill. USD). Sources (data): Comtrade (2013).

Year	Japan			USA		
	Export	Import	Surplus	Export	Import	Deficit
2007	109.3	102.1	7.2	65.2	233.2	-167.9
2008	124.9	116.1	8.8	71.5	252.8	-181.4
2009	109.7	97.9	11.8	69.6	221.3	-151.7
2010	149.5	121.0	28.4	91.9	283.8	-191.9
2011	162.0	148.3	13.8	103.9	325.0	-221.1
2012	144.2	188.4	-44.2	110.6	444.4	-333.8

From a purely long-term currency change perspective (i.e. decade's long observation period) these arguments are more or less correct with regards to Europe, Japan and the USA (please see Figures 1-3 below). For both currencies, the Euro or the Japanese Yen against the Chinese Yuan,

they have basically not changed at all during the last decade or so. Despite the gloomy European financial crisis, one Euro was purchased 4.4 percent less in July 2013 than in January 2000—for Japan the same minimal change was in place for a long time. However, recently, the Japanese Yen has lost much of its value and compared to January 2000, it is 23 % lower than the Chinese Yuan in August 2013. However, if the base period would be 1999, then the situation would still be of no change or even the opposite—the Yen has fluctuated quite much and in the late 1990s it was weak for a couple of years.

Basically the European Union is correct that emerging and high trade surplus driven by the Chinese economy is not that active to appreciate its currency against them. This would be a natural way out of the economic crisis in Europe, where the only remedies currently being offered are society-wide economic austerity packages and deflationary wage deals. These will eventually, and severely, hurt the Asian export countries as significantly lower consumption lowers the demand for foreign import. By lowering the overall consumption levels in the future, it will make Europe less attractive and less powerful, resulting in a lowering factor for Euro exchange rates in the future.

Interestingly, USA, as one of the most important trading partners of China (behind the EU), has been recently demanding a currency devaluation. However it has been noted that these valuations have not changed much. As an official tie between the US Dollar and the Chinese Yuan was broken down in July 2005, it is interesting to note that in eight years, the US Dollar has devaluated against the Chinese Yuan by more than 26 % (Figure 2). So, progress is being made in this area and trade pairing. However, its impact on the trade deficit is not what has been hoped for since deficits are only growing (Table 4). One reason might be that technological competitiveness has been lost in the USA and it is difficult to retain its world-class capabilities on high tech (Pisano & Shih, 2009). The USA might not have any other option but to continue acquiring products from China in the short-term—but with a higher amount of dollars demanded in exchange. So, based on this, the devaluation of the US Dollar should still continue to strengthen the export industry. The US Dollar does not only devaluate against the Chinese Yuan, but as Figure 1 shows, in the recent decade the Euro has gained considerable strength over the US Dollar, even if the economic challenges in Europe have been much discussed and negatively portrayed in the press (Lapavitsas et al., 2012).

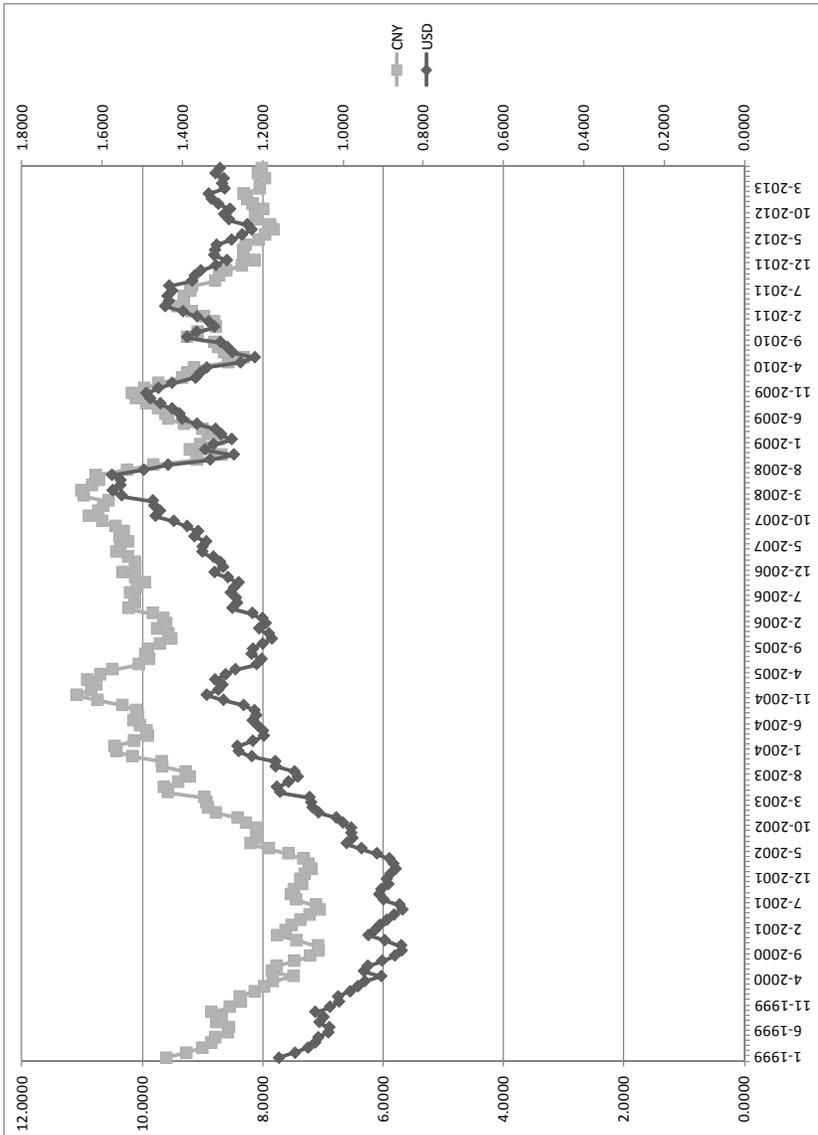


Figure 1. Chinese Yuan (CNY) and US dollar (USD) against Euro currency within period of Jan.1999-Aug.2013. Source: Bank of Finland (2013)

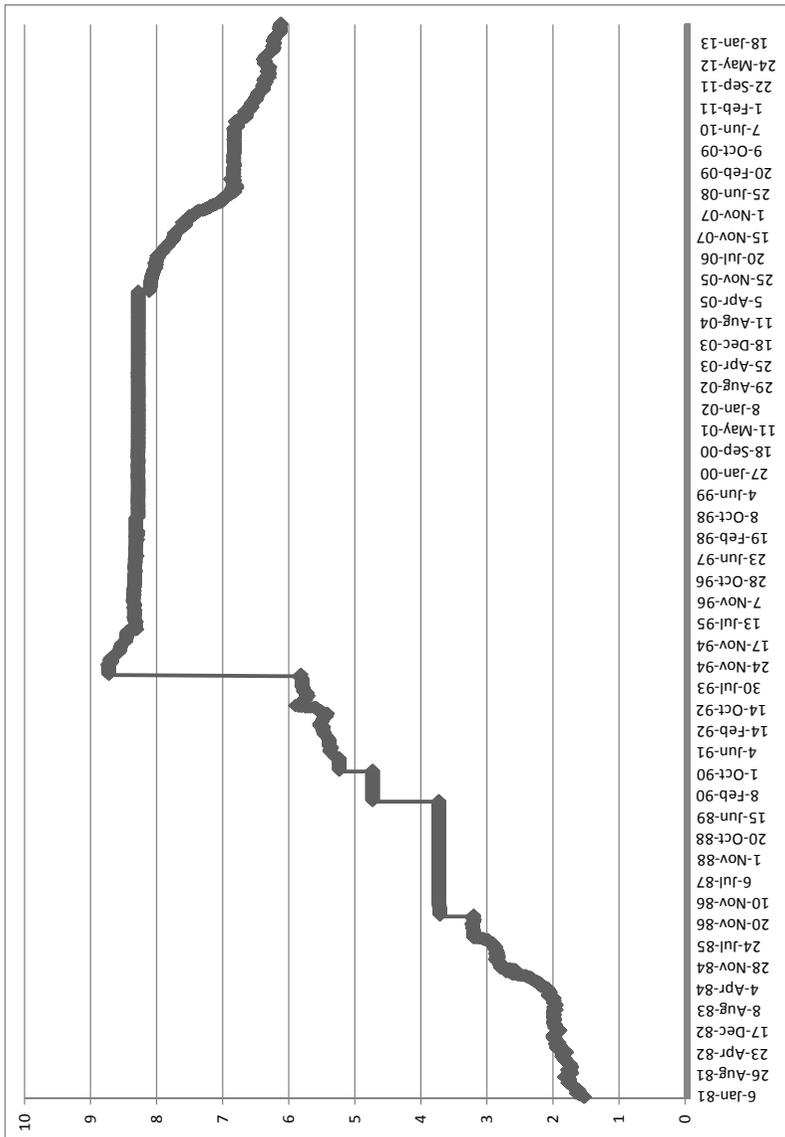


Figure 2. Chinese Yuan (CNY) against US dollar (USD) within period of Jan.1981-Aug.2013. Source: Bank of Finland (2013) and Federal Reserve (2013)

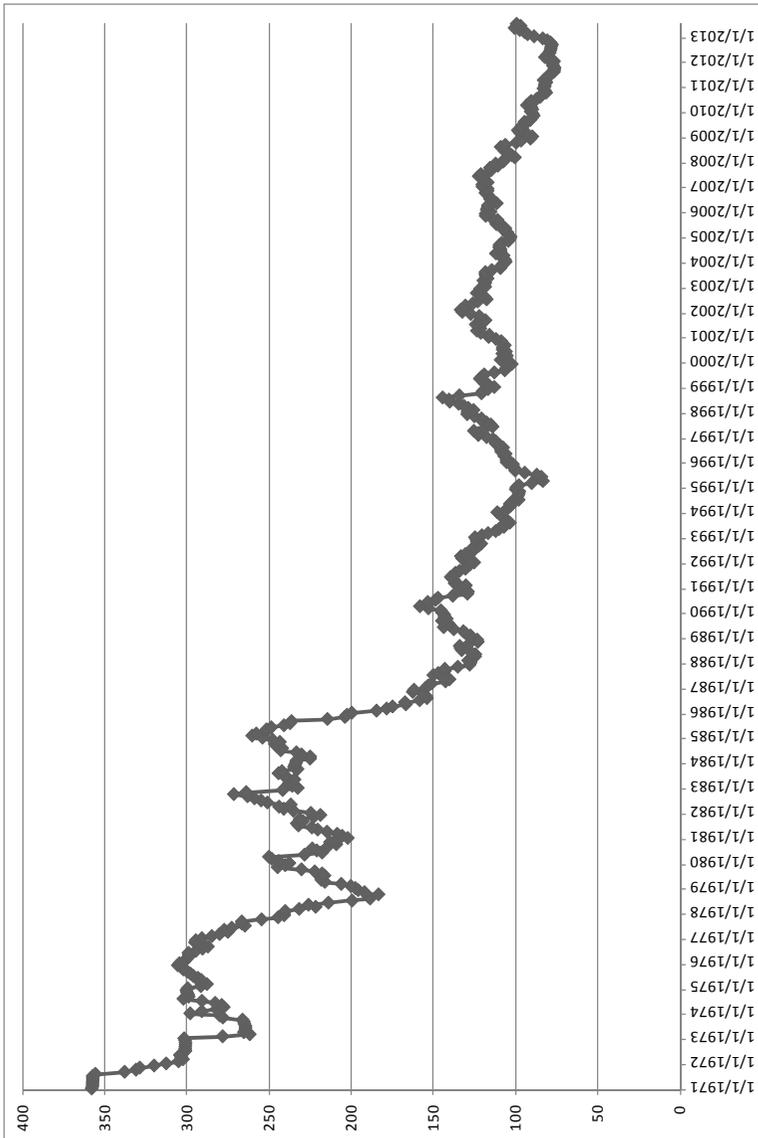


Figure 3. Japanese Yen against US dollar (USD) within period of Jan.1971-Aug.2013. Source: Federal Reserve (2013)

4. Container Flow Perspective

In terms of container export flows, China has been dominating the two old strong manufacturing exporters, the USA and Europe, for years. For example, China was dominating in a very significant manner, before the credit crunch took place in 2008-2009 (United Nations, 2006 & 2009). Actually in 2004 and 2007, full Asian containers (most of them from China) were transported with a nearly three-time volume than the USA was able to export back. This unbalance changed during the crisis and in 2010 for example, the USA was able to export 8.6 million TEU (Twenty feet Equivalent Unit) in full, while Asia exported to the USA 14.3 million TEU (United Nations, 2011). In 2011, the USA container export dropped to 6 million TEU and the Asian to 12.7 mill. TEU-the absolute difference is higher than in the previous year. Without doubt, the appreciation of the Yuan has improved this unbalanced situation. However this is not apparent in trade statistics measured in US Dollars-maybe Asian goods are being priced higher in the US markets. Increasing deficits as previously discussed would indicate so.

Europe was able to resist much longer against the Chinese export capability and actually in 2004, Europe was exporting 8.4 million TEU to Asia, while Asia was exporting back 5.6 million TEU (United Nations, 2006). This favorable situation could be partly explained by the huge investment activity and factory projects of European companies in Asia (and particularly in China). However, when these projects were completed, the surplus changed direction from Europe to Asia and China in a very short period of time. In 2007 Asia was already exporting 17.7 million TEU to Europe, while the latter had a mere export volume of 10 million TEU (United Nations, 2009). Thereafter, the Asian surplus developed to a similar situation; then was the situation with the USA and Asia before the credit crunch (and European companies are taking this into account in their logistics strategies, like Hilletoft et al., 2011 illustrate). So, Europe exported to Asia 5.6 million TEU in year 2010, while Asia was exporting to Europe 13.5 mill. TEU (United Nations, 2011). In most recent available statistics, the difference has remained, in an absolute sense, the same and both sides have increased their container trade. The situation within the European trade is, however, unsustainable in the long-run and as noted earlier, the currency policies of China have not changed much in the long-term, to that respect. Under these circumstances, it is very difficult for Europe to even build a fragile recovery in their export manufacturing industries.