

# The rise and demise of the first wave of financial globalization:

## New perspectives on the role of institutions

Alexandre Ottoni Teatini Salles  
Graduate Program in Economics  
Federal University of Espírito Santo  
Av. Fernando Ferrari, no. 514, Goiabeiras  
Vitória/ES - CEP: 29.075-910 - Brazil  
aotsalles@gmail.com

**ABSTRACT:** Economic historians have published an extensive literature discussing the reasons for the emergence of global financial markets from the late nineteenth century until the beginning of the First World War. They have presented different interpretations and methods to deal with the complexity of this of financial globalization period, however, many of them does not take into account two related aspects to the formation of global financial markets that are crucial for this article: 1) the role played by institutional furniture to the international financial integration; and 2) the importance of the historical evolution of underlying institutions to the emergence of the Classical Gold Standard. Therefore, the article aims to examine the role played by the institutions in the process of global markets integration in the 1870-1914 period. To do so, it deals with the economic policy implemented by core countries of the time, and with technological innovations that have driven financial integration, such as mechanical minting coinage, the telegraph and the telephone. The main conclusion is that the evolution of a dense network of historically specific institutions lies on the foundations of the classical gold regime.

Key words: Gold Standard, financial globalization, institutional evolution

### 1. Introduction

Globalization and financial globalization, its most contentious aspect, have increasingly stimulated the interest of scholars from within and outside economics. Over the past two decades, a large literature has developed in different and more and more specialised strands to deal with the causes, controversies and consequences related to the increased global commercial and financial activity. More specifically, a number of prominent economists and economic historians have produced a voluminous literature seeking to find reliable evidence of the dramatic increase in world financial integration, and to scrutinise the issues that have emerged from it since the last hundred years or so.

Contrary to what one might think, financial globalization is not a recent phenomenon, both in historical terms and within academia. Scholars such as Michel Bordo, Barry Eichengreen, Maurice Obstfeld, Alan Taylor, Kenneth O'Rourke, Jeffrey Williamson, Dani Rodrik, P. O'Brien, Deepak Nayyar, Phillip Lane, M. Milesi-Ferretti, Paul Hirst, Graham Thompson, Nicholas Crafts, Michael Twomey, among others, have examined historical literature and data related to global capital

mobility from the classical Gold Standard era (1870-1914) until the early twenty-first century, and have identified that the degree of financial integration has oscillated in long waves since then.<sup>1</sup>

Aforementioned authors have developed different interpretations and methods to deal with the complexity of the long waves of financial globalization since it has been carried out based on various theoretical approaches. As a matter of fact, many of them overlook two connected features of the phenomenon that are crucial to this article: 1) the role played by the institutional furniture (in Veblenian terms, see VEBLEN 1899, 1919) of global financial market integration; and 2) the importance of the historical evolution of underlying institutions to the emergence of the Classical Gold Standard. It is beyond the scope of this article to deal with the institutional fabric of the second financial globalization era (whose unfolding still meets in course), so this paper aims to examine a variety of issues regarding the institutional evolution of the classical Gold Standard period. In other words, the paper aims to examine the institutional roots that gave rise to the Gold Standard. More specifically, it is focused on addresses these key questions: What was the importance of the historically specific institutional structure for the emergence of the classical Gold Standard regime? Which were the key institutions underlying the Gold Standard and how they evolved through time?

The article is organised in five sections, besides this introduction. Section two is devoted to discuss some key theoretical arguments related with the topic proposed. The third examines the characteristics of the first financial globalization through the development of two key institutions: money and markets. The fourth looks at the formation of global financial markets through the evolution of international communication and policy procedures. The next one discusses the reasons why colonial (cultural) ties played an important role in the process of global financial integration during that era. Section 6 concludes the essay.

## **2. Key arguments for a historical and institutional examination of the first era of financial globalization**

In this paper I will scrutinize the historical features of the Gold Standard based on a method developed by the institutionalist scholar Geoff Hodgson (2001, 2002, 2007), which takes into account the role played by the evolution of institutions and its historical specificities to describe the nature of any particular economic phenomenon. He called it the “problem of historical specificity”.

---

<sup>1</sup> Some authors from this set of scholars have called the U-shaped pattern the financial globalization historical swings. That means, financial markets presented high levels of integration during the forty years prior to WWI. This integration declined sharply in the years between the wars, recovering gradually after the end of Bretton Woods agreements until it reached again, in the 1990s, the comparably high levels of financial integration attained before 1914.

In doing so, I am assuming the Original Institutional Economics (OIE)<sup>2</sup> as the key theoretical perspective to grasp the issues surrounding the historical institutional evolution of the first financial globalization phenomenon.

The constitution of an “economic theory with institutions” derived from the theoretical effort to understand the human agency through the examination of its cultural context, focusing on the role played by evolving institutions over time. In doing so, institutions and the evolutionary nature of the economic process would define different types of economic systems (Hodgson, 1998a, p. 168), thus a “general institutionalist theory” should indicate how to develop specific or varied analyses related to particular phenomena. The problem of historical specificity is considered even in one of Hodgson’s (1998a, p.168) view about key methodological standpoints of the old institutionalist school: “Institutionalists do not attempt to build a single, general model on the basis of those ideas. Instead, these ideas facilitate a strong impetus toward specific and historically located approaches to analysis”.

According to Hodgson’s approach, history matters to investigate the causes of the unfolding sequence of economic events, then the interpretation of the first wave of financial globalization “must explore the particularities of the past” (Hodgson, 2007, p. 112). Hence, the analysis proposed to examine it is focused on the specific characteristics and underlying institutions of that era. In other words, I will look for stylized facts of the system aiming to disclose the structural basic features and specific groups of embedded institutions that can explain the nature and the evolutionary process of cross-border capital movement throughout the historical period. This analysis does not linger merely on statistics, but aims to explain the institutional scope and the causal processes of the financial integration in that era. The historical context and the particular institutional, social, cultural and technological conditions of that age will be the standpoint to describe the dynamics of that financial globalization episode. That is to say, surrounded and spurred by institutional changes over time, the phenomenon is considered here a typical evolutionary process of cumulative financial market transformations.

Globalization and financial globalization are not simply an amalgamation of markets, but a process of ongoing intercontinental integration of people and nations, which involves necessarily changes in key institutions such as money, market structure, governments, agent’s and firm behaviour, law, social rules, culture, language, habits and traditions. In doing so, it affects the

---

<sup>2</sup> Institutionalism, in its Original (Old) American School branch, is a multidisciplinary research programme whose basic notional element lays on the concept of institutions defined as habits of thought (“habitual methods of procedure” [VEBLEN 1898a, p. 391]; “prevalent habits of thought” [VEBLEN, 1899, p. 125 and 1919, p. 314]; “habitual methods of carrying on the life process of the community in contact with the material environment in which it lives” [VEBLEN, 1899, p. 127]; “settled habits of thought common to the generality of men” [VEBLEN, 1909, p. 626]), rules, norms, and its evolution (HODGSON, 1998). For accounts to the recent revival of Original (Old) Institutional approach, see for example Argyrous and Sethi (1996), Colander (1996), Hodgson (1992, 1993, 1998a,b), Mayhew (1987), Samuels (1995), and Rutherford (1996).

world economy in many aspects, such as: urban and international migration, ([un]expected) geopolitical changes, natural environment issues, military and political disputes, legal systems, multilateral international (or local) institutions, technological developments, and the list goes on endlessly. This way, globalization and financial globalization is an institutionalized concept subject to institutional evolution. They are “a set of processes” (PERRATON, 2003, p. 38) in continuous transformation running across the spheres of human collective action, which interact with institutions in ongoing evolution, so that subject to contradictions, advances and retreats. Its historical dynamic progress is focused on the role played by the network of institutions (and its evolution)<sup>3</sup> underlying the occurrence of the first wave of financial globalization.

Financial transactions are also a highly institutionalized economic activity. They are well standardised and non-standard contracts (OTC derivatives markets) undertaken in the present but ended in the future, hence subject to some degree of payoff uncertainty, which can be higher or lower depending to a large extent on the formation of expectations by private agents. As a result, contracts and the large number of financial instruments involved should be carefully organised, ruled and managed in order to help the system to operate in ordinary conditions. That is why financial activities depend on a framework of institutional arrangements, such as: markets, money (including international monetary standards and a variety of monetary instruments), habits, traditions, rules and regulations (both *de jure* and *de facto* regulations), legal proceedings, and policy schemes. It goes without saying that credible and stable institutions do not provide a shield against international and/or systemic crises, but they are an important institutional macroeconomic foundation to help alleviate the harmful effects caused by sudden changes of market mood.

Global financial flows have fluctuated throughout history by the development, adaptation and interaction of that institutional fabric. On the other hand, financial crises and crashes have occurred in certain situations where, broadly speaking, domestic and international institutional framework collapsed. One might remember two key historical episodes to illustrate this statement: the demise of the Bretton Woods arrangements in 1971 that led to the end of the “Thirty Glorious Years”, and the dismantling of American prudential regulation system after the 1990s, which eventually resulted in the subprime crisis in 2008. Therefore, institutions progressed and regressed throughout time, so their historical changes provide important insights into understanding why financial globalization framework has been capable of dealing with a huge volume of capital in certain periods in history, and why this capacity sometimes breakdown. The following analysis is focused on the institutional evolution of the Gold Standard, aiming to grasp a deeper learning of the underlying historical specificities of period.

---

<sup>3</sup> According to Hodgson (1998a, p. 168): “The core ideas of institutionalism concern institutions, habits, rules, and their evolution.”

Institutional characteristics are specific in different moments of history and confer idiosyncrasies to each international financial system. So then, the 1870-1914 period had its specific character related to the historical period in which it took place. Examining this experience, it is clear that there had been a “dense network of financial institutions” (BALDWIN and MARTIN 1999, p. 8) underlying its occurrence. Similarly but from a different standpoint, Hodgson (1998a, 2002) brings to attention for the importance of placing the economic analysis on the grounds of historically specific economic institutions. His purpose is to encourage the analyst to take into account the historical specificity of institutions in order to establish their conclusions about the key features of the subject in debate. Considering these two scholarly suggestions, the analysis proposed in this article is focused on an examination of what I call the “dense network of historically specific financial institutions” to examine the evolutionary process of financial institutions during the 1870-1914 era, aiming to provide then a depiction of its salient aspects.

In summary, the theoretical and methodological elements presented in this section are the basic premises for the interpretation of the historical institutional evolution of the first episode of financial globalization. The evolution of institutions designates the time, catching hold of public and private sentiment, leading us to understand the mind of the era, revealing key aspects that have been neglected in several historical investigations. Therefore, scrutinizing the globalization of finance through the lens of the role played by institutions in the process of global financial integration implies that the article offers a different angle of examining the phenomenon that may complement one of the sides that the subject has been examined so far.

### **3. Building financial globalization through key institutions: money and markets**

Institutional and political issues deeply marked the first wave of financial globalization. On the political side, the most important was the advent of the so called *Pax Britannica*, ie, the military and economic exuberance of Britain in the midst of the outstanding pace of international capital flows from the late nineteenth century to the beginning of the WWI. Hence, it is not controversial among scholars the fact that the UK political, economic, military, technological and (specially) financial power was a chief reason that increased the degree of global commercial and financial integration, which was responsible to spread its monetary system based on gold worldwide (ALDCROFT and RICHARDSON, 1970; CAIRNCROSS, 1953; EDELSTEIN, 1982; IMLAH, 1958; PLATT, 1968; POLLARD, 1985; NORTH, 1962).

The classical Gold Standard was a monetary global system in which the value of national currencies was fixed at a specific weight of gold, so its chief feature was the commitment assumed by governments to maintain fixed exchange rates with this metal. That means, Central Banks were supposed to freely convert the currency of each participating country into gold at any time at the

legal rate, so that monetary stability was the economic policy priority for the system's countries members. By creating a stable monetary parity to gold, this arrangement stabilised the exchange rate of many countries within narrow limits of variation. As a consequence, most of international debts were settled in gold.

In fact, the mechanisms of balance-of-payment adjustment managed by central banks and (to a minor extent) by commercial banks to guarantee the defence of gold convertibility were not always obeyed. Scholars such as Nurske (1944), Bloomfield (1959), McCloskey and Zecher (1976), and Eichengreen (1996) maintain that central banks developed many ways of violating the "rules of the game", putting at risk the stability of the system. Central banks usually tried to avoid an outflow of gold in order to preserve the stability of their currency, so their decisions were focused mainly on maintaining gold reserves compatible with the golden points and domestic price stability. In doing so, they applied their discount rate to avoid the erosion of their gold reserves up to the point in which international markets decided to increase their exports. In other words, they increased interest rates at least during the time needed, while other countries increased their imports from the country where prices went down due to the central bank's restrictive policy.

The results attained by the operation of the discount rate were usually successful. This policy procedure involved the management of loans and interest rates which in turn aimed at controlling the country's gold reserves, consequently the supply of money. For instance, if there was the expectation of a gold outflow, the central bank increased the discount rate withdrawing money from the market in order to make exports more competitive, then the trade deficit would be eliminated avoiding the loss of gold reserves. Similarly, interest rates could be increased also to reduce credit (and then increasing the cost of investment), keeping the entrepreneurs under strict market discipline.

Alternatively, there were other two ways to reduce the money supply in order to avoid an outflow of gold. Open market operations were sometimes employed in Britain and (by the end of the nineteenth century) in Germany but not regularly because it required a developed financial market to negotiate a number of bonds efficiently. Foreign exchange market operations with the same purpose occurred between London and New York but were also not so significant at that time. Therefore, open market operation of these economies did not reflect the reality of the European and American financial structures during the Gold Standard. As a result, gold flows to settle balance of payments disequilibria were actually scarce, especially due to central banks cooperation and the risk, transportation fees, and insurance costs of gold displacements.

Up to this point, one can imagine that the international transactions under the Gold Standard resulted from the operation of a fully negotiated monetary order, agreed from independent nation-states, formally encoded in a set of written rules and/or regulations. As a matter of fact, such

statement is not true. A couple of reasons could be pointed out. First, apart from the legal provision committing central banks in maintaining the convertibility of their currencies into gold, there was not a statute to prescribe laws or codes to be followed. Then, over time there were many deviations from the mechanisms of adjustment described above. The quotation below could enlighten this point. McCloskey and Zecher (1976, p. 362) reasoned that:

Central banks often did not play the rules: the Bank of France and the National Bank of Belgium, for example, kept their discount rates low regardless of gold flows. An alternative indicator of the extent to which central bankers played the rules is the extent to which the relationship between inflows of gold and increases in domestic credit was positive. Once again, the indicators are that in the late nineteenth century the monetary authorities, in the case American and British, cheated: the correlation between gold flows and annual changes in domestic credit was -0.07 in the United States and -0.74 in the United Kingdom.

As can be seen, the “rules of the game” were not fully respected at all, so they cannot be considered a central pillar for the maintenance of the Gold Standard, at least in the short run, but also they cannot be discarded as unimportant. The violation of these rules in the short term was tolerated as long as agents believed that inconsistent policies relating to the monetary stability would not happen indefinitely, i.e., in the long run they should be maintained, otherwise the system would not survive. Considering this, its institutional maintenance in the short run should be found in other more robust and credible foundations.

Interestingly, despite the fact that the rules were defied many times, the system continued in operation up to the occurrence of a world war.<sup>4</sup> Then, how did the Gold Standard regime operate for so long without a written code, and without having its informal commitments strictly obeyed? Most authors have answered this puzzle affirming that it was sited in two crucial pillars: the long term commitment to gold convertibility and international solidarity (GALLAROTTI, 1995; EICHENGREEN, 1996). These authoritative answers are another piece of evidence to show the importance played by institutional aspects in the development of the regime. Furthermore, inspired by Keynes’s (1930, p. 258) assertiveness regarding the choice of gold as a standard of value to establish a monetary standard, I consider that the long term commitment to gold convertibility was motivated by tradition, which is an institution. This tradition was kept for governments of member countries, which means that nation-states played an important role as institutions for the operation of global economic governance.

Governments (especially in the core countries) were committed to maintaining the long term convertibility into gold, overcoming the problems caused by short term deviations. This commitment was measured as a priority policy objective of each country member. Economic policy instruments were fully dedicated to maintaining the gold parities to get the “good housekeeping seal

---

<sup>4</sup> McCloskey & Zecher (1976:363) affirm: “Yet, the gold standard, it is said, worked quickly and well. The exchange rate between sterling and dollars, among many other rates, remained virtually unchanged from January 1879, when the United States put itself back on gold, to August 1914, when the war put the United Kingdom effectively off it”.

of approval” (BORDO and ROGOFF, 1996), for this reason investments in social security were virtually non-existent. In other words, there was great concern with price stability and little concern with output level and its distribution. Political complaints in opposition to the side effects of high interest rates were still embryonic at that time: the right to vote was not universal, labour parties and labour unions were not yet structured, and wages and prices were relatively flexible. Besides, private agents noticed that governments would not hesitate to take unpopular macroeconomic policy measures to maintain domestic monetary stability.

This commitment was not enough to maintain the stability of the Gold Standard system without international solidarity amongst central banks. An increase (reduction) in one country’s discount rate attracted (repelled) financial capital and gold reserves, damaging the balance-of-payments of the other countries. These disturbances might ignite cumulative imbalances in international accounts for many economies. Despite the influence of the Bank of England as the coordinator of the system, there were turbulent periods in which its reactions were not enough to prevent financial crises. For instance, if a country lost a great part of its gold reserves, it would have to increase its discount rate to attract overseas gold and capital. As usual, all economies wanted to increase their reserves, and without international cooperation the system would collapse. Then, if the other economies wanted to preserve their proper financial stability, they would have that to act cooperatively helping the one in distress to increase its gold reserves in order to guarantee the permanence (stability) of the system. I mean, in order to preserve its own interests, the system had to be preserved and could not allow countries in crisis to influence the policy decisions of others because it would eventually lead to its failure.

Although the steadfast long term government commitment to monetary stability, the Gold Standard could not prevail for more than forty years. The WWI destroyed the economic, political, social and institutional framework that was created, smashing in particular the international solidarity between central banks. As discussed above, the discount rate was raised whenever there was risk of gold outflows, so this decision attracted international capital and gold to certain countries, promoting an opposite reaction in others. Similarly, central banks decreased the discount rate when the gold stock was in excess. Unilateral decisions similar to that provoked unexpected outflows or inflows of gold to some other countries, then problems to their balance-of-payments and domestic prices. The opposite reaction was instantaneous and the final result had a harmful effect to all. Policy responses rebound over and over again creating an inconsistent policy scenario, ruining the credibility of the system.

International liquidity varied for many reasons, therefore central banks’ decisions were too harmful for the maintenance of monetary stability, damaging the credibility of the system as a whole. For example, when the international liquidity was reduced, there was a need to increase the



interest rate or vice-versa, and without an institution to coordinate this adjustment, central banks might have act inconsistently. For this reason, an effective leadership was important to coordinate these decisions. As the most powerful monetary authority, the Bank of England assumed this position in the 1870s, leading the global market since its discount rate was the target for all other central banks. The role played by the Bank of England and the other central banks likewise represents another key institutional aspect of the Gold Standard.

Besides the aforementioned episodes of international cooperation, the Baring crisis in 1890 became well-known due to the unprecedented amount of money negotiated between central banks. It is an outstanding example showing the importance of international cooperation and the role played by banking institutions during the Gold Standard. The British bank Baring Brothers lent money to the government of Argentina but did not receive any payment in due time. This fact provoked an expectation that the Bank of England would not have enough gold to maintain the parity of the pound sterling. Then, Lombard Street bailed out the Baring Brothers to prevent a larger depression, ended up receiving a loan of £3 million in gold from the Bank of France, and £1.5 million in gold coins from the Russian State Bank (EICHENGREEN, 1996, p. 34). In the end, the British central bank managed to recompose their reserves and the currency crisis was eventually solved, but this experience almost ruined the Gold Standard.

Since then, a new “rule” (a truly institution) was introduced in the system. Countries noticed that the commitment of sustaining the gold parity could not be accomplished without international cooperation amongst central banks. Consequently, by the end of the nineteenth century and the beginning of the twentieth century, several similar crises were thwarted through the coordinated action of the monetary authorities from distinct countries. One more procedure was established as a rule of the game, making international solidarity another embedded institution to the gold regime.

At this point, it is worthy to ask a couple of questions: what does this discussion mean in terms of global capital integration? In what aspect it is related to the role played by institutions? What does it mean with “the dense network of historically specific financial institutions”?

Being played like the way presented above, the rules of the game created a favourable policy environment able to trade goods, capital and short term financial contracts, connecting all country-members through the common language of an international monetary standard. As mentioned above, the adherence to the Gold Standard implied some basic commitments which were mutually related: governments should be prepared to take any policy measures to defend convertibility; they would be coordinated by a leader; and they would expect cooperation from the central banks. This

does not mean a perfectly coordinated world<sup>5</sup> but one that encouraged the adherence of a variety of countries distant from the north Atlantic economy.<sup>6</sup>

All of these commitments and rules imply that foreign securities issued in countries off gold were considered riskier. On the other hand, countries on gold were integrated into an extensive market and then had much more opportunities to buy or sell their assets. The “good housekeeping seal of approval” allowed the inclusion of peripheral countries to the European markets and favoured global economic integration since the adherence to the rules allowed access to a wide market free from capital controls. Accordingly, the establishment of the classical Gold Standard played a crucial role in global capital integration. Protectionism to agricultural and industrial products was a common trend in developed countries (especially from the end of the nineteenth century to 1913) as noted by Bairoch and Kozul-Right (1996) and Chang (2002), but capital controls were scarce at that time.

Before 1870, cross-border trade and financial flows were less connected and structured, and financial markets were roughly institutionalised. An international network of asset trade was not put into operation due to unsolved problems in managing and expanding the bimetallic standard (REDISH, 1990; EICHENGREEN, 1996). It was confined to few areas of Europe, the US and a few Asian countries. As time passed, it did not have enough credibility to integrate countries from all continents in “the dense network of historically specific financial institutions.”

During the period prior to the Gold Standard, international transactions were atomised due to the monetary chaos that prevailed within the richest countries. Therefore, there was not a global market, since the institutional instruments discussed above were absent in the international scenario. British 18<sup>th</sup> century gold practices spread all around the world and re-emerged as the international (classical) Gold Standard. Over time, the classical Gold Standard regime became institutionally strong. A truly universal market was “built” based on those commitments, institutionalised by a historical convergence of economic, political and specific social circumstances. The gold parity, the rules that oriented the relationship amongst central banks and the international coordination through cooperation represent the basic aspects of “the dense network of historically specific financial institutions” which made the operation of the system promising.

Eichengreen (1996, p. 30) noted that “it [the Gold Standard] was a socially constructed institution whose viability hinged on the context in which it operated”. This is another way to say that a dense network of institutions created and developed in a specific historical context gave birth

---

<sup>5</sup> Despite playing a central role to the global market institutionalisation, this regime could not be considered perfectly integrated. In fact, there were many crises and backlashes in various countries, especially in peripheral economies, due to inconsistencies in their economic policy (BORDO, EICHENGREEN and IRWIN 1999; see also EICHENGREEN and BORDO 2002, p. 40).

<sup>6</sup> Thomas (1954) most frequently used the term “Atlantic economy” when referring to the strong economic relationship between America and European countries, especially the UK)

to the system. It shows once more the role played by the institutional arrangements that made possible the operation of a global capital market for almost half a century. Despite the crises and retreats occurred throughout the 1870-1914 period, the expressive volume of capital traded and its wide geopolitical width marked the trade and financial international economic history. Actually, the specialised literature has labelled this era as a benchmark in terms of global capital mobility and integration, therefore this period is considered as the first wave of financial globalization.

In summary, the rules of the Gold Standard game shaped the institutional arrangements that were developed to sustain money stability. The Bank of England was the coordinator of the system and the message it preached was the Gospel of currency stability and sound finance (or fiscal conservatism) to allow the redemption of free float capital flows; and the Gospel of international cooperation amongst central banks to avoid the hell of severe (disruptive) problems in the balance-of-payments of member countries. This means, institutional arrangements were made to adapt the system to achieve these policy objectives, so that financial flow disturbances would be discouraged. Helped by central banks worldwide, Lombard Street managed discount rates in order to prevent outflows of gold, which would have caused more and more unsettling banking crises. In so doing, the institutional framework built allowed (and encouraged) an unprecedented volume of capital flows, so that cross-border transactions emerged worldwide.

#### **4. Building global markets through technological improvements in communication and monetary policy**

The expansion of cross-border financial flows from 1870 to 1914 was heavily influenced by the development of technological breakthroughs which sharply improved the monetary policy efficiency and dramatically reduced the costs of long distance communication. Then, they both allowed the gold system to deal with a higher volume of financial transactions, and as time goes by, with a more complex and larger number of contracts. On this account, there were major innovations in two distinct areas, namely mechanical minting coinage and technological advances in communication technology. With regard to the former, the most important breakthrough was the creation of steam-powered engines to mint uniform coins in large quantities. The introduction of stream-driven stamping presses by the British government in the early nineteenth century brought lower money transactional costs, contributing to the organisation of a national monetary system in that country and in others. Accordingly, it helped then indirectly to the advent of the classical Gold Standard.

On the ground of communication technology, there were three key innovations: the telegraph, the trans-Atlantic cable, and the telephone. These technological advances profoundly marked the way financial transactions were conducted in the late nineteenth century. In fact, they

established completely new trading parameters for financial activities, and, as a matter of fact, much more efficient than was done previously. Thus, the operational nature of these devices created a new paradigm in world business, in the sense that they established new habits, new routines and new ways of doing business between distant nations. In other words, these innovations change the market behaviour in global extension, and gave rise to a new network of institutions that were crucial to enmesh remote markets in one much less segmented and more integrated. These breakthroughs dramatically reduced the cost of long distance communication, providing direct and instant interconnection amongst a diversity of geographically distant financial centres. These innovations do not mean that it eliminated the information asymmetry, but kept financial markets around the world in closer contact, encouraging then the brokers to increase their exposure to financial risk. Accordingly, financial centres became more integrated than they were during the first half of the nineteenth century. To put it another way, these technological developments played an important role by encouraging increasing levels of capital integration and promoting round-the-world financial affairs.

Needless to say, the global market was not truly (thoroughly) universal, but indeed, by the beginning of the twentieth century, key countries in all continents were connected through technological devices. Problems remained in terms of global coordination of financial operations since corporations and governments did not have the appropriate management skills, the legal procedures neither the multilateral institutions needed to deal with the new issues raised by a global financial market. Nevertheless those major improvements were important pieces in the Gold Standard puzzle since they equipped governments, central banks, investors, and private banks with tools to play the financial game across national borders. With this in mind, the present section aims at exploring how dispersed and geographically distant financial markets became part of a global marketplace through the aforementioned technological innovations.<sup>7</sup>

At first, it is worth to say that the importance of the mechanical coinage to the advent Gold Standard was, in fact, indirect. That is, in terms of the process of global financial integration *per se*, it should be recognised that the invention and the spread of those intercontinental communication breakthroughs were more significant and direct to the system's operation. Nevertheless, the section intends to show that the mechanical coinage is important enough to be examined. One might remember that the bimetallism system in Western Europe caused policy difficulties to those nations and hindered them to expand their economies (GALLAROTTI, 1995; EICHENGREEN, 1996; HELLEINER, 2003). Moreover, it helped the establishment of national monetary coherence and

---

<sup>7</sup> Scholarly literature regarding the contribution of those new technologies to financial market integration during the Gold Standard has been relatively modest in comparison with other topics discussed about the globalization of markets in this period. For this reason, this section draws heavily on data collected by Garbade & Silber (1977) and Michie (1987).

identity in local economies, a key element for the success of a gold based monetary system. All in all, such advancements facilitated the countries' adherence to an international regime whose central aspect was the conversion of national currencies into fixed weight of gold.

Technological improvements regarding the manufacture of token coinage in the early nineteenth century were important in organising domestic monetary systems in major European countries. Yet, the Bank of England was the pioneer of minting coins mechanically through these machines, soon after Britain abandoned the bimetallism in 1816 (REDISH, 1990). It was one key historical event which contributed to the emergence of the Gold Standard in England and, by contagion, to the other countries worldwide. Before that, coins were minted employing manual labour. This had several disadvantages since coins were easily counterfeited, so was more difficult to mint small denomination coins, and their weight and size could hardly be constant and homogeneous. As a result, local (national and international) transactions were much more costly.

Helleiner (2003, p. 63) put in historical context the problems caused by the inconvenience of conducting business and building a stable and coherent monetary regime without a uniform national currency. According to him, the expansion of commerce in major countries during the second half of the nineteenth century was severely hindered by this problem. He quoted part of a speech delivered by Canada's Minister of Finance in 1869, which describe quite well the shortcomings of counterfeited money and the difficulties to do business provoked by the absence of a uniform national monetary standard:

Those who were engaged in business – from the largest merchant to the keeper of a corner grocery – had to keep on his desk a Bank Note Detector almost as large as a Family Bible, and had to be constantly getting new editions of it, in order to know what notes were counterfeit, what genuine, and as regarded even the genuine, to know what were worth par, and what rates of discount the others might be taken.

The problems caused by the absence of mechanical coinage and a national common currency in many major countries hindered domestic development and obstructed the cross-national transactions. Even simple transactions became very risky and financially unsafe as seen in the quotation above. Before unification in the early nineteenth century, important European countries such as Germany and Italy used several different coins. This significantly increased costs for investors and merchants since whenever they wished to buy or sell their commodities or assets through countries they had to exchange money, even when moved to a certain province within the same country.<sup>8</sup> The “technological obstacle” to minting coins was overcome by the use of the steam-powered mint machine.

---

<sup>8</sup> Italy was a typical example of the inconveniences created by provincial coins. Helleiner (2003, p. 65) extracted a quotation from a Report ordered by the government of Italy in 1868 about the unification of its monetary system. The author stated: “On the line from Milan to Ancona, you pass across four monetary zones; those, namely, of Lombardy, Parma, Modena, and Romagna; each of which has its coinage, its numerations, unknown on the other side of the frontier, which for any other purpose is already forgotten.”

Instead of production being done by hand, steam-powered engines were used to mint coinage mechanically. They produced coinage with economy (of time and labour) and high precision. This resulted in many advantages: (i) coins were produced in large scale and at low cost; (ii) nation-states could get the earnings of seigniorage and brassage; (iii) coins could not be easily imitated since it became simpler to detect false money; (iv) the counterfeiting became more costly; (v) coins became perfectly uniform; and (vi) it allowed the minting of both lower and higher-denomination coins. All things considered and taking into account the nation-states currency institutional enforcement, the new technology significantly eased the financial management by monetary authorities, and hence the maintenance of currency stability.<sup>9</sup> As a result, the use of the legal tender became more practical and acceptable, allowing and encouraging a much wider range of daily transactions. This institutional change allowed a substantial increase in a successful contract underwriting engagement since it became safer and more reliable in monetary unified economies. Currency credibility avoided the additional cost of paying twice for the same transaction if forged money was used for the first time.

In summary, mechanical coinage allowed the creation of uniform currency and the unification of the national markets, discouraging the counterfeiting and favouring the development of unified national monetary markets. Hence, it contributed to the advent of the Gold Standard regime. On this account, Redish (1990, p. 805) asserted: “The Gold Standard succeeded because the new technology employed by the Mint was able to make coins that counterfeiters could not copy cheaply and because the Mint accepted the responsibility of guaranteeing the convertibility of the tokens”. Helleiner (2003, p. 71) reached the same conclusion when he asserted that “concerns for the transaction costs faced by the poor and those who transacted with them were important not just in prompting reforms of copper coinage and private tokens. They were also central in encouraging countries to introduce the gold standard with the fiduciary silver coinage system.”

Without a uniform currency, agents faced high exchange rate costs and so markets were reduced to their provinces. In a country with different regional coins, daily transactions would certainly be more expensive because agents are forced to continuously exchange money, so variations in the exchange rates meant that purchases and sales would become more expensive. After all, monetary unification was as important institutional aspect for the international affairs at that time as a territorial or linguistic unification. As a matter of fact, money eventually became the

---

<sup>9</sup> It is worth emphasising that technological development was not a panacea for domestic monetary stability. Mint machines made possible homogeneous coinage but it was not enough to guarantee the stability of its value throughout time. It was not enough in terms of money stability and general acceptance without the institutional guarantee given by nation-states. Redish (1990, p. 799) correctly asserted that “the success of the tokens was due both to changes in minting technology that made counterfeiting more costly and the Mint’s willingness to guarantee the convertibility of the tokens”.

common language amongst agents at least in its domestic frontiers. That strengthened the nation-state's key position as the institution that enforced the domestic currency and officially maintained the control of emission within national territory.

Despite the benefits brought by the minting of coinage played a key role in the development of national and international monetary markets, it was not enough to integrate financial markets which were geographically distant. Intercontinental financial transactions were made with a large time delay due to the existent state-of-the-art communication system, and improvements in steamship travel did not eliminate significantly the time of transoceanic transport as well as developments in regional means of transportation such as railways or ferryboats. Certainly, they were not enough to communicate the daily change of prices among markets spread around the world since those prices could change many times a day.

By the mid- nineteenth century, transport time was not sufficiently short to allow an exchange of securities priced information within the same day, even between Britain and France, thus a wider and more active international financial market slowly evolved (MICHIE, 1987, p. 39). Transport of information through physical means was a bottleneck for the progression of global finance. Assuming that geographical distance could not be overcome through the existent means of transportation, it had to happen through technological development of new means of long distance communication. The foundations for large-scale electronic communications were laid during the nineteenth century through the invention of the telegraph, the trans-Atlantic cable and the telephone.

Taking London as the world's core financial centre at the time, one can realise that before the telegraph and the telephone, investors outside London had to keep in touch with the "City" by establishing contracts through correspondence enforced by attorneys (country clients), or through appointed specialised agents to act on their behalf (e.g. large investors, normally foreign banks). This means, investors outside The City had to keep in contact through the dispatch of letters, so decisions had to be taken with a lack of knowledge, despite improvements in the railway system and in other modes of transport used by the Royal Mail (MICHIE, 1987).

Developments in scientific knowledge that gave birth to the telegraph, the trans-Atlantic cable and the telephone during the second half of the nineteenth century significantly improved the speed of long distance information transfer. The growing integration amongst national security markets can be followed by examining the role played by these key breakthroughs in intercontinental market connection. Their operation and development had dramatic impacts on the process of financial globalization (read: global market integration) since the large fall in the cost of communications enhanced the efficiency of financial dealings for both national and foreign transactions. As a result, spatial and temporal barriers were reduced, or "virtually removed" (MICHIE, 1987, p. 47),

connecting many markets that were formerly separated. This transformation can be evaluated through the volume of telegraphic messages (and real time communication) between distant financial centres such as London and New York (figure 1 below).

The introduction of the telegraph and the telephone transformed the security market worldwide. By the late 1840s public telegraph lines linked London and the major British cities, reducing the number of letters dispatched by the Royal Mail and shortening the communication time from days to minutes. These instruments were not confined to Britain, but spread worldwide firstly to Europe and North America, then to the countries in Australasia and Latin America. In 1851, a submarine cable was laid between Dover and Calais, establishing fast and direct communication between The London Stock Exchange (LSE) and The Paris Bourse. In addition, this allowed London to be linked not just to Paris but to the main European Bourses that were already interlinked by telegraph. From 1851 to the early twentieth century, more submarine cables were laid connecting other parts of Britain to continental Europe, particularly to France, to the Netherlands, Belgium and Germany. The figures illustrating this flow of information are quite impressive. According to Michie (1987, p. 42):

Altogether, of the 17,372 telegrams sent to and received from continental centres by the members of the London Stock Exchange between 12 and 17 July 1909, 43.1 per cent were German, 19.7 per cent French, 17.8 per cent Dutch and 8.2 per cent Belgian, leaving only 11.1 per cent for the rest of Europe. This volume of business represented an equivalent of one telegram being received or dispatched every second for an eight-hour working day during a six-day week.

The data shows how well integrated in terms of communications the major European stock exchanges were in the early twentieth century. Investors were now able to conduct business much more quickly than they had been able to before. The good results encouraged further development of data transmission technologies promoting an even higher dramatic fall in the costs, allowing financial transactions to be accomplished more efficiently. As Michie (1987, p. 44) observed “in 1851 it cost £1.4 (£1 8s) to send the minimum message between London and Paris, while by 1906 the charge had fallen to only £0.04 (10d) or a decline of 97 per cent.” In sum, in fifty five years, the cost of sending messages became negligible, then the problem high uncertainty and of asymmetric information was sharply deflated, spurring denser integration between the key financial centres in Western Europe.

On 27<sup>th</sup> July 1866, the trans-Atlantic telegraph cable was put into operation connecting London and New York (GARBADE and SILBER, 1977, p. 826), and then to Melbourne in 1872, Buenos Aires in 1874 (MICHIE 1987:45), and Tokyo in 1900 (BORDO, EICHENGREEN and IRWIN, 1999, p. 32). Thereby, at the turn of the twentieth century, the world’s major financial centres were integrated with each other through telegraphic communications. Britain was linked to North America, to key countries in continental Europe, to South America, Asia, and Oceania.



Despite the limitations of the technology available, these five continents were interlinked as never before, and then the world's major national financial markets became globalised for the first time in history.

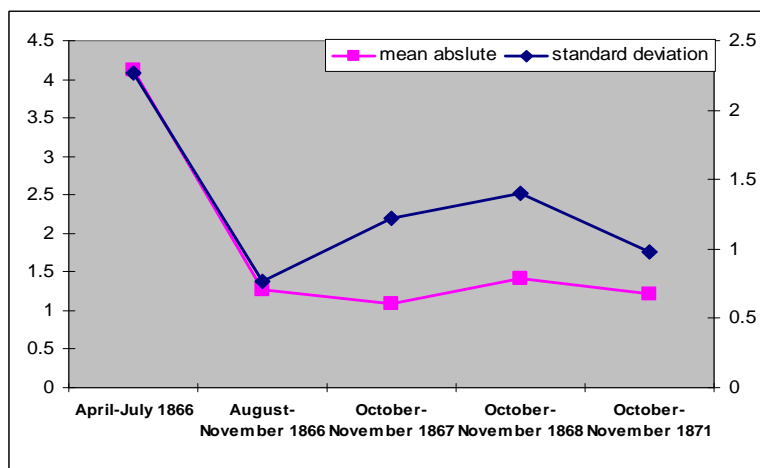
Contemporary scholars have emphasised the key role played by the trans-Atlantic cable as a historical step towards global financial integration, but it is worth noting that the press at the time also highlighted the importance of this fact. Indeed, an American local press underlined the importance of this historical event for the US economy. It was especially important to solve the problems related to the low level of integration and high uncertainty in financial and commercial activities, since agents could take decisions with much more knowledge and confidence. Garbade and Silber (1977, p. 827) extracted this historical record from a New Yorker newspaper:

The contemporary press immediately recognized the importance for enhancing the integration of American and European markets. On July 30, 1866 the *New York Evening Post* wrote 'The Atlantic Cable will tend to equalize prices and will eliminate from the transactions in bonds, in merchandise and in commodities, an element of uncertainty which has had the effect of ... seriously damaging the commercial relations between this country and Europe.' As if to foster these ends, the *Post* began to publish price quotations from the London market the next day.

Before the transatlantic cable, financial integration was advancing amongst Western European countries, encouraged by telegraphic technological devices, geographical proximity and cultural affinity. However, the US economy was too strong to remain disconnected and the long distance between America and Europe hindered the development of a larger volume of financial transactions. Prior to the cable, investors in London or New York received price information with three weeks delay on average (GARBADE and SILBER, 1977, p. 820). Agents continuously faced a dilemma: they had to decide if they would invest based on knowledge or based on their estimations and expectations. After the cable, the delay dropped to a day, thus their estimations became much more precise and price differentials reduced significantly. Market participants were more sensitive to price changes on identical assets, so they were able to execute business faster than in the past, therefore arbitrage operations became more attractive.

Garbade and Silber (1977) tested the impact of the submarine cable between London and New York focusing on the differentials in the prices of the same asset traded in these two centres. They calculated the inter-market price differentials through the mean price - there was an absolute difference of prices in these two markets - and the standard deviation of these differences during the period of pre-cable and post-cable. Their results are presented in these figures below.

**Figure 1. Effects of domestic telegraph and trans-Atlantic cable: Mean absolute and standard deviation of the absolute difference of the United States 5-20 Bonds in New York and London**



Source: Garbade and Silber (1977, p. 825).

During the four months before the launch of the cable, the mean absolute difference of security prices between London and New York was \$4.118 but this difference fell by half four months later. As can be seen in figure 8, this fall was fast and consistent during the time interval analysed. On average, prices became closer and continued this way in the following years. Similarly, the standard deviation of the absolute difference series had the same sharp fall after four months, which meant that the dispersion of prices reduced by more than fifty per cent. These results indicate that these markets became more integrated. The price convergence between them is a piece of evidence of the positive impacts on the trans-Atlantic financial integration provided by the telegraph.

These figures become more significant if they are compared to the results obtained between European and Anglo-American Stock Exchange telegraph traffic, which provides important evidence related to the relevant impact of trans-oceanic communication over these key centres. Table 1 displays the results of intercontinental communications between the most important world financial centres, i.e. the LSE, key European countries and the US.<sup>10</sup>

<sup>10</sup> Garbade and Silber made similar calculations between New York, New Orleans and Philadelphia using different asset prices before the telegraph and after the telegraph. Their results were not much less significant.

**Table 1. European and Anglo-American Stock Exchange telegraph traffic: 1908-09**

Time	Anglo-Continental Telegraph Service, 5-7 July 1909						Anglo-American Telegraph Co. 22-24 September 1908		
	France			Germany			London out	London in	Total
	London out	London in	Total	London out	London in	Total			
<b>Entire day</b>	1,317	787	2,104	2,821	1,573	4,394	2,005	4,111	6,116

Source: Post Office Memorandum, Anglo-Continental Telegraph Service, 11 August 1909; M. Carson, Manager, Anglo-American Telegraph Co., to F. J. Brown, General Post Office, London, 22 October 1908, quoted in Michie (1987, p. 44).

As can be seen, there was a marked difference of communication between London and the main European countries and London and the US. London sent more messages to France and Germany than were received by them, conversely, the opposite happened between US and London. It is explained by the continental size of the American economy. Overall, the table shows an intense exchange of information circulating amongst the stock exchange markets of these core countries.

Based on the table above, nothing can be concluded regarding the evolution of the volume of messages exchanged between Britain and America before 1908. Michie (1987, p. 45) compared to the number of messages sent per minute between London and the US in the initial period of the transatlantic cable and 1908. Thus, it became possible to evaluate both the increased intensity of this communication and the large fall in its cost. He pointed out that:

In 1908 an average of thirty-two telegrams a minute were being sent and received over the Anglo-American Company's wires, during the busy period between 3 p.m. and 4 p.m., compared to a maximum of seven when the cable opened in 1866. At the same time, the cost of a one-word telegram fell from £20 in 1866 to £1 in 1902, or by 95 per cent; the cost continued to fall as competition grew, to £0.1 (2s) by 1906, or by a further 90 per cent. ... The volume of telegrams between London and New York using the Anglo-American cables can be estimated to have risen from about 42,000 a year in 1871 to 570,000 in 1908, or by 1,257 per cent.

These dramatic cost reductions also happened within European economies. Hence, lower cost communications at that time were as fast as possible, allowing investors to operate more accurately in different countries. Their security markets no longer played a local role but influenced, and were influenced by quotations obtained in different centres. This increased communication developed until the verge of the WWI.

In 1891, the telephone allowed two-way instantaneous communication turning the telegraph into an outdated device, providing the technological support for the simultaneous operation of a wide range of markets. This was important not just in allowing a very quick exchange of information, but also changed the way financial cross-border transactions were conducted. Initially this invention was confined to subscribers in London, but by the turn of the century it had spread throughout Britain, the major countries in continental Europe and to the US, so that from the end of

the nineteenth century onwards, the telephone hastened the process of financial integration even more.

The advantages of communication via telephone encouraged the development of its technology. As one can realise, in 1891 London was linked to Paris by telephone, then six years later, these interconnections increased considerably since two more cables were laid between these two cities. Phone communication was more expensive than telegraphic messages at that time but its vastly increased speed outweighed this concern, and so telephonic communication was therefore preferable. The benefit of instantaneous communication overcame its high costs, which is why in the early twentieth century the use of the device spread quickly amongst stock markets in developed countries. According to Michie (1987, p. 45):

A three-minute call from London to Paris cost £0.4 (8s) or ten times more than a telegram, but it did provide voice-to-voice contact. As a result, there was a general switch away from the telegraph for those centres possessing direct London telephone connections, namely, Paris and Brussels, while the telegraph continued to be central for business with other continental centres, such as Berlin, Frankfurt and Amsterdam. Thus, in European communications the arrival of the telephone represented the final stage on the removal of all communications barriers, which had been begun by the telegraph.

All those devices considered so far played a key role in global integration during the 1870-1914 era they represented a good help to policy makers, international agents and investors in the sense that they readily respond to deals in centres connected to each other, allowing countries and companies could issue securities to deal internationally, and so these assets became more marketable than before. In fact, Goodhart maintained that the transatlantic cable in 1866 marked the beginning of the first financial globalization era (EICHENGREEN & BORDO, 2002, p. 3) instead of the emergence of the Gold Standard. Without mentioning the expression “financial globalization”, Michie (1987) also took into account the importance of the telephone and arrived at the same conclusion.<sup>11</sup> Nevertheless, it is worth mention that a perfect and complete integration was not achieved but at least the main countries in each continent were able to establish instant contact with each other, and this obviously included not only developed countries but key developing ones. Table 2 gives an example of this global integration.

---

<sup>11</sup> Focusing on London as the core financial centre of that time, Michie (1987, p. 47) pointed out: “The spatial and temporal barriers that had divided London from other securities markets had been virtually removed through the introduction of the telegraph and telephone and their progressive refinement. ‘Communications between London, Paris, Shanghai, Johannesburg and other great cities is undertaken to-day with greater ease and rapidity than formerly attended the transmission of a message from London to Bath’” was one observer’s conclusion in 1908, echoed by many others. **The conditions for an international market in securities now existed**” (emphasis added).

**Table 2. London Stock Exchange: Government Securities Quoted, 31 December 1910 (In pounds)**

<i>Category</i>	<i>Paid-up value</i>	<i>Average size of individual issue</i>	<i>% Total paid-up value</i>
<b>UK total</b>	1,050,929,844	4,342,685	19
<b>Colonial total</b>	824,695,955	2,561,168	15
<b>Foreign total</b>	3,702,452,964	15,236,431	66
<b>World total</b>	5,578,078,763	6,912,117	100.00

Sources: London Stock Exchange Official List, 31 December 1910; Stock Exchange Official Intelligence (London, 1910 and 1911); extracted from Michie (1987, p. 51)

Table 2 displays the paid-up capital from the UK government securities traded at the LSE in 1910, which provides evidence of the high degree of LSE internationalisation since there were investments made and paid for by Britain to countries located in all continents.<sup>12</sup> In fact, during the nineteenth century the LSE overcame the Amsterdam Bourse, its stronger competitor at the time, and until WWI it became the world's largest and most international stock market. LSE activities were internationally oriented due to the historical context of British imperialism, thus a high proportion of British securities were held abroad. This did not mean that only Britain was able to trade securities overseas, since there were open channels of two way flow of communication, which means that there were also more visible opportunities for savers and borrowers to negotiate abroad in a wide diversity of countries. Essential information about financial assets such as their price, rate of return, maturity, and potential risk could be changed much more quickly in comparison to the period without intercontinental communiqés.

The underwater communication interconnected central banks, commercial banks, public and private financial institutions in general. Consequently, a great variety of financial transactions that were too risky and of little potential profit in the past became negotiable. This also promoted the development of many of financial instruments that made possible short and long-term transactions. Eventually, financial transactions could be done between wide numbers of countries spread worldwide. Incidentally, this is a core characteristic of financial globalization as conceived in this article. Once more, this does not mean that the process of integration and/or financial development was free from irregularity or unevenness. The development of national financial markets depends

<sup>12</sup> In 1903 Pratt, quoted in Michie (1987, p. 34), asserted: "The bonds of every Government, the stocks of every country, are traded in London [while] Wall Street confines itself to the securities of the United States". Comparing the biggest Stock Exchange market in Europe with the biggest of the Americas, Michie (1986, p. 184) confirmed the point established by Pratt: "there was a growing divergence between the London and New York exchanges in the matter of the securities quoted. Increasingly London provided a market for securities from the whole world, while New York traded almost exclusively in American stocks and bonds."

on numerous historical circumstances and institutional arrangements that are far beyond being solved only through the establishment of advanced technological communication devices.

Domestic institutional arrangements in finance are subjected to the historical peculiarities of each country, i.e. some economies are more or less vulnerable than others. As with any other market, financial markets evolve idiosyncratically, and the total paid-up value in percentage showed in table 2 presents these differences. In Europe, only three countries (France, Germany and Italy), received a third of the value paid for by LSE in 1910. All Latin American countries, China, Greece and Turkey received altogether little more than 8 percent.

Financial globalization did not imply financial homogenisation. Instead it involved a system which was able to (unevenly) connect different financial markets that spread worldwide, and that were able to play the financial game. The technological breakthroughs discussed in this section drastically reduced delays in exchange of information, allowing then national markets to attain a global scope, but did not result in perfect symmetry of economic and financial development. Despite the enormous progress obtained in transoceanic communication, Bordo, Eichengreen and Irwin (1999) pointed out that geographical ignorance created serious problems for investors to oversee their investment. According to them, the disproportionate share of railway bonds in foreign investment portfolios is evidence of this difficulty because it was relatively easier to monitor the actions of a railway company than other economic activities.

In addition, Bordo *et al* (1999) asserted that the limitations of communication technology in acquiring reliable information from distant markets can explain the limited importance of FDI prior to 1914, explaining then the importance of the free-standing company as the vehicle for foreign direct investment. A great majority of foreign investment prior to 1914 took the form of portfolio investment. FDI was undertaken mainly by free-standing companies that had limited scope to operate abroad and that were poorly assessed quantitatively<sup>13</sup>. Free-standing companies became increasingly important as British investors gradually diversified his/her investments in railroads and government bonds into farming, ranching, mining and brewing as they were trying to avoid agency problems.

In summary, several obstacles that hindered a worldwide flow of information were removed by the key nineteenth century technological breakthroughs in communications. As a result, the falling costs were an important element in explaining global financial integration and the high level of cross-border capital mobility during the 1870-1914 era. This process began in Britain, spread to

---

<sup>13</sup> According to Wilkins (1998, p.13) free-standing companies “were structured to solve the problem posed earlier; business abroad was risky; it was hard to obtain adequate and reliable information about firms in distant lands; returns were unpredictable; but there were clearly opportunities abroad; a company organized within the source-of-capital country, with a responsible board of directors, under source-of-capital country law, to mobilize capital (and other assets) and to conduct the business in foreign countries could take advantage of the opportunities, while reducing the transaction costs by providing a familiar conduit.”

continental Europe and, after the transatlantic cable, moved to the rest of the world, allowing capital markets to do business more efficiently, but also to be more visible, interconnected, interdependent and global. The analysis provided in this paper accounts that the key reason for all those transformations observed over time since the 1870s followed an evolutionary process within a dense network of historically specific financial institutions.

## 5. Building global markets through colonial ties

During the Gold Standard, the core of the world economy in trade, investment and finance was centred in Europe. At the turn of the nineteenth century the US economy became an important player in the industrial and financial scenario surpassing key European economies except Britain and France. Table 3 presents the picture of global capital flows and its most important players worldwide. The leadership of Britain was far ahead of all other leading countries, but in 1920 the US reached the same ratio of capital flow to output as Britain and surpassed all other Western European nations.

**Table 3. International capital flows as a percent of Gross National Product, selected countries by decade: 1870-1920 (+ = outflow; - = inflow)**

<i>Sending countries</i>					<i>Receiving countries</i>			
<i>Year</i>	<i>UK<sup>a</sup></i>	<i>France</i>	<i>Germany<sup>b</sup></i>	<i>Italy</i>	<i>Sweden<sup>c</sup></i>	<i>USA<sup>d</sup></i>	<i>Canada</i>	<i>Australia</i>
1870	5.62	-	0.56	0.4	-1.61	-2.68	-7.6	0.02
1880	3.23	-0.41	1.92	0.68	-3.68	0.09	-	-0.07
1890	5.75	1.97	1.97	-0.35	-2.48	-0.05	-7	-0.09
1900	1.76	3.81	1.26	2.23	-2.71	1.43	-4	-0.04
1910	7.38	3.61	1.31	-0.07	0.39	-0.03	-12	0
1920	2.58	-	-	-4.77	0.48	2.42	-4.9	-0.01

<sup>a</sup> United Kingdom: Figures are three-year averages centered on dates shown.

<sup>b</sup> Germany: Net flow is divided by net national product. Figures are three-year averages centered on 1870, 1880, 1890, 1900, 1910.

<sup>c</sup> Sweden: Net flow is divided by gross domestic product. Figures are averages value over the following periods: 1866-75 (1870); 1876-85 (1880); 1886-95 (1890); 1896-1905 (1900); 1906-15 (1910); and 1916-25 (1920).

<sup>d</sup> US: Figures are five-year moving averages centered on the years 1871, 1881, etc.

Source: Green & Urquhart (1976:244).

Most of the capital invested was basically long-term, which took the form of direct investment and bank loans. The majority of long-term foreign investments were spent between developed countries in Western Europe and, mainly by the turn of the nineteenth century, between Europe and the US. Yet, it was also employed in overseas regions of recent settlements chiefly to construct port facilities, railroad networks and infrastructure in general. The profitable

opportunities abroad were too high to miss since those areas suffered from a huge lack of infrastructure, and investors from the core countries (especially Britain) were eager to attract new promising markets.

An important factor to encourage financial integration was the cultural proximity amongst countries of Western Europe and their (ex)-colonies. Colonial ties played an important role in the process of global financial integration because natural barriers such as language, legal and accounting systems facilitated the development of investments from the core countries to the colonies. For instance, despite Britain having a long and strong commercial presence (and considerable political influence) in Argentina and Uruguay, her amount of investment was relatively much higher in her (ex)-colonies. Profitable opportunities were high since the majority of those (ex)-colonies did not have their own financial conditions to finance infrastructure investments, which required long-term investment.

Table 4 shows that British investment was concentrated in Europe and North America. In addition, despite Latin America being geographically closer to Britain than Oceania, Latin America received a third of the amount invested in Oceania. Cultural barriers hindered a riskier volume of investment in that area. France also directed its lending to countries where it had a strong political influence and close cultural ties, e.g. Italy, Spain, and Russia.

**Table 4. The distribution of British foreign investment by areas (in million dollars)**

<i>Foreign Long-term Investments in</i>	<i>Amount</i>
Africa	4,700
Asia	6,000*
Europe	12,000
North America (north of Mexico)	10,500**
Latin America	850
Oceania	2,300

Source: North (1962:24)

\* Of which China, \$1,600 million.

\*\* Of which the United States, \$6,800 million.

An important aspect of this debate highlighted by most economic historians is the close connection between migration and capital movements. The reverse cycles of migratory movements represented an important source of information for European investors in the overseas areas of recent settlement but the phenomenon was stronger amongst Anglo-Saxon countries in general, especially between Britain and the US. Throughout the Gold Standard era, a large number of workers and investors left Britain go to America mainly. Many of them became American residents, but some were investors who moved to that country to identify potential sources of



investment and send valuable information about local conditions to their companies in Britain. Then the British company set up agreements to finance those investments. Given the limitations of communication at the time, this was an alternative way of avoiding major investment loss.

After those people left Britain, there was a tendency to raise the salaries in the US. Its domestic profit rate fell in some specific areas, and then investors sought new investment alternatives in areas where the labour price was cheaper due to the great contingent of workers available. Soon afterwards, there was the reverse cycle in America but this migratory flow stopped when the US became a capital exporter by the early twentieth century.

Both emigration and foreign investment were cyclical phenomena, increasing during the boom and falling away in times of depression. These movements of labour had a considerable influence on investment in countries that were gaining in population, as well as in Britain. This process happened until WWI, and subsequently that sort of migration flow was never repeated again, being as it was an exclusive characteristic of the Gold Standard. The inflow of capital into those countries had great repercussions on the domestic and export sector, for instance the US, Canada, Australia and other British borrowers expanded considerably their commodity, industrial and capital export sectors.

To sum up, colonial ties played an important role in global financial integration during the Victorian era, especially regarding the “Atlantic economy”. They established similar rules for juridical, financial, and property right systems, which favoured the investor’s decision on behalf of economies with the same system. Massive migration between English-speaking countries in response to profitable opportunities resulted, on the one hand, in a movement of long-run capital where they were relatively abundant to countries where they were relatively scarce. On the other hand, it triggered a process of cyclical development concentrated in those world areas.<sup>14</sup>

## **6. Concluding remarks**

This article intended to scrutinise the institutional aspects of financial globalization underlying the 1870-1914 period. It identified its main institutions and evaluated the role of the institutional changes in the development of that experience. It also discussed the key

---

<sup>14</sup> This phenomenon of mass migration during the pre-1914 years was not exclusive to Anglo-Saxon countries. Bordo & Eichengreen & Irwin (1999:16) show that a similar movement also happened in Italy. However, this movement was not motivated by colonial ties at all. “The high level of migration, including reverse and seasonal migration, which characterized the late nineteenth century was an important channel for the flow of such information. Italian workers who travelled to the New World for a few years, or even just for the planting and harvest seasons, before returning to their home town in Italy formed an obvious network for information about supplies and demands in the Americas. Multinational corporations similarly established (in their case, proprietary) networks for conveying such information across borders.” Each one of the main European countries had a specific way to undertake their external long-term investments. So, it is not possible to generalise a common pattern for all of them. The emphasis on the English-speaking countries above is justified by their relative importance in the economic and financial scenario of the time.

transformations for the development of capital mobility during the first financial globalization era in a variety of institutions such as markets, central banks, banking and non-banking institutions, and legal regulations. It was verified that pre-existent and new institutions both adapted themselves according to economic and political changes in the historical context. The main institutions that led to the first upsurge of financial globalization emerged in the UK and in the core Western European countries. These countries were motivated to carry out great capital transactions due to their advanced industrial and technological development, and due to colonialist expansion. In other words, economic conditions, political organisation, technical progress and reliable institutions made possible the emergence and maintenance of markets, rules and international solidarity for close to forty years.

The historical importance of domestic policies to adjust internal financial markets into a global shape has been remarkable. Over time, national economies have adjusted their fiscal and monetary policies in order to become part of a “global discipline”. In this globalization era, this policy adaptation (whether voluntary or not) played an important role in the process of the gradual international interconnectedness of a number of nations. Colonial (cultural) ties also played an important role since in improving cross-countries financial integration since it broke a natural barrier such as language, legal and accounting systems, facilitating the interconnection between investors from core economies to colonies and ex-colonial countries.

In summary, the article sought to present the reasons why a network of institutions was important for the emergence to the classical Gold Standard. The reasons varied greatly according to the historical moment and to the historical specificities of that time. The paper presented a way of understanding the emergence of an international monetary system that is not commonly found in the literature. One of the most important lessons can be drawn from this analysis is that the historical formation of the institutions must be taken into account when formulating any kind of economic policy which intends to contribute to the economic and social stability of a nation.

## **Bibliography**

ALDCROFT, D., RICHARDSON, H. **The British economy 1870-1939**. London: Macmillan, 1970.

ARGYROUS, George & SETHI, Rajiv (1996) “The theory of evolution and the evolution of theory: Veblen’s methodology in contemporary perspective.” **Cambridge Journal of Economics**, v. 20, pp. 475-495.

BAIROCH, P. “Globalization myths and realities: one century of external trade and foreign investment.” In BOYER, R. & DRACHE, D. (eds.). **States Against Markets: the limits of globalization**. Routledge: London & New York, 1996.

BAIROCH, P. & KOZUL-WRIGHT, R. "Globalization myths: some historical reflections on integration, industrialization and growth in the world economy." **UNCTAD Discussion Paper 113**, March, 1996.

BALDWIN, R. E. & MARTIN, P. "Two waves of globalization: superficial similarities, fundamental differences". **NBER Working Paper 6904**, January, 1999.

BLOOMFIELD, Arthur E. **Monetary policy under the international Gold Standard: 1880-1914**. New York: Federal Reserve Bank of New York, 1959.

BORDO, M. & EICHENGREEN, B. & Irwin, D. "Is globalization today really different than a hundred years ago?" **NBER Working Paper 7195**, September, 1999.

BORDO, M. & ROGOFF, H. "The Gold Standard as a 'good housekeeping seal of approval'." **The Journal of Economic History**, 56 (2) pp. 389-428, 1996.

CAIRNCROSS, A. K. **Home and foreign investment 1870-1913**. Cambridge: CUP, 1953.

CHANG, H-J **Kicking away the ladder: Development strategy in historical perspective**. London: Anthem Press, 2002.

COLANDER, David (1996). "New institutionalism, old institutionalism, and distribution theory." **Journal of Economic Issues**, v. 30 (2) pp. 433-42.

EDELSTEIN, M. **Overseas investment in the age of high imperialism: the United Kingdom 1850-1914**. New York: Columbia University Press, 1982.

EICHENGREEN, B. **Globalizing capital: A history of the international monetary system**. Princeton: Princeton University Press, 1996.

EICHENGREEN, B. J. & BORDO, M. D. "Crises now and then: what lessons from the last of financial globalization was?" **NBER Working Paper 8716**, January, 2002.

GALLAROTTI, G. **The anatomy of an international monetary regime: the classical gold standard, 1880-1914**. New York; Oxford University Press, 1995.

GARBADE, K. D. & SILBER, W. L. "Technology, communication and the performance of financial markets: 1840-1975." **The Journal of Finance**. 33 (3) pp. 819-32, 1977.

GREEN, A. & URQUHART, M. C. Factor and commodity flows in the international economy of 1840-1914: a multi-country view. **Journal of Economic History**, 36 (1) pp. 217-52, 1976.

HODGSON, Geoffrey M. (1992) "Thorstein Veblen and post-Darwinian economics." *Cambridge Journal of Economics*, v. 16, n. 3, p. 285-301, sept.

HODGSON, Geoffrey M. (1993) Institutional Economics: Surveying the 'old' and the 'new'. **Metroeconomica**, v. 44, n.1, p. 1-28.

HODGSON, G. M. **Economics and Institutions: A Manifesto for a Modern Institutional Economics**, Polity Press and University of Pennsylvania Press, Cambridge and Philadelphia, 1988.

- HODGSON, G. M. "The approach of institutional economics." **Journal of Economic Literature**, 36 (1) pp. 166-92, 1998a.
- HODGSON, Geoffrey M. (1998b) "On the evolution of Thorstein Veblen's evolutionary economics." **Cambridge Journal of Economics**, v. 22, p. 415-431.
- HODGSON, G. M. **How economics forgot history: the problem of historical specificity in social science**. London: Routledge, 2001.
- HODGSON, G. M. "General theorising versus historical perspective: a problem for post Keynesians. In: ARESTIS, P., DESAI, M & DOW, S. (eds.) **Methodology, microeconomics and Keynes: Essays in honour of Victoria Chick**. Vol. 2. London: Routledge, 2002.
- HODGSON, G. M. "The hidden persuaders: institutions and individuals in economic theory." **Cambridge Journal of Economics**, 27 pp. 159-75, 2003.
- HODGSON, G. M. "The problem of historical specificity". In: Stavros, I. & Nielsen, K. (eds). **Economics and the social sciences: Boundaries, interaction and integration**. Cheltenham UK and Northampton MA: Edward Elgar, 2007.
- IMLAH, A. **Economic elements in the Pax Britannica**. Cambridge: Harvard University Press, 1958.
- KEYNES, J. M. [1930] "Problems of international management - II. The gold standard". In: **A Treatise on Money: II. The applied theory of money**. London: Macmillan (The Collected Writings of John Maynard Keynes, v. VI, book VII, chapter 35), pp. 258-69, 1971.
- HELLEINER, E. **The making of national money: territorial currencies in historical perspective**. Ithaca and London: Cornell University Press, 2003.
- Mayhew, Anne (1987) "The beginnings of institutionalism." *Journal of Economics Issues*. v. XXI, n. 3, September, pp. 971-98.
- MCCLOSKEY, D. N. & Zecher, R. How the Gold Standard worked, 1880-1913. In: Harry, G. J. & Frenkel, J. (eds). **The monetary approach of the balance of payments**. Toronto: University of Toronto Press, 1976.
- MICHIE, R. C. **The London and New York stock exchanges, 1850-1914**. London: Allen and Unwin, 1987.
- NELSON, Richard. "Recent evolutionary theorizing about economic change." **Journal of Economic Literature**. Vol. XXXIII, March, pp. 48-90, 1995.
- NURSKÉ, Ragnar. **International currency experience**. Geneva: League of Nations, 1944.
- NORTH, D. C. "International capital movements in historical perspective." In: Mikesell, R. F. (ed) **U.S. private and government investment abroad**. Eugene: University of Oregon Books, pp. 10-43, 1962.

- PLATT, D. C. M. **Finance, trade and politics in British foreign policy 1815-1914**. Oxford: Clarendon Press, 1968.
- PERRATON, J. "The Scope and Implications of Globalization." In: Michie, Jonathan (ed) **The Handbook of Globalization**. Cheltenham. Edward Elgar, 2003.
- POLLARD, S. Capital exports, 1870-1914: harmful or beneficial? **The Economic History Review**, Second Series, 38(4), Nov. 1985.
- REDISH, A. "The evolution of the Gold Standard in England." **The Journal of Economic History**. 50 (4), pp. 789-805, 1990.
- RUTHERFORD, Malcolm (1996) **Institutions in economics: the old and the new institutionalism**. Cambridge: Cambridge University Press.
- SAMUELS, Warren J. (1995) "The present state of institutional economics." **Cambridge Journal of Economics**, v. 19, pp. 569-590.
- THOMAS, Brinley (1954) **Migration and Economic Growth: a study of Great Britain and the Atlantic economy**. Cambridge: Cambridge University Press.
- WILKINS, M. "Multinational enterprises and economic change." **Australian Economic History Review**. 38 (2), pp. 103-34, 1998.
- VEBLEN, T. B. "Why is economics not an evolutionary science?" **The Quarterly Journal of Economics**. 12 (4) Jul., pp. 373-397, 1898a.
- VEBLEN, T. B. "The instinct of workmanship and the irksomeness of labor." **American Journal of Sociology**, 4 (2), Set., pp. 187-201, 1898b.
- VEBLEN, T. B. **The theory of the leisure class**. New York: B. W. Huebsch, 1899.
- VEBLEN, T. B. **The place of science in modern civilization, and other essays**. Boston: Houghton Mifflin, 1919.
- WHITE, H. D. **The French international account, 1880-1913**. Cambridge: Cambridge University Press, 1979.