

# The European Payments Union and the origins of Triffin's regional approach towards international monetary integration



## Working Paper Research

by Ivo Maes and Ilaria Pasotti

September 2016 No 301

---

**Editor**

Jan Smets, Governor of the National Bank of Belgium

**Statement of purpose:**

The purpose of these working papers is to promote the circulation of research results (Research Series) and analytical studies (Documents Series) made within the National Bank of Belgium or presented by external economists in seminars, conferences and conventions organised by the Bank. The aim is therefore to provide a platform for discussion. The opinions expressed are strictly those of the authors and do not necessarily reflect the views of the National Bank of Belgium.

**Orders**

For orders and information on subscriptions and reductions: National Bank of Belgium,  
Documentation - Publications service, boulevard de Berlaimont 14, 1000 Brussels

Tel +32 2 221 20 33 - Fax +32 2 21 30 42

The Working Papers are available on the website of the Bank: <http://www.nbb.be>

© National Bank of Belgium, Brussels

All rights reserved.

Reproduction for educational and non-commercial purposes is permitted provided that the source is acknowledged.

ISSN: 1375-680X (print)

ISSN: 1784-2476 (online)

## **Abstract**

Robert Triffin (1911-1993) played an important role in the international monetary debates in the postwar period. He was known as one of the main advocates of a multipolar international monetary system. In this paper we analyse the origins of Triffin's "regional" approach towards international monetary integration. We argue that Triffin's experience with the European Payments Union (EPU) played hereby a crucial role. Triffin was not only an "architect" of the EPU, but the EPU also led to an important shift in Triffin's view of the geography of the international monetary system. Before his work on the EPU, Triffin thought of the international economy as composed of two geographical entities: national economies and the world economy. With his work on the EPU he introduced a third geographical entity: the region. The EPU would so be at the basis of Triffin's advocacy of a regional approach towards international monetary integration. Moreover, while Triffin was initially quite positive on the IMF, he became, through his EPU experience, more critical of the IMF and its worldwide approach.

JEL classification: A11, B27, B31, F02, F33, F36, N24

Keywords: Triffin, European Payments Union (EPU), international monetary system (IMS).

## **Authors**

Ivo Maes, Economics and Research Department, NBB, Robert Triffin Chair, Université catholique de Louvain, and ICHEC Brussels Management School - e-mail: [ivo.maes@nbb.be](mailto:ivo.maes@nbb.be)  
Ilaria Pasotti, Catholic University of Milan – e-mail: [pasotti.ilaria@gmail.com](mailto:pasotti.ilaria@gmail.com)

## **Acknowledgements**

The authors would like to thank all those who contributed to this project, especially L. Costabile, J. de Larosière, K. Dyson, K. Hoover, G. Montani and participants at the UACES (University of Bilbao), Aphas (University of Evora), Storep (University of Catania) meetings and seminars at the universities of Pavia, Napoli and Milano, as well as an anonymous referee. The usual caveats apply.

The views expressed in this paper are those of the authors and do not necessarily reflect the views of the National Bank of Belgium or any other institution to which the authors are affiliated.

## TABLE OF CONTENTS

<b>1. Introduction</b>	<b>1</b>
<b>2. Triffin's formative years</b>	<b>2</b>
2.1. Undergraduate studies in Louvain and the Belgian franc devaluation of 1935	2
2.2. Schumpeter and the spell of pure theory	3
2.3. The Federal Reserve and the Latin America missions	4
<b>3. Triffin's first analysis of the international monetary system</b>	<b>5</b>
<b>4. The European economy and payments systems after WW II</b>	<b>8</b>
<b>5. Triffin and the EPU</b>	<b>10</b>
5.1. Triffin's proposal for a European clearing union	11
5.2. The European Payments Union	14
5.3. The functioning of the EPU	16
<b>6. Triffin's criticisms of the IMF policy strategy</b>	<b>17</b>
<b>7. Triffin's defence of the EPU</b>	<b>20</b>
7.1. A discriminatory trade and payments area?	20
7.2. A monetary gimmick?	22
<b>8. The European Payments Union as the paradigm for Triffin's approach towards a new European and international monetary system</b>	<b>34</b>
8.1. Triffin's vision of the post-EPU IMS	24
8.2. Triffin's vision of a "post-EPU" Europe	26
<b>9. Conclusion</b>	<b>29</b>
References	31
National Bank of Belgium - Working papers series	35

*I am very much in sympathy with the empirical and pragmatic approach to our problem, as long as it is allied to bold and imaginative thinking and does not reflect merely inertia and cowardice" (Triffin, as quoted in Knorr 1952c: 45).*

## **1. Introduction**

Robert Triffin (1911-1993) played an important role in the international monetary debates in the postwar period. He became famous with his book *Gold and the Dollar Crisis*, published in 1960, in which he predicted the end of the Bretton Woods system. But he was already influential before that. Eichengreen (1993, ix) even describes him as "the EPU's architect". In this paper, we focus not only on Triffin's role in the creation of the EPU, but also on his vision that a regional approach was the most appropriate way to reform the international monetary system. We argue that the experience of the EPU was at the origins of Triffin 's advocacy of a multipolar international monetary system.

As argued by one of us (Maes 2013), there was a remarkable continuity in Triffin's vision of the international monetary system. From his earliest writings, Triffin argued that the international adjustment process was not functioning according to the classical mechanisms. As countries needed time for economic adjustment, Triffin argued that international liquidity should be at the core of the international monetary system, and he pleaded for better economic policy coordination as well.

In this paper we argue that the European Payments Union led to an important shift in Triffin's view of the geography of the international monetary system. Before his work on the EPU, Triffin thought of the international economy as composed of two geographical entities: national economies and the world economy. With his work on the EPU he introduced a third geographical entity: the region. The EPU would so be at the basis of Triffin's advocacy of a regional approach towards international monetary integration.

Triffin was one of the architects of the European Payments Union, which was created in 1950. At the centre of the EPU was the "clearing house" which not only played a role in the clearing and settlement of payments but also in the provision of (temporary) financing of balance of payments deficits and the coordination of economic policies, key elements of Triffin's approach. Moreover, Triffin defended the use of a new unit of account to express the clearing balances. The EPU became a big success, for which Triffin also claimed credit.

After the EPU, Triffin put forward proposals for reforming the international monetary system. But because he doubted that they would come to fruition, he also developed plans for regional monetary integration, at the beginning, particularly for Europe and later, throughout the 1960s, also for other geographical areas. They were very much based on his experience with the EPU, as they focused on a (European) Reserve Fund and (European) currency unit. In Triffin's view, the regional and worldwide approaches were complementary, aiming at a new multipolar international monetary system, with the European Community as an essential pillar. He thus became a great partisan of European monetary integration. As he observed in *Europe and the Money Muddle*, "Countries whose peace, progress and welfare are intimately interdependent must, in their own interest, learn to use or limit their national sovereignty in the light of their interdependence" (Triffin 1957: 30).

As observed by former IMF Managing Director Jacques de Larosière, "The most remarkable thing about the work and personality of Professor Robert Triffin, in my view, is the combination of three aspects: his power of analysis, his institutional imagination, and his pragmatism as a practitioner." (de Larosière, 1991, p.135). All this comes clearly to the fore in Triffin's contributions to the creation of the EPU and his regional approach toward international monetary integration.

In this paper, we first go into Triffin's formative years and the economic situation in Europe after the war. Thereafter, the paper focuses on Triffin's analysis of the postwar situation, his contributions to the creation and functioning of the EPU and his defense of the EPU against criticism. We further pay attention to his relation with the IMF. The last section shows how the EPU shaped Triffin's later approach towards international and European monetary integration.

## **2. Triffin's formative years**

### **2.1 Undergraduate studies in Louvain and the Belgian franc devaluation of 1935**

Robert Triffin was born in Flobecq (Belgium). He studied at the University of Louvain, obtaining a degree in Economics in 1935. As a young economist, he was active at the *Institut des Sciences Économiques* (ISE) (Triffin, 1987: 33). The dominant figure was Léon-H. Dupriez, a leading scholar in business cycle analysis (Maes 2010). Triffin was one of Dupriez's pupils and he also collaborated with other two members of the ISE, Paul van Zeeland, who was specialised in monetary economics (Lettre de remerciements to P. van Zeeland, 09/08/1934, RTA), and Ferdinand Baudhuin, an economic historian (Lettre d'acceptation de Triffin comme assistant, 06/08/1934, RTA).

Belgium, as a small open economy, was badly hit by the Great Depression. In March 1935, Paul van Zeeland, was appointed Prime Minister. He immediately devalued the franc by 28 %. The young Robert Triffin made the calculations for the devaluation percentage.

In 1935, Triffin wrote a statistical article explaining the calculation and interpretation of differential group indices of prices, which had formed the basis for the devaluation percentage. Triffin argued that the differential movement of prices, especially the rigidity of domestic costs, was leading to serious losses in Belgian manufacturing, causing also the closure of firms: "The seemingly favourable sales prices constituted starvation prices for our industrialists, leaving half the country's enterprises trading at a loss in 1934" (Triffin 1935: 290).

Triffin further concluded that agricultural prices were much more sensitive to the business cycle (Maes 2013). This would become an important theme in his later work, which pointed out that deflationary policies at the centre of the economic system would have an even greater impact in the periphery of the world economy.

In 1937, when he was a Ph.D. student at Harvard University, Triffin published a new article on the Belgian franc devaluation. He started with a trenchant critique of Cassel's purchasing power parity theory, especially for not being suited to situations of disequilibrium (Triffin 1937). Triffin's fundamental criticism, in line with his earlier article, was that Cassel did not look at the structure of prices in a country. Like Dupriez, Triffin made a distinction between "sheltered" and "non-sheltered" sectors of the economy. In the non-sheltered sector of the economy, sales prices had to be aligned on world market prices. However, costs in the non-sheltered sectors were largely determined by domestic factors, leading to a profit squeeze, a decline in production and rising unemployment.

## 2.2 Schumpeter and the spell of pure theory

Robert Triffin went to Harvard in 1935 for his Ph.D. in Economics. There, he fell under the spell of Joseph Schumpeter and pure economic theory. At the centre of economic theory, for Schumpeter, was general equilibrium theory. Triffin wrote a dissertation on *General Equilibrium Theory and Monopolistic Competition* (Triffin 1941), under the direction of Schumpeter, along with Leontief and Chamberlin. In this work, he tried to reconcile imperfect competition theory, which had its origins mainly in Marshallian partial equilibrium theory, with general equilibrium theory. So, Triffin became an authority on imperfect

competition theory (Backhouse, 1985: 139). While he would not pursue these theories, they would shape his perception of international monetary phenomena.

### 2.3 The Federal Reserve and the Latin America missions

From August 1942 to July 1946<sup>1</sup>, Triffin worked for the Board of Governors of the Federal Reserve System in Washington, focusing on Latin America. Initially, he worked at the Research and Statistics Division, compiling statistics on money and banking for Latin American countries as well as analyses of their central bank operations and monetary and banking legislation. He was more and more absorbed by what one might characterise as a "progressive Keynesian" spirit. The Triffin missions to Latin America constituted a break with the earlier approaches to "international money doctoring". Triffin himself emphasized that his aim was to put monetary and banking policy at the service of the "overwhelming development objectives previously ignored in central bank legislation copied one from the other and trying merely to imitate a distant and largely inappropriate Bank of England or U.S. Federal Reserve model" (Triffin 1981).

For Triffin, the economic cycle in Latin American economies was not so much determined by domestic savings and investment, like in the older industrial countries, as by the inflow or outflow of foreign exchange. The limited control of central banks over the money supply aggravated the basic vulnerability of these economies to international disturbances, thus affecting economic growth.

Triffin was further critical of exchange rate adjustments as an economic policy instrument in these countries. He questioned the efficacy of a devaluation to bring about a balance of payments readjustment, as these were highly specialised countries, with few export products, facing inelastic demand. Triffin's analysis was clearly shaped by his background in imperfect competition theory, "The situation recalls the case of oligopolistic competition in which none of the sellers are usually able to profit for very long from price-undercutting policies" (Triffin 1944a: 112).

Although the precise details of Triffin's reform proposals might differ, two main aspects were remarkably constant over time and from country to country<sup>2</sup>. The first is an active role of the central bank in pursuing anti-cyclical monetary policy, with a priority on financing rather than adjustment of balance of payments disequilibria. Central banks were provided with broad and flexible techniques of monetary control on both the domestic

---

<sup>1</sup> Leonard R.F., *Lettre au sujet de la démission de Triffin*, 26/07/1946, RTA.

<sup>2</sup> See also the report drafted by Triffin for the reform of the monetary and banking legislation of Paraguay (Triffin, 1944b: 25-77).

credit system and monetary reserves. He also suggested that central banks should resort to non-discriminatory exchange controls instead of a devaluation or deflationary policies when a country experienced a temporary reserve shortage. The second aspect is finance for development, especially with the creation of official and semi-official credit institutions for the promotion of agricultural and industrial development. The central bank should also support their activity.

### **3. Triffin's first analysis of the international monetary system**

During his time at the Federal Reserve, Triffin became also more involved in matters of the international monetary system. Triffin was at the inaugural meeting of the Bretton Woods Agreements on 1 July 1944 (Federal Reserve Board Minutes, 12/04/1946, FRA). He also attended a special meeting of the Board of Governors on 2 March 1945 in which Harry D. White, then Assistant Secretary of the Treasury, and Edward W. Bernstein, then Assistant Director of Monetary Research at the Treasury, discussed the Bretton Woods Agreements and their implications on national and international monetary policies (Federal Reserve Board Minutes, 02/03/1945, FRA). Triffin further wrote a first important essay on the international monetary system, entitled "National Central Banking and the International Economy" (Triffin, 1947), which included an extensive discussion of the role of the International Monetary Fund in the new international monetary system. It was published in the collection of the Post-war Economic Studies of the Federal Reserve<sup>3</sup> and was presented in various conferences<sup>4</sup>.

Former Bank of Italy Governor Paolo Baffi paid significant attention to this article (Maes, 2013). Baffi pointed out that Triffin was "the first economist to underline the fundamental inconsistency between the stability of the international monetary system and national sovereignty in economic policy-making" (Baffi, 1988, 16). Furthermore, as already clearly evident in the title, is the focus on two geographical entities: national economies and the world. Only at the end of the article is multilateralism of trade mentioned.

In the introduction to his article, Triffin underlined how the world had changed with the Great Depression and World War II. In his view, "managed currencies" were unavoidable. "The events of the thirties, the increasing influence of Keynesian economics, and finally

---

<sup>3</sup> Initially Triffin's paper was entitled "The United States in World Trade and Finance" and was scheduled to be published with papers by Walter A. Gardner (substituted by G. Haberler) and Lloyd A. Meltzer (Federal Reserve Bulletin, November 1945: 1107).

<sup>4</sup> More specifically at the first conference of Inter-American Central Banking Technicians, held in Mexico City during the second half of August 1946 under the auspices of the Bank of Mexico; at the 59th Annual Meeting of the American Economic Association, held in Atlantic City, New Jersey, January 23rd-26th 1947. He also published the paper in *El Trimestre economico* and in the *Review of Economic Studies* in 1946 before it was published by the FED.

the financial impact of World War II have destroyed the institutional and ideological framework of the automatic gold standard... Any attempt to enforce rigid solutions patterned after orthodox gold standard doctrines would be even more futile in the postwar period than it has proved to be in the interwar period." (Triffin, 1947, 47-48).

As in his earlier 1937 article, Triffin was very critical of the classical theory, which ascribed balance of payments disequilibria to international cost and price disparities. He raised two main elements of critique: "First, they fail to distinguish between a fundamental disequilibrium in one country's international position and world-wide disturbances in balances of payments associated with cyclical fluctuations. Secondly, the explanation of the readjustment of a country's balance of payments is vitiated by the underlying and totally unrealistic assumption of near-perfect competition between nations of roughly equal strength and importance in world trade." (Triffin, 1947, 55). They show how Triffin's perception was marked by his studies on business cycles and imperfect competition theory.

Triffin further raised the question whether the international monetary system in the interwar period was a gold standard or a sterling exchange standard. In his view, as Great Britain was the major centre of world trade and finance, changes in the British discount rate had significant effects on capital movements. Consequently, the British discount policy immediately affected not only the domestic economy and prices but also other countries, thus transmitting British cyclical fluctuations abroad. Eichengreen (1992) called this the "Triffin effect".

Triffin felt this had important policy implications, putting international liquidity at the core of the international monetary system. "Whenever balance of payments disequilibria are due, not to international price disparities, but to accidental factors or to cyclical fluctuations in foreign income and demand, compensatory policies should be followed to the fullest possible extent. This requires a high level of international reserves, especially in raw material and food producing countries, and the willingness to spend these reserves liberally in times of crisis and to accumulate them during prosperous years." (Triffin, 1947, 80).

As mentioned, Triffin, like in traditional international monetary analyses, distinguished two geographical entities: national economies and the world. Moreover, he held a largely positive view on the role of the newly created IMF in the world economy, provided that the

IMF accepted the importance of national objectives of stability and economic growth<sup>5</sup> and followed his analysis of distinguishing between cyclical and permanent balance of payments imbalances: "The success of the International Monetary Fund will largely depend on the progressive development and general acceptance of new canons of international monetary behaviour, to replace the previous "rules of the game" code. ... They should recognize the primacy of domestic goals of stability and high levels of economic performance, and distinguish strongly between cyclical and fundamental disequilibria in the balances of payments." (Triffin, 1947, 63)<sup>6</sup>.

Triffin was quite optimistic about the new international monetary system with the IMF at its core, "A more constructive approach toward the problem is now in the process of effective realization. The recently created International Monetary Fund is specifically designed to promote international monetary stability through the concerted action of all member countries". Triffin argued that the IMF disposed of two important advantages: the financial resources at its disposal and its influence on member countries' economic policies. "First, the Fund has the financial machinery to help the members to maintain free and stable exchanges by supplementing their gold and foreign exchange resources in case of need. ... There is now an alternative to unilateral resort to currency depreciation or exchange restrictions during a period of severe even though temporary exchange shortages. Secondly, the Fund will wield a degree of influence over policy decisions of member countries. In some cases the Fund has only the power to make recommendations, or the right to be consulted. In others, such as parity changes or the establishment of exchange control, action by a member is subject to the Fund's authorization or approval". (Triffin, 1947, 46-47). Furthermore, Triffin believed that the IMF might develop a leadership and moral influence "far beyond the scope of mere official, formal recommendations" (Triffin, 1947: 53).

In Triffin's view, the Bretton Woods Agreements provided an opportunity to avoid autarkic excesses in the monetary field. As the IMF could provide for the financing of temporary deficits, countries did not need to impose exchange controls: "Member countries agree to cede to the Fund a considerable measure of control over modifications in their exchange rates or the imposition of exchange restrictions. To make possible this partial renunciation of national monetary sovereignty, the International Monetary Fund undertakes to make available to member countries, in times of need, additional exchange reserves necessary to finance temporary deficits in their balance of payments" (Triffin, 1947, 54).

---

<sup>5</sup> The problem of the compatibility of national economic policy objectives with external equilibrium was central in the economic debate since the elaboration of the new monetary arrangements. See Cesarano, 2009: 145-152; 170-171.

<sup>6</sup> Haberler (1947: 88-90) was critical of Triffin's distinction. He argued that Triffin misinterpreted the classical theory and ignored the reciprocal influences between cyclical and fundamental disequilibrium.

Triffin observed further that the IMF was especially well equipped to deal with cases of (temporary) balance of payments deficits. "It is precisely this situation which the International Fund is so well organized to meet. The drain of reserves is arrested, or moderated, by an indirect extension of credit by the surplus countries to the deficit countries, through their accounts with the Fund. In this manner the deficit countries are enabled to avoid recourse to internal deflation, currency devaluation, exchange control, or other restrictive policies." (Triffin, 1947, 65).

Moreover, Triffin, marked by the Great Depression, had a clear ranking of policy instruments, preferring exchange controls to devaluation. "When reserves are insufficient, foreign or international assistance - such as is contemplated under the International Monetary Fund - will be necessary. Failing this, exchange control should be used as a third line of defence, in order to continue compensatory policies and avoid the greater evils inseparable from deflation or currency devaluation." (Triffin 1947: 80).

#### **4. The European economy and payments systems after WW II**

At the end of WW II, European currencies were not convertible and intra-European payments were characterized by a series of bilateral payments agreements and trade and foreign exchange controls. The bilateral arrangements typically consisted of licences and quotas for imports and exports, and foreign exchange was allocated by central banks with commercial banks as agents (Tew, 1988).

The rationale for the maintenance of controls and bilateralism was the shortage of international reserves, especially dollars. After WW II, European countries were confronted with war-related damage and dislocation of their productive capacities, while the United States was the only source of capital equipment for reconstruction. Western European countries could not increase their exports of manufactures and other goods, since inputs from the United States were needed to restart production. As a result, European countries had massive balance of payments deficits. Against this background, bilateral agreements and exchange and trade controls were used by European countries to restrict their imports from the rest of Europe in order to maximize the availability of dollars and gold that might be used to purchase imports from the dollar area.

The dollar shortage was also aggravated by overvalued official parities, set in December 1946 (Bordo, Eichengreen, 1993: 39). At that time, the IMF did not consider a devaluation as an adequate policy instrument for European countries' payments disequilibria. So argued the Managing Director, the Belgian Camille Gutt (1948), that exchange rate

adjustments were not effective under the conditions prevailing in 1946 in Europe, since balance of payments deficits reflected an incapacity to export. Gutt further emphasised that a currency devaluation might provoke inflationary pressures. In his view, inflation, both the inflation resulting from domestic monetary and fiscal policies and the latent inflation caused by the maintenance of wartime exchange restrictions and rationing, was a major cause of the continued and recurrent European balance of payments deficits.

There were significant debates among economists at the time. Several took a free market approach (for instance, Friedman). They believed that economic reconstruction and the liberation of trade in Europe could be established only by free market forces and the adoption of market-determined rates of exchange. However, others, like Robert Triffin and Guido Carli, emphasized that several structural factors impeded the successful operation of market forces in Europe's postwar economies: "The low level of gold and dollar reserves and of industrial productive capacity sharply emphasised the fact that the prerequisites of a system of free convertibility and those of free international exchange did not exist in postwar Europe. In addition, given the political instability in many countries, the social consequences of such policies were considered to be a major deterrent to their implementation" (Carli, 1982, 162). Later analysis would support this view (Milward, 1987, Eichengreen, 1993).

A crucial development in 1947 was that the United States moved from a stance of doggedly defending its creditor prerogatives (under Morgenthau and White) to one of reviving global growth. The change in US policy, with the Marshall Plan at its core, was essentially based on a new perception of US geopolitical interests, with the Cold War taking centre stage. Moreover, a strong European economy would constitute an important market for US exports. The Marshall Plan was proposed in June 1947 and enacted in April 1948 under the Economic Cooperation Act.

With the Marshall Plan, the US government opted for an economic reconstruction in Europe based on trade on a multilateral basis. It was also crucial for solving the stalled situation of the intra-European payments system, as it provided grants and loans in dollars to finance Western European deficits for four years. The management of the Marshall Plan was conferred to a new agency, the Economic Cooperation Agency (ECA). The Plan required recipient countries to cooperate in the allocation of aid and in a process of liberalization of trade and payments. Accordingly, the Committee for European Economic Cooperation (CEEC) was created in July 1947, renamed Organisation of European Economic Cooperation (OEEC) in April 1948.

The Western European economy only recovered very slowly, despite the Marshall Plan as well as the intra-European payments agreements signed after 1948. Following heated discussions throughout the spring and summer, the United Kingdom devalued its currency by 30.5 % on 18 September 1949. The major European currencies followed in quick succession.

In the meantime, on the basis of experience with the intra-European payments agreements, proposals for more ambitious schemes were being discussed within both the OEEC and the ECA. In the OEEC, the main drive came from the Benelux countries' delegation under the influence of the Belgian Hubert Ansiaux, who chaired the OEEC Committee of Financial Experts. Ansiaux proposed the multilateralization of credits, with the credit margins being backed by dollar aid (Péters, 2001). In the ECA, the Planning Group developed the earliest recorded proposals for the creation of a clearing mechanism between European countries<sup>7</sup>. It considered a European clearing mechanism as an instrument both to solve the transferability problem and a first institutional step to promote closer European economic and monetary integration (Hogan, 1987: 271-273). While ECA's ideas were supported by the State Department, they were not shared by the US Treasury which was concerned that regional integration could be a challenge to the authority and responsibility of the IMF (Kaplan, Schleiminger, 1989: 40).

## **5. Triffin and the EPU**

Triffin went to the IMF in July 1946 as acting head of the Exchange Control Division (Wilson, 2015: 377). On 1 January 1947, he was appointed Head of Division. In November 1947, Triffin became Head of the Department of Trade and Exchange Practices and Financial Agreements. In these functions, he dealt with the issue of exchange controls, par values and the European countries' post-WW II monetary problems, joining IMF missions to supervise the monetary and economic developments of some of these countries too<sup>8</sup>. In October 1948, Triffin was appointed to lead the IMF Representative Office in Europe as Head Technical Representative of the IMF in Europe. In this position, he took part in the negotiations for trade and payments agreements to restore multilateralism in Europe.

In December 1949 he joined the ECA in Paris as Special Advisor on Policy to the Director Trade and Payments, Henry Tasca. In this role, he contributed to both the preparation of the ECA plan that was proposed in December 1949 and the work of the Inner Group of the

---

<sup>7</sup> The proposal for a European Clearing Union was framed by Theodore Geiger in September 1946 when he was an official at the US Embassy in London and was further elaborated when Geiger met Harold van Buren Cleveland in London (Kaplan, Schleiminger, 1989: 362).

<sup>8</sup> Triffin joined the IMF missions in France (1945, 1946, 1948, 1949), Belgium (1946, 1948), the Netherlands (1948) and Italy (1947-1948).

OEEC. Triffin has been described "a consummate financial technician, eagerly advancing ingenious and usually successful methods for solving the mechanical problems posed by an automatic clearing system" (Kaplan, Schleiminger, 1989: 39). He was also active in designing technical solutions to the EPU Agreement that were conducive to the participation of Belgium (Péters, 2000) and the United Kingdom (Kaplan, Schleiminger, 1989).

### 5.1 Triffin's proposal for a European clearing union

In the fall of 1947, Triffin wrote a study with Raymond Bertrand analysing the European payments and trade situation. In this study, published as an internal IMF memorandum in December 1947, he outlined a proposal for a multilateral clearing arrangement.

Triffin was very critical of the bilateral payments agreements, especially because of their effects on intra-European trade. He argued that while bilateral payments agreements allowed European countries to manage their external balances and conserve hard currency, the limited size of the loans granted under the agreements and their bilateral nature forced the bilateral balancing of intra-European trade (Triffin, 1947: 2). Such bilateral balancing involved discrimination among import sources and export markets, causing distortions in European trade. Countries purchased goods from countries with which they had a bilateral surplus or that were willing to grant further loans, rather than making purchases from producers offering the lowest price. Bilateral balancing might thus imply that countries diverted imports from lower to higher cost sources and from goods that would be essential to goods that would not be essential for reconstruction aims (Triffin, 1947: 2-3). Therefore, bilateralism slowed down the European recovery.

Triffin advanced three proposals (Triffin, 1947: 3). First, further loans beyond those provided under the existing agreements were necessary to prevent trade from degenerating into barter deals. Second, credit should be provided on a multilateral basis to prevent countries from resorting to discriminatory practices for bilateral balancing. Third, the credit lines extended to deficit countries should be limited in size, in order not to relieve them from reducing unnecessary imports, and provided on a multilateral basis in order to prevent them from being used for less essential imports from the lending countries.

On this basis, he proposed that European countries substituted the network of bilateral agreements with a multilateral agreement to create a European Clearing Union in which: "the total credit commitments made by each country to other Clearing members would be paid into the Clearing in its own currency, and the country would receive an equivalent

balance in the Clearing which it could then use to settle the current account deficits with *any Clearing member*" (Triffin, 1947: 4; emphasis in the original). The payments would not be made on a bilateral basis but by debiting the paying country's balance in the Clearing and crediting the balance of the receiving country.

Triffin further favoured the introduction of an intra-European unit of account, called "European dollar" or "interfranc", to express the balances in the Clearing (Triffin, 1947: 4). It would become a recurring theme in Triffin's proposals in the ensuing decades.

Triffin argued also that, compared to the existing bilateral system, multilateral clearing had the advantage of promoting fuller use of credit commitments. Yet, the cumulative impact of net deficits and surpluses might lead to an exhaustion of the deficit countries' credit availabilities in the creditor countries' currencies. Multilateral utilization of the Clearing's balances might thus be suspended with respect to the payments in the scarce currencies (Triffin, 1947: 5). According to Triffin, external financial resources to limit and finance the net overall intra-European deficits were therefore necessary for the viability of the multilateral clearing arrangement.

Triffin suggested two sources of external financing. The first was the Marshall Plan. The second source was the IMF. Under Bretton Woods rules, the IMF could provide European currencies as well as dollars, if the Marshall Plan proved to be insufficient to cover European countries' dollar deficit (Triffin, 1947: 8).

In the debate on the transferability of the European currencies at that time, Triffin's proposal for a European Clearing Union was very similar to the boldest proposals advanced within both the OEEC Payments Committee and the ECA in the same period (Kaplan, Schleiminger, 1989: 34-40). Special attention was paid by Triffin to a system of incentives and deterrents. The common unit of account would work as an exchange rate guarantee for intra-European payments; the introduction of a ceiling for debtor countries' drawing rights would encourage them to adopt policies to adjust payments imbalances; finally, the involvement of the IMF in the financing of net deficits would provide further guarantees to both debtor and creditor countries. But, right from the start, Triffin's ideas met with resistance within the IMF, especially from Managing Board officials, and particularly from the American representative who came from the Treasury Department (Horsefield, 1969a: 220-221).

In line with his general philosophy, Triffin's memoranda paid close attention to the need to strike a balance between financing and adjustment of payments surpluses and deficits.

More specifically, he suggested that: "Whenever a country is ... entitled to gold settlement, it will extend to this latter country a new credit equivalent to half of the amount involved in the settlement, thus reducing the gold settlement by one half. If no provision for settlement exists or can be agreed to, half of the transfer will be settled in gold or dollars, and the other half through accumulation of the currency in which the drawing right is denominated" (Triffin, 1949b: 5).

This solution involved the so-called "matching credit formula", under which payments would be settled simultaneously partly through loans and partly in gold or dollars. Triffin later revised the formula, advocating a gradual increase in the cash element in the settlements, as deficit countries made cumulative use of credit facilities. So the ratio of gold payments to borrowing facilities for the settlement of the deficits would increase gradually when the borrowing ceiling is approached by debtors and vice versa for creditor countries.

In Triffin's view, this system of settlements would support progress from bilateralism to regional interconvertibility. On the one hand, it "would give some incentive to all countries to limit their Western Hemisphere deficit and to maximise their European exports", while on the other, it "would facilitate some accumulation of monetary reserves which would help to restore currency stability and smooth out balance of payments difficulties after the termination of [the Marshall Plan]" (Triffin, 1949a: 6). Moreover, it would recreate incentives for the correction of surpluses and deficits in intra-European trade: "The obligation imposed upon surplus countries to refinance one half of their intra-European surplus exceeding the estimates would limit ... the incentive to build up surpluses through a contraction in their imports from other participating countries. On the other hand, the system would impose some hardship on the countries which fail to reach their estimated goals. This, however, appears necessary as an incentive to maximum efforts and as a discipline to stimulate adequate monetary and exchange policies" (Triffin, 1949a: 6-7).

Triffin further emphasised the need for "specific provisions and authority to bring pressure for the readjustment of excessive deficit and surplus positions through changes in fiscal, credit, and monetary policies, in exchange rates, etc." (Triffin, 1949d: 447). The authority would be conferred to the Managing Board in the EPU Agreement, whose aims were to maintain continuous consultation and mutual reviews of each country's policies and overall position in the Payments Union. It would also provide loan facilities to extreme debtors but only if they adjusted their policies to permit a return to equilibrium within the system. In addition, Triffin suggested that creditor countries should take action to limit their surpluses through further liberalization of imports, while partner countries that

encountered heavy balance of payments pressures should be released temporarily from such commitments.

## 5.2 The European Payments Union

The debate on the European convertibility problem was revived by Hoffman's speech to the OEEC Ministers in October 1949. At the end of that year, the ECA and OEEC put forward their proposals for an intra-European payments scheme. Both plans suggested setting up a clearing mechanism, so that each country would be expected to seek a balance with all members of the Union as a whole, thus minimizing the need for dollars to settle imbalances; moreover, each country would have access to credit from the Union in order to accommodate temporary fluctuations in the country's position and permit some leeway for adjusting economic policies to regain equilibrium. Yet, the ECA plan was more sophisticated. It included provisions that would press member countries to adopt monetary and fiscal policies conducive to a balanced intra-European position. The ECA plan also provided for an authority with discretionary powers on member countries' national policies (see Kaplan, Schleiminger, 1989: 31-40).

The European Payments Union was established on 19 September 1950 by the OEEC countries. It was designed as a two-year transitional arrangement, renewable on a yearly basis. It was based on an automatic settlement mechanism. Accordingly, each country's net balances with each other country were reported at the end of every month to the Bank for International Settlements, which cancelled offsetting claims (OEEC, 1950). Remaining balances were consolidated, leaving each country with liabilities or claims against the Union as a whole, as the ECA plan had proposed. These net balances would in part be financed by credit quota and in part, as the liabilities grew, settled in dollars and gold. A single monetary unit, the EPU unit of account, was adopted so as to have a common denominator for all the accounts deriving from the settlements among the central banks. Triffin played a key role in these negotiations. Furthermore, financing of net settlements would be provided by a grant of \$350 million of Marshall Aid to the EPU. As observed by Carli, "the failure of the monetary compensation agreements on a European level was thus salvaged by the injection of dollar funds and by Triffin, who was the catalyst that converted the whole plan into what became the European Payments Union" (Carli, 1982, 163).

The management of the EPU was conferred to a Managing Board, composed of financial experts. When a member country threatened to exhaust its quota, the EPU Managing Board could advise and recommend corrective policies after reporting to the OEEC Council. The Board could also extend supplementary loans to countries that had

exhausted their EPU quotas, attach conditions to their provision, and monitor domestic policy adjustments, while officials from countries receiving exceptional credits were required to attend the monthly meeting of the EPU Board for questioning and submit monthly memoranda for the Board's review.

As already mentioned, the European Payments Union needed a monetary unit (in which all accounts could be denominated) for both the compensation mechanism and the multilateralization of net debts or claims to be able to function properly. This was a sensitive issue, as the choice of this unit would also determine the exchange rate guarantee attached to the Union's credit operations (Triffin 1957: 172). The EPU agreement created a special EPU unit of account, initially defined by a gold content equal to that of the 1950 US dollar. This gold content could be changed at any time by a decision of the OEEC Council. However, the unanimity rule for OEEC decisions made any such change highly improbable: the creditors would always have an interest in vetoing a devaluation and the debtors an interest in vetoing an appreciation of the EPU unit (Triffin 1957: 173). So, it was stipulated that no country could veto a change equivalent to (or smaller than) the appreciation or depreciation of its own currency. This effectively implied a definition of the EPU unit of account in terms of the member currency which remained most stable (in terms of gold). Triffin claims paternity for this formula and points to its significance for the future of European monetary integration: "My own objective in proposing and defending this formula ... was also to define a form of exchange guarantee that might be used later to encourage a resumption of capital movements in Europe, and a monetary unit that might be adopted in future agreements on European economic integration" (Triffin 1957: 173).

Initially, the EPU was confronted with diffidence on the part of the existing international institutions. Notwithstanding the IMF Managing Director's plea for active IMF involvement in European matters, the EPU was considered by various IMF Executive Board officials as being at odds with the philosophy of monetary reconstruction embodied in the Bretton Woods Agreement (de Vries, 1969). The BIS had also a "fairly ambiguous" attitude towards the EPU (Toniolo, 2005: 333). On the one hand, it provided the technical skills and banking functions because of its clearing agent role, while on the other hand, it believed that the EPU was against the restoration of free exchange markets.

So, with the European Payments Union, Triffin introduced a new geographical entity in his analysis: the region. Triffin became a partisan of monetary regionalism, not only as a solution to the internal imbalances of Europe but also because of dollar scarcity. Moreover, the regional solution of returning to currency convertibility was less risky than a

global approach. When the EPU was established, Triffin was appointed Special Advisor and Alternate US Representative on the Managing Board.

### 5.3 The functioning of the EPU

A few days before the entry into force of the EPU Agreement, the EPU had to face its first test with the German payments crisis. Even if production and exports had increased rapidly after the 1948 currency reform, the German economy in 1950 lagged behind most other EPU countries, as post-war reconstruction had started much later. Moreover, in 1950, US aid was being scaled down and, as a result, German imports shifted substantially from the dollar to the EPU area, enlarging Germany's EPU deficits. Finally, the outbreak of the Korean War worsened its balance of payments deficits. It all led to a rapid exhaustion of the German EPU quota (Kaplan, Schleiminger, 1988: 99-101).

The EPU Managing Board arranged for a temporary line of credit with a program of financial and economic readjustment policies (including commitments to maintain the existing exchange rate, to abstain from any deficit financing and to raise taxes) to be adopted by Germany under its supervision. Moreover, the other EPU countries should endeavour to liberalize goods of interest to Germany, to grant generous quotas to German goods not on their free list, and to refrain from seeking unreasonably large quotas for their own exports to Germany. At first, the result of this program was disappointing. A temporary suspension of trade liberalization by the OEEC was therefore decided, that was put under the supervision of a group of independent experts in order to preclude a scramble for German licenses and to ensure an allocation of licenses that would minimize the harmful impact of German restrictions on the weaker members of the OEEC. Triffin pointed out the "revolutionary character of this decision" as "it involved a renunciation by each country of its bilateral bargaining strength and sovereignty for protecting its national interests in the middle of a dangerous crisis" (Triffin, 1957: 182).

These measures had an immediate impact on the German balance of payments. Consequently, by the end of March 1951, the special loan was repaid and exchange controls were removed. By the spring of 1953, Germany had become the largest creditor in the EPU (see Kaplan, Schleiminger, 1988: 107-113).

The Managing Board's handling of the German payments crisis was in line with Triffin's vision for the sustainable functioning of an international monetary system. It mixed the provision of international liquidity as a temporary relief - to avoid the need for restrictions on exchange transactions that would have deeply affected the economy of other EPU countries - with economic policy coordination among EPU countries.

The management of the German payments crisis was widely recognised as a success, with a Managing Board that was endowed, as Triffin later said, "with a prestige and authority far beyond the most optimistic expectations of the promoters of the EPU Agreement" (Triffin, 1957: 182). The way in which the German payments problems had been surmounted became a model for the crises the EPU had to confront (Kaplan, Schleiminger, 1989). It also demonstrated, for Triffin, that the "region" could constitute an appropriate level for effective crisis management.

Two particular aspects of crisis management were emphasised. The first was the use of macroeconomic policies, something that was highlighted in the *Federal Reserve Bulletin* in December 1951 (Kaplan and Schleiminger, 1989: 116) and also by Triffin (1957: 182). The second aspect was the advantage of a cooperative approach developed under an effective (regional) institution (Kaplan and Schleiminger, 1989: 116). As Triffin later observed, it left, "a deep impression on other countries" (Triffin, 1957: 182), facilitating acceptance of their responsibility in resolving balance of payments problems. It also helped to reconcile a tightening up of the EPU settlement rules with further progress towards trade liberalization (Triffin, 1957: 208). Later analyses of the EPU would support this idea (Eichengreen, 1993; Oatley, 2001).

## **6. Triffin's criticisms of the IMF policy strategy**

As seen, in his 1947 essay, Triffin was initially quite optimistic about the role the IMF could play in the world economy. Gradually however, Triffin would become more critical of the IMF, as Triffin moved towards a regional approach, while the IMF remained with a world-wide approach.

According to Triffin, the IMF's choice to remain aside from the European payments problems resulted in "a generalised distrust in IMF policy and machinery" of international monetary cooperation and consultations (Triffin, 1949d: 183). Triffin pressed for IMF involvement in the EPU at both the IMF and the OEEC. In a letter to Gutt, the IMF Managing Director, he wrote: "The only immediate action that would make sense would be for you to come to Paris with a broad delegation of authority, not necessarily to commit the Fund, but to enter into close contact with the OEEC Secretariat and national delegations at the highest political level, and pave the ground for an intelligent discussion of the problem at the board at a later stage". Moreover, he added, "I have not the slightest doubt either the need for a close working relationship between the Fund and the European

clearing. I have pressed this point myself at every occasion" (Letter from Triffin to Gutt, January 17th, 1950; emphasis in the original, RTA).

Triffin acknowledged that the Bretton Woods statutes were limited with regard to the problems of exchange liberalization. Article XIV gave countries the right to maintain restrictions on payments and transfers for current transactions for a transitory period lasting five years. Yet, he believed that the Fund's policy, which had to promote both exchange freedom and exchange stability, had been devoted mainly to the second objective in the post-WW II years.

According to Triffin, the Fund's arguments for exchange rate stability had been right in the immediate post-WW II years. Exchange rates could not constitute a meaningful mechanism of adjustment for European balance of payments disequilibria as Europe lacked export capacity. Against this background, trade and exchange controls could be expected to reduce the outflow of foreign exchange and reallocate it to those imports which the economy most urgently needed. By contrast, exchange rate readjustments could fuel domestic inflation, given the excessive rates of monetary expansion during the war and the early post-war years (Triffin, 1948c).

However, in the course of 1949, Triffin became a partisan of exchange rate adjustments, thus going against the official IMF position. In the summer, when exchange realignments of European currencies were discussed, Triffin wrote various memoranda in favour of exchange rate revisions. He became convinced that the exchange rates not only did not correspond to the fundamentals, but that they were also impeding trade liberalization. He argued that, "the liberalization of controls is inextricably tied, for most countries, with a revision of exchange rates. Pursuing either policy also means implementing the other. The accent should be put on the first, (...) for the revision of rates would merely *facilitate* the relaxation of controls, while the relaxation of controls would *compel* exchange revisions" (Triffin, 1949: 185).

In Triffin's view, the IMF had not only to authorize the exchange rate revisions, as envisaged in the Bretton Woods statutes, but also to "facilitate the process rather than hamper it by cumbersome, and often unrealistic, requirements" in order to "best promote the attainment of par values which are both stable and effective" (Triffin, 1949d: 185). He suggested that a new par value had to be determined after "a transitional period of experimentation" (Triffin, 1949d: 185). Throughout this period any member country would be engaged in a consultation process with the Fund and the exchange rate might be subjected to fluctuations. Specific rules had to be followed in order to avoid abuses of

exchange flexibility and to preserve, in cooperation with the Fund, the orderly character of adjustments<sup>9</sup>.

Triffin further argued that his proposal would not require any formal revision of the Bretton Woods statutes. Moreover, it would provide for "some regionalization of the Fund machinery" at both policy and staff level (Triffin, 1949d: 188). At policy level, the regionalisation would be accomplished "if European Governors of the Fund agreed to meet in Europe at frequent intervals to discuss their common monetary problems in relation to the Fund, with a high officer of the Fund who would ensure the proper liaison with the Fund's management and Executive Board in Washington". At staff level, Triffin recognized that a right step in the direction of a regionalisation of IMF machinery had been taken with the appointment of technical representatives abroad. Yet, he recommended that the offices abroad should be expanded and that the IMF should provide an adequate supervision on their activities.

It might be interesting to make a comparison here between the views of Triffin and Friedman. Indeed, Friedman, in the fall of 1950, was a consultant to the Finance and Trade Division of the Office of Special Representative for Europe of the US Economic Cooperation Administration. His famous paper, *The Case for Flexible Exchange Rates*, had its origin in a memorandum for the ECA, which he also discussed with Triffin (Friedman 1950: 187 fn)<sup>10</sup>.

Friedman advanced two arguments in favour of flexible exchange rates: the freedom of each country to pursue internal stability and the attainment of unrestricted multilateral trade. With this second argument, he was close to Triffin's analysis of the European economy in 1949. According to Friedman there was no way of predicting in advance the precise economic effects of reductions of trade barriers. "All that is clear is that the impact of such reductions will vary from country to country and industry to industry and that many of the impacts will be highly indirect and not at all in the particular areas liberalized. The very process of liberalization will therefore add substantial and unpredictable pressures on balance of payments over and above those that would occur in any event. These pressures would make any system of rigid exchange rates appropriate to the initial position almost certainly inappropriate to the final position and to intermediate positions. And there seems no way to decide on the appropriate final exchange rates in advance; they must be reached by trial and error. Thus, even if the ultimate goal were a new system

---

<sup>9</sup> As Jacques de Larosière observed, there is here a remarkable similarity between the 1949 proposals of Triffin and those of the IMF in 1971: letting exchange rates fluctuate during a transitory period, under IMF surveillance, to find new par rates.

<sup>10</sup> It is interesting to note that Friedman (1941) had written a review of Triffin's book on monopolistic competition wherein he defends Marshall's notion of industry, which was criticized by Triffin.

of rigid exchange rates, it seems almost essential to have flexibility in the interim period.” (Friedman, 1950: 197-198).

A crucial difference between Friedman and Triffin was that Friedman was completely sceptical of Triffin's distinction between temporary and fundamental payments imbalances and the use of compensatory policies in case of temporary disequilibria: “The use of the monetary reserves as the sole reliance to meet small and temporary strains on balances of payments and of other devices to meet larger and more extended or more basic strains is an understandable objective of economic policy and comes close to summarizing the philosophy underlying the International Monetary Fund. Unfortunately, it is not a realistic, feasible, or desirable policy.”. In Friedman's view, it was not easy to know whether strains in the balance of payments were temporary or permanent. Moreover, there was a tendency to rely too much on reserves: “Corrective steps are postponed in the hope that things will right themselves until the state of the reserves forces drastic and frequently ill-advised action.” (Friedman, 1950: 172).

## **7. Triffin's defence of the EPU**

### ***7.1 A discriminatory trade and payments area?***

When the EPU was established, it came under fire from several economists. Many believed that the EPU created a discriminatory trade and payments area that would be at odds with the philosophy of the post-WW II international system. For instance, during a conference in the early 1950s at Princeton University, several participants expressed “strong doubts” as to whether the EPU would not perpetuate structural imbalances rather than remedy them. Ragnar Nurkse, then at Columbia University, argued that: “I am rather suspicious of all proposals about stabilization loans or clearing pools. To my mind, they are methods of concealed relief or aid based on the wrong criteria. Countries will get help that are not the most deserving recipients.” (as quoted in Knorr, 1952, 28).

Triffin made the rebuttal. He pointed to the success with which EPU members had liberalized trade among themselves. He insisted that the EPU had actually made for less discrimination although, as Viner pointed out, it was theoretically possible for over-all discrimination to be raised by the skilful removal of discriminatory practices within a regional bloc. Moreover, while Triffin acknowledged that the EPU was discriminatory towards dollar imports, he also claimed that the gradual liberalization of intra-European payments would boost European competitiveness: “It certainly forced the higher-cost countries within the EPU region to compete with the lower-cost members, and this is an

indispensable preparation for full-convertibility". All this would contribute to the readjustment of the European cost and price pattern vis-à-vis the US, alleviating so "dollar scarcity", the fundamental imbalance in the world economy.

Later, Triffin (1957) objected to the criticisms on the basis of the "trade creating" and "trade diverting" categories, introduced by Viner (1950) in order to analyse the effects of a custom union on trade flows. Triffin pointed out that the presumption of trade-diverting and trade-creating impact must be assessed by considering the concrete circumstances surrounding the regional agreements. Even if he admitted that the EPU "entailed a certain degree of discrimination against non-EPU members", Triffin argued that cooperation in the EPU Agreement was extended to an area where countries' economies are highly interdependent and whose total trade accounted for nearly 60 % of world trade. This allowed efficiency-enhancing arbitrage to operate powerfully, minimizing price distortions. He also affirmed that price distortions were further minimized by the fact that the economies of Europe, notwithstanding their troubles, possessed a number of important industries which allowed intra-EPU trade to drive prices down to the levels established by the lowest-cost producers. As Triffin argued: "Intra-European trade liberalization often weakened, through transit trade and triangular transactions, the effectiveness of dollar discrimination itself". Indeed, the US was not always the lowest cost producer of particular goods, "for many categories of goods, the lowest European prices which [domestic producers] had to meet – Swiss prices for some goods, Belgian or German prices for others, etc. – were probably as competitive as those of any third countries, including the United States" (Triffin, 1957: 207). In the later literature on customs unions these elements, like a large economic area and more competitive economies, were singled out as factors favouring trade creation (Robson 1987, 22). Moreover, Triffin argued that one should also look at the "dynamic" effects of the EPU: "The trade-creating and trade-diverting effects of regional integration cannot be fully appraised by looking only at the immediate and direct trade concessions incorporated in a regional agreement. Indirect policy and incentives are far more significant for arriving at a broad judgment of the over-all impact of the agreement on future trade patterns" (Triffin, 1957: 262). In the EPU Agreement, "indirect policy and incentives" were related the provision of stabilization credits by the creditor countries to the debtor members of the system; the willingness of the creditor countries to speed up their own liberalization measures beyond the formal commitments agreed to by all members, and to release temporarily from such commitments partner countries which encountered heavy balance of payments pressures; the willingness to submit to international discussion and scrutiny the whole range of their economic policies; and the existence of a highly effective machinery for continuous consultation and negotiation among members.

The role of EPU in the post-WW II European reconstruction has been emphasized in the recent literature. Milward argued that the EPU, and the European Coal and Steel Community, were the “pillars of the reconstruction” of Western Europe (Milward, 1987: 470). The EPU was designed “not just to permit but also to encourage national policies of expansion” (Milward, 1987: 487). Also Eichengreen comes to the conclusion that, “the EPU was critical by virtue of its positive spillovers for domestic and international political economy. These spill-overs in turn contributed importantly to the post-war growth process.” (Eichengreen 1993: 95). According to Eichengreen, the discriminatory features of the EPU, which were emphasised at the time, did appear to have affected the direction of international trade. But, “ancillary policies and fortuitous circumstances minimized the negative side-effects. The competitiveness of European producers, in conjunction with the high level of intra-European trade, minimized the damage from trade diversion and relative price distortions. US foreign investment guarantees and the relatively low volume of foreign portfolio investment that would have prevailed in the 1950s in any case for independent reasons meant that opting for convertibility would not have unleashed a surge of inward foreign investment. In this sense the EPU offered the best of both worlds.” (Eichengreen 1993: 117).

## 7.2 A monetary gimmick?

A second criticism was that the EPU was a monetary "gimmick" and might, by rendering prevailing maladjustments easier to bear, prevent tackling the real problems. As Viner argued: “All these devices, though there are better and poorer ones, do not of themselves solve any problems. They may cover up the problem and create new problems. They will solve problems only if their manipulators are constantly bent on making these gimmicks unnecessary in the future. There is always the danger that these devices are sold to the world as true solutions and will thus free responsible leaders from the obligation to search for genuine, even though perhaps only partial, remedies. The bulk of the literature on these devices feeds this danger. It is a gimmick literature. It present gimmicks as genuine solutions and thus creates a diversion from really creative effort.” (as quoted in Knorr, 1952: 29). Also Theodore Geiger, Head of Research of the US National Planning Association, criticized Triffin on this point: “I share Professor Viner’s fear that the monetary arrangement proposed by Bob Triffin, though no doubt likely to work better than existing arrangements, would work so well as to obscure many of the basic problems that must be attacked. It would obscure them not permanently, but it would obscure them long enough to permit fundamental disequilibrium to grow.” (as quoted in Knorr, 1952: 30)<sup>11</sup>.

---

<sup>11</sup> This is also a classical dilemma for a central bank: monetary accommodation gives countries time to tackle the basic problems, but also diminishes the urgency to do so.

Triffin did not deny these dangers. He was in agreement that the fundamental problem was not a monetary one. However, he was concerned with what could be done before the fundamental problems could be tackled effectively. Rather than wait for the result of the long sweep, he was interested in ways of "solving some of our very concrete monetary problems of the moment". In Triffin's view, the EPU was a concrete alternative to the failure of the IMF in dealing with the transferability problem of the European currencies. In Triffin's words: "Basic problems are rarely solved overnight, I reject, however, the defeatist conclusion that as long as those basic problems are not solved, there is no use in doing anything at all to adjust ourselves to existing disequilibria in the best possible manner. If you cannot have full convertibility now, full bilateralism is not necessarily the only alternative left, as EPU has shown. Call it gimmick, if you want. Say that it detracts attention from the basic problem, and that problem is not simply a monetary one. All that is true, but the fact that a better monetary arrangement is no panacea still does not mean that you can live without any monetary arrangement – or gimmick – whatsoever, or that an absurd monetary arrangement, which needlessly reinforces bilateralism and discrimination, is then preferable to a monetary arrangement which preserves the maximum of transferability and multilateralism compatible with the underlying trade and economic pattern" (as quoted in Knorr, 1952: 30-31).

Moreover, Triffin stressed the importance of a pragmatic, step-by-step, approach, but based on a bold vision, "I have always insisted on this: the problem is to know in what general direction we want to move, and then to find out what the next steps are which are feasible now. We should not attempt to predict to the last detail ... because the exact nature of these final arrangements will depend a great deal on the successes and failures we have met in approaching them. We must keep our plans sufficiently broad and flexible to adjust them continuously in the light of experience" (as quoted in Knorr, 1952c: 44-45).

The EPU experience showed that multilateralism in trade and payments required cooperation among countries based on mutual commitments and binding rules. In Triffin's view this was not feasible on a world-wide basis, "It is possible only among countries which are highly interdependent ... keenly conscious of their interdependence and able to understand each other's problems and policies. These factors – different in degree, but not in kind, from those underlying a fuller political union – explain the success of, and justify the need for, regional cooperation in trade and payments" (Triffin, 1954: 212). These elements clearly point to the EPU as a separate geographical entity, as compared to countries or the world economy. However, the exact delimitation of the "region" remained rather vague (see also section 8.2).

Triffin further emphasised the relevance of an institutional framework. In particular he identified rules that make countries willing to cooperate and to observe the rules of the system and the balance of payments and policy constraints. Moreover, he advocated an EPU with a Managing Board and a unit of account. So, an institutional framework would contribute to distinguish the “region” as a separate geographical entity.

## **8. The European Payments Union as the paradigm for Triffin’s approach towards a new European and international monetary system**

In August 1951, Triffin accepted a full-time Professorship at Yale, while remaining closely involved in policy work, for instance as an advisor to the OEEC, to European Commission Vice-President Robert Marjolin as well as to Jean Monnet’s Action Committee for the United States of Europe.

The European Payments Union would shape Triffin’s approach towards reform of the European and international monetary system. While he also developed proposals for a global reform of the IMS, he emphasised regional monetary integration, with Europe as one of the pillars of a multipolar IMS.

### *8.1 Triffin’s vision of the post-EPU IMS*

In the early 1950s, Triffin advanced three proposals for reform of the international monetary system. The first was a decentralization of the IMF machinery. The second concerned the IMF’s lending policy. Triffin proposed that IMF lending operations should shift “from individual salvage operations to triangular or multilateral operations designed to maintain a multilateral framework for monetary settlements” (Triffin 1952b: 473). As Triffin pointed out, this would involve the adoption of significant aspects of the Keynes Plan for a Clearing Union, with certain provisions for a symmetrical adjustment between debtors and creditors. The third proposal was the extension of the IMF’s jurisdiction to the handling of GATT problems since trade restrictions and exchange controls were largely interchangeable techniques for balance of payments adjustments (Triffin, 1952b: 475).

During the 1950s, the world-wide dollar shortage gradually disappeared. At the end of the decade, Triffin became worried about the United States’ international reserve position: “The United States gold losses of 1958 are beginning to create some concern about the continued deterioration in the country’s net reserve position... Such a movement obviously

could not continue indefinitely without ultimately undermining foreigners' confidence in the dollar as a safe medium for reserve accumulation" (Triffin, 1960, 63).

Triffin, like Keynes, looked for a more "international" solution for the world liquidity problem. "The most promising line of approach to a long-term solution of the problem lies in the true 'internationalization' of the foreign exchange component of the world's international reserves, protecting the world monetary system from the instability resulting from arbitrary shifts from one reserve currency into another or into gold". (Triffin, 1960, 71). Triffin himself also made an explicit link between his ideas and those of Keynes. In his opinion, the Keynes plan for a new international system was "to this day, far superior to any of the practical alternatives offered to it" (Triffin 1957: 107).

Indeed, there are significant similarities between Triffin and Keynes. Both started out from the idea of a multilateral clearing system. Moreover, there should be an international currency and an international authority, with the objective of arriving at an international monetary system where balance of payments adjustments would be more symmetrical between deficit and surplus countries.

Behind these shared ideas, there was a common vision or *Weltanschauung*, marked by the experience of the Great Depression, which questioned the self-equilibrating character of the free market economy. Both Keynes and Triffin rejected the gold standard and were in favour of a "managed currency". They both drew a parallel with the experience of national banking systems, which shored up credit in the economy, thus turning "stone into bread".

However, there were also certain differences. Keynes' proposal for a Clearing Union (Keynes 1943) was an official government document, and set out the British position in the negotiations for the new post-war international monetary system. It focused on the world-wide international monetary system and paid significant attention to the availability of credit for debtor countries (like the United Kingdom). Triffin, who was not so much presenting an official position, was more pragmatic, focusing on the transition period and, with the experience of the EPU, leaning in favour of a multipolar international monetary system. Triffin was also more sceptical of the use of the exchange rate as an economic adjustment instrument. Moreover, he emphasised the link between trade and international payments, which he considered as closely related. It would become part of a continental European tradition of emphasizing the link between a common market and exchange rate stability. A further difference is that Triffin was sympathetic to the quantity theory of money,

of which Keynes was a great critic.<sup>12</sup> But this did not really lead to any differences in their analyses of international imbalances.

## 8.2 *Triffin's vision of a "post-EPU" Europe*

Triffin was also a convinced European federalist. He got to know Jean Monnet in 1948 and became very active in Monnet's Action Committee for the United States of Europe. At a conference on the problems of European integration held in Genoa in 1953, Triffin focused on the monetary dimension. He started with an examination of the conditions for European monetary integration, arguing that monetary integration did not require adoption of a single common currency. Yet, it did require national European currencies to be freely convertible at fixed and invariable exchange rates: "A single currency is the symbol, much more than the substance, of monetary integration. However spectacular it may be, economically speaking, it has only very secondary differences from coexistence of freely convertible national currencies at fixed and invariable rates" (Triffin, 1953: 207). It would remain a constant in Triffin's vision. He would not focus on the institutional architecture of economic and monetary union (Maes and Bussière, 2016).

Triffin insisted that convertibility among currencies demanded, as a pre-condition, balance of payments equilibrium and then went further into the conditions for reaching equilibrium. He stressed that this depended on the adjustment of wages and living standards to the varying degrees of productivity existing in each country. Anticipating certain arguments of the optimum currency area theory<sup>13</sup>, Triffin argued that factors of production mobility, especially labour, might ease balance of payments adjustment by reducing productivity gaps between the countries in the group. He also emphasized that in an integrated monetary area different - rather than uniform - fiscal, economic and social policies could be preferable in order to deal with national divergences in economic and social structure (Triffin, 1953: 208). Triffin considered three examples for balance of payments adjustment which might guide European countries' policies in an integrated monetary area. The first involved the acceptance of automatic adaptation to price differentials and priority to the attainment of external balance against desirable domestic policy objectives. The second required the creation of common budgetary and fiscal policies, entailing a certain distribution of income between the regions. The third involved accommodating capital flows. However, Triffin thought that, in the 1950s, European monetary integration could not

---

<sup>12</sup> Triffin even made an important contribution to the monetary approach to the balance of payments of the IMF. The analytical basis of the approach was elaborated by Triffin during his period at the Federal Reserve Board and was refined when he moved to the International Monetary Fund in September 1946 (see Rhomberg and Heller, 1977, and Polak 2001).

<sup>13</sup> The optimum currency area theory, which dominated the theoretical debates on monetary integration in the 1960s, focused on the criteria that would delimit the optimal domain of a currency area (see Maes, 2002: 14-19).

be attained along these lines (Triffin, 1953: 208). European countries would not accept internal adjustments if these might threaten employment and economic activity. Also, the degree of countries' solidarity was not sufficient for the creation of a supranational institution to which they would transfer political powers.

Triffin argued that the most practical way ahead for monetary integration was the development of the EPU (Triffin, 1953: 210). Offering some guidelines for this, he first of all suggested setting up a joint reserve fund, constituted by deposits from the member countries. By providing financing in the event of balance of payments difficulties, it would avoid countries resorting to policies such as exchange rate adjustments or exchange restrictions. Moreover, it would strengthen the Managing Board's influence on members' policies. Secondly, he advised wider use of the EPU unit of account in all intra-European loans and investments. This would thus "restore capital markets in Europe and might provide governments with a far more attractive source of financing than the printing press" (Triffin 1951: 461). Triffin further emphasised that the EPU unit of account would also support the emergence of a single European currency. When countries managed to stabilize their currencies, they could declare new national currencies against and equal to the EPU unit of account. As a consequence, "while the new currencies would remain purely national in law, exchange fluctuations would be greatly discouraged by the mere similarity of their valuations" (Triffin 1951: 460). The replacement of the domestic currencies with a single currency would finally require the setting up of a European Monetary Authority, entrusted with sole issue rights for all participating countries.

Later, Triffin was also critical of the Treaty of Rome, as it left macroeconomic and monetary policy-making mainly in the hands of the individual EEC Member States. Triffin (1958: 1) described the limited monetary dimension of the EEC Treaty as "a Hamlet in which the role of the Prince of Denmark is almost totally ignored". Triffin himself took a voluntarist approach towards European monetary integration with proposals for a European Reserve Fund and a European currency.

Asked for advice by Monnet and Marjolin (then Vice-President of the European Commission), Triffin elaborated ideas for a European Reserve Fund in the second half of the 1950s. This request was related to the French financial crisis at that time, which threatened France's participation in the Common Market project, a matter of serious concern for Monnet and Marjolin (Maes and Buyst 2004). The Fund could be constituted by pooling 10 to 20 % of the international reserves of the EEC Member States' central banks. The Fund could provide for different types of loans, both to assist countries with

balance of payments difficulties and also to support economic growth (Ferrant and Sloover 2010).

The idea returned to the agenda in 1969, when Willy Brandt became German Chancellor. Brandt was a member of Jean Monnet's Action Committee for the United States of Europe, which he consulted in order to prepare for the Hague Summit. Monnet appealed to Robert Triffin, who drew up a new proposal for a European Reserve Fund (Monnet 1976: 610).

Triffin was also a strong advocate of the introduction of a European currency unit as a parallel currency (Maes and Bussière, 2016). As mentioned, already in the 1950s, Triffin had argued for the use of the EPU unit of account as a parallel currency, something he felt would pave the way for a monetary union. It is remarkable that Triffin was not only active in the public sector but also in the private sector. So was he an Administrator of Kredietbank Luxembourgeoise, which, in 1961, under his inspiration, was the first bank to issue a bond denominated in the European unit of account.

Throughout the 1960s, Triffin advanced similar plans for other geographical areas such as Latin America, Asia and Africa. He submitted his proposal to the United Nations Economic Commission for Latin America (ECLA) in mid 1950s, when first initiatives were launched to reorganize and simplify the system of bilateral arrangements then existing in the area<sup>14</sup>. Various proposals were put forward by Triffin at the United Nations Economic Commissions for Asia and Far East (ECAFE) and the United Nations Commission for Africa (ECA). With reference to the latter regional areas, characterized mostly by underdeveloped countries, Triffin affirmed that monetary integration could provide a way to organize efficiently international financial assistance for economic development purposes<sup>15</sup>.

---

<sup>14</sup> In response to ECLA suggestions, the various aspects of the problem and alternative lines of approach were discussed in successive meetings of Technicians of Central Banks of the American Continent, and of the Center of Latin American Monetary Studies (Centro de Estudios Monetarios Latinoamericanos, CEMLA). The first step on the matter was the establishment of a Central American Clearing House between El Salvador, Guatemala, Honduras, - Nicaragua, Costa Rica - in the summer 1961. Later, in September 1962 the problem for a clearing mechanism between the Latin American countries' central banks on broader basis was further explored in the meeting of the CEMLA in Mexico City where Triffin proposed a paper ("A Latin American Clearing House and Payments Union") which was widely criticized by the IMF technical staff in a report distributed at the CEMLA in June 1963 and then published in the IMF Staff Papers in November 1963 (Keesing, Brand, 1963). The adverse attitude of the IMF towards Triffin's proposal was then revised in later months when its representatives at the CEMLA expressed their full support for the unanimous resolution adopted at the 7<sup>th</sup> Meeting of the Central Bank Technicians of the American Continent at Rio de Janeiro in October 1963 in favour of a more active exploration of the problem at a negotiating level. The latter decision led to the agreement for the establishment of the Central American Monetary Union on February 5<sup>th</sup> 1964.

<sup>15</sup> A selection of memoranda prepared by Triffin has been republished in Triffin, 1966a: 478-543.

As already observed, Triffin made no significant distinction between a monetary union and a system of stable exchange rates: "The participating regions or countries must, in either case, subordinate their internal monetary and credit expansion to the maintenance of equilibrium in their balance of payments. From an economic viewpoint, monetary unification would even impose a somewhat less stringent monetary discipline on the participating countries, since the elimination of exchange risks would be even more complete than under a system of free and stable exchange rates, and would therefore stimulate the cushioning of temporary deficits through readjusting capital movements rather than aggravate them through speculative capital flight." (Triffin 1957: 289). However, Europe's monetary union showed that, with accommodating capital movements, disequilibria were not corrected, leading to significant imbalances and bubbles. They eventually burst and contributed to the crisis of the early 2010s. With hindsight, this was a weakness of Triffin's analyses. The euro area's sovereign debt crisis demonstrated that monetary union created very strong and complex interdependencies, requiring a strong economic policy framework and close coordination of policies, posing also the question of political union.

## **9. Conclusion**

Robert Triffin was not only an architect of the European Payments Union, but his experience with the EPU would be at the origin of his vision that, in order to reform the international monetary system, a regional approach was the most appropriate one.

As is well known, there is a significant continuity in Triffin's work. From his first article in 1935, he developed a vision that the international adjustment process was not functioning according to the classical mechanisms (Maes, 2013). Very fundamentally, Triffin was part of a generation of Keynesian economists which did not believe in the self-equilibrating character of the free market economy. For Triffin, with his focus on the international economy, the key policy conclusion, already clearly articulated in 1947, was to put international liquidity at the heart of the international monetary system and ensure close economic policy coordination as well, with an important role for the IMF.

However, as argued in this article, the EPU marked a significant shift in Triffin's thinking. With his work on the EPU, Triffin introduced a new geographical entity in the international economy, besides national economies and the world economy: the region (even if he remained rather vague in its definition). In his analysis of postwar Europe, Triffin emphasized that several structural factors, especially the low level of gold and dollar reserves and weak industrial capacity, impeded the successful operation of market forces. Moreover, he feared political instability and social unrest in the event of an abrupt

restoration of convertibility. So he argued for a pragmatic, regional, approach, with the European Payments Union, which gave priority to the abolition of bilateral trade and payments restrictions in favour of multilateral clearing in Europe. It became a big success. His vision emerges also in the relevance he gave to the institutional framework, with a key role for the EPU Board and the EPU unit of account.

With his emphasis on regional integration, Triffin went strongly against the IMF view, where he worked from September 1946 to November 1949, and which was in favour of a world-wide approach to the restoration of convertibility. One clearly sees how Triffin, at the end of the 1940s and the early 1950s, became more and more disappointed with and critical of the IMF as he strongly favoured a regional approach towards the restoration of convertibility.

The EPU would shape Triffin's later policy proposals. He became an ardent advocate of regional monetary integration, especially, but not only, in Europe. His ideas of a European Reserve Fund and the importance of a European currency unit, taken over from his experience of the EPU, were essential parts of his proposals for European monetary integration. Very fundamentally, in Triffin's pragmatic approach, regional monetary integration was a step towards a new multipolar international monetary system.

## References

- Archives: - *Robert Triffin Archives*, Université catholique de Louvain.  
- *Federal Reserve Archives*, Board of Governors, Washington D.C.
- Backhouse R. (1985), *A History of Modern Economic Analysis*, Basil Blackwell, Oxford.
- Baffi, P. (1988). *Robert Triffin*. Torino: San Paolo.
- Bordo M. D., Eichengreen B. (eds.) (1993), *A Retrospective on the Bretton Woods System: Lessons of International Monetary Reform*, University of Chicago Press, Chicago, 1993: 3-98.
- Carli G. (1982), "From the European Payments Union to the European Monetary System", in Cooper R., Kenen P., Braga de Macedo J., van Ypersele J., 1982, *The Monetary system under flexible exchange rates. Essays in honour of Robert Triffin*, Ballinger Pub. Company, Cambridge: 161–169.
- Cesarano F. (2009), *Monetary Theory and Bretton Woods*, Cambridge University Press, Cambridge.
- de Larosière (1991), Robert Triffin and the Reform of the International Monetary System, A. Steinherr & D. Weiserbs (eds.), *Evolution of the International and Regional Monetary Systems, Essays in Honour of Robert Triffin*, London, MacMillan, p. 135-143.
- de Vries M. G. (1969), "The Fund and the EPU", in Horsefield J.K., de Vries M. G.(1969), vol. 2: 317–331.
- Eichengreen B. (1993), *Reconstructing Europe's Trade and Payments: The European Payments Union*, Manchester University Press, Manchester.
- Ferrant C., Sloover J. (avec la collaboration de M. Dumoulin et O. Lefebvre) (2010), *Robert Triffin. Conseiller des Princes*, Bruxelles: Peter Lang.
- Friedman, M. (1941), Review of Triffin, Monopolistic competition and general equilibrium theory, *Journal of Farm Economics*, February 1941: 389-90
- Friedman M. (1950), "The case for Flexible Exchange Rates", *Essays in Positive Economics*. Republished in Caves R.E., Johnson H.G. (1968), *Readings in International Economics*, Allen & Unwin, London: 413–437.
- Gutt C. (1948), "Exchange Rates and the International Monetary Fund", *Review of Economics and Statistics*, vol. 30, n. 2, May 1948 and reprinted in Harris S. E., 1948, pp. 217–235.
- Haberler G. (1947), "Comments on 'National central Banking and the International Economy' by Robert Triffin", in *International Monetary Policies. Postwar Economic Studies 7*, Board of Governors of the Federal Reserve System, Washington DC, pp. 82-102.
- Harris S.E., 1948, *Foreign Economic Policy for the United States*, Harvard University Press, Cambridge.

- Hogan M.J. (1987), *The Marshall Plan*, Cambridge University Press, Cambridge.
- Horsefield J.K. (1969a), *The International Monetary Fund 1945-1965, vol.1 Chronicle*, International Monetary Fund, Washington D.C.
- Horsefield J.K. (1969c), *The International Monetary Fund 1945-1965, vol.3 Documents*, International Monetary Fund, Washington D.C.
- Horsefield J.K., De Vries M. (1969b), *The International Monetary Fund 1945-1965, vol.2 Analysis*, International Monetary Fund, Washington D.C.
- Kaplan J.J., Schleiminger G. (1989), *The European Payments Union: Financial Diplomacy in the 1950s*, Clarendon, Oxford.
- Keesing F.A.G., Brand P.J., *Possible role of a Clearing House in the Latin American Regional Market*, International Monetary Fund Staff Papers, 10: 3 (November 1963): 397-460.
- Keynes J.M., 1943, *Proposals for an International Clearing Union*, April 1943, reprinted in Hawkins R.G. (ed), 1965, *Compendium of Plans for International Monetary Reform*, New York University.
- Knorr K. (1952), *Strengthening the Free World Economy*, Report of a conference held at Princeton, on December 16th-17th 1952, Center of International Studies, Princeton University.
- Maes I. (2002), *Economic Thought and the Making of European Monetary Union*, Edward Elgar, Cheltenham.
- Maes I. (2010), *A Century of Macroeconomic and Monetary Thought at the National Bank of Belgium*, National Bank of Belgium, Brussels.
- Maes, I. (2013), 'On the Origins of the Triffin Dilemma', *European Journal of the History of Economic Thought*, 20(6): 1222–50.
- Maes I., Bussière E. (2016), Robert Triffin: The arch monetarist in the European monetary integration debates?, forthcoming in K. Dyson and I. Maes (eds.), *Architects of the Euro. Intellectuals in the making of European Monetary Union*, Oxford: Oxford University Press.
- Maes I., Buyst E. (2004), "Triffin, the European Commission and the Project of a European Reserve Fund", in Dumoulin M. (ed.), 2004, pp.431–444.
- Milward A. S. (1987), *The Reconstruction of Western Europe, 1945-1951*, 2<sup>e</sup> ed., Methuen & Co. Ltd, London.
- Oatley T. H. (2001), "Multilateralizing Trade and Payments in Post-war Europe", *International Organization*, vol. 55, n. 4, 949–969.
- OEEC (1950), *A European Payments Union and the Rules of Commercial Policy to be followed by the Member Countries*, Document approved by the Council of OEEC on 7<sup>th</sup> July 1950, Paris 1950.
- Péters S. (2000), "Le rôle des Belges dans l'élaboration d'un système de paiements en

- Europe, de 1947 a l'Union europeenne de paiements", in Dumoulin M. (ed), *La Belgique et les debuts de la constrution Europeenne*, Ciaco editeur, Bruxelles: 87–102.
- Péters S. (2001), The contribution of Robert Triffin to the European Payments Union, in A. Lamfalussy et al. (eds.), *Fragility of the International Financial System*, Bruxelles: PIE-Peter Lang.
- Polak J.J. (1995), "Fifty Years of Exchange Rate Research and Policy at the International Monetary Fund", *IMF Staff Paper*, vol. 42, n. 4, Dec. 1995.
- Polak J.J. (2001), *The Two Monetary Approach to the Balance of Payments: Keynesian and Johnsonian*, IMF Working Paper, WP/01/100.
- Rhomberg R.R. and H.R. Heller, (1977) 'Introductory Survey' in IMF (1977), *The Monetary Approach to the Balance of Payments, International Monetary Fund*, Washington DC.
- Robson P. (1987) *The Economics of International Integration*, 3e ed., London: Unwin Hyman.
- Tew B. (1988), *The Evolution of the International Monetary System, 1945-1988*, Hutchinson, London.
- Toniolo G. (2005), *Central Bank Cooperation at the Bank of International Settlements, 1930-1973*, Cambridge University Press, Cambridge.
- Triffin R. (1935), "Les mouvements différentiels des prix de gros en Belgique de 1927 à 1934. Calcul et interpretation d'indices de groupes comparables", *Bulletin de l'Institut des Sciences économiques*, Louvain, vol. VI, n.3: 267–295.
- Triffin R. (1937), "La théorie de la surévaluation monétaire et la dévaluation belge", *Bulletin de l'Institut des Sciences économiques*, Louvain, vol.IX, n.1, pp.19–52.
- Triffin, R. (1941). *Monopolistic Competition and General Equilibrium Theory*. Cambridge: Mass., Harvard University Press.
- Triffin R. (1944a), "Central Banking and Monetary Management in Latin America", Harris S.E., 1944, *Economic Problems of Latin America*, McGraw-Hill, New York, London.
- Triffin R. (1944b), "Informe tecnico sobre la ley organica del Banco del Paraguay", *Banco del Paraguay, Ley orgánica del Banco del Paraguay y ley de Bancos*, Asunción, La Colmena, S.A.
- Triffin R. (1946-1947), "National Central Banking and the International Economy", *The Review of Economic Studies*, vol. XIV, n. 36, 1946-1947, pp.53–75.
- Triffin R. (1947), (with R. Bertrand), *The Unresolved Problem of financing European trade*, 29<sup>th</sup> December 1947, Staff Memorandum No. 160 (with a conclusive remarks by Bernstein).
- Triffin R. (1948a), *Multilateralization of European payment agreements among Fund members*, Staff Memorandum, May 7th, 1948.

- Triffin R. (1948b), *Plan for the financing of intra-European payments, 1948-1949*, Staff Memorandum forwarded on October 12th, November 8, 1948. Republished in Triffin R. (1966): 423–438.
- Triffin R. (1948c), "Exchange Control and Equilibrium", in S. E. Harris (ed.) (1948), *Foreign Economic Policy for the United States*, Harvard University Press, Cambridge: 417–425.
- Triffin R. (1949a), *The Multilateralization of Drawing Rights*, Staff Memorandum No. 312, January 28th, 1949 (RD789).
- Triffin R. (1949b), *Flexibility and Incentives in the Intra-European Payments Plan*, Staff Memorandum No. 323, February 23th, 1949.
- Triffin R. (1949c), *Memorandum*, dated July 28th, 1949, republished with the title "Suggested Adaptations in Fund Policy", in Triffin R. (1966): 182–190.
- Triffin R. (1949d), "Points for Discussion on the problem of currency transferability in Europe", in Triffin R. (1966): 441–448.
- Triffin R. (1951), "The Path from EPU to European Monetary Integration", Memorandum transmitted to ECA, November 1951, in Triffin R. (1966): 450–462.
- Triffin R. (1952a), "Monetary Reconstruction in Europe", *International Conciliation*, n. 482, Carnegie Endowment for International Peace New York, June 1952: 262-308.
- Triffin R. (1952b), "Major Proposals for EPU and IMF revision", memorandum prepared for OEEC August 8<sup>th</sup> 1952, in Triffin R. (1966): 462–475.
- Triffin (1953), "Système et politique monétaires de l'Europe fédérée", *Economia Internazionale*, vol. VI, n.1, February-March 1953: 207–212.
- Triffin, R. (1957). *Europe and the money muddle*. New Haven: Yale University Press.
- Triffin R. (1958), "La monnaie et le marché commune. Politiques nationales et intégration régionale", *Cahiers de l'Institut de Science économique appliquée*, n. 74, 1958: 1-16.
- Triffin R. (1960), *Gold and the Dollar Crisis. The Future of Convertibility*, New Haven, Yale University Press.
- Triffin R. (1966), *The World Money Maze: National Currencies in International Payments*, New Haven and London, Yale University Press.
- Triffin R. (1981), "An Economist's Career: What? Why?, How?", *Banca Nazionale del Lavoro Quarterly Review*, No. 138, September 1981: 239–259.
- Triffin R. (1987), "Acceptance Speech delivered by Prof. Robert Triffin", San Paolo Prize for Economics, Istituto Bancaria San Paolo, Torino.
- Viner J. (1950), *The Customs Union Issue*, The Carnegie Endowment for International Peace, New York.
- Wilson J. (2015), *Robert Triffin: Milieux académiques et cénacles économiques internationaux (1935-1951)*, Bruxelles: Versant-sud, pp. 846 + 208 (annexes).

## NATIONAL BANK OF BELGIUM - WORKING PAPERS SERIES

The Working Papers are available on the website of the Bank: <http://www.nbb.be>.

253. "Micro-based evidence of EU competitiveness: The CompNet database", by CompNet Task Force, *Research series*, March 2014.
254. "Information in the yield curve: A macro-finance approach", by H. Dewachter, L. Iania and M. Lyrio, *Research series*, March 2014.
255. "The Single supervisory mechanism or 'SSM', part one of the Banking Union", by E. Wymeersch, *Research series*, April 2014.
256. "Nowcasting Belgium", by D. de Antonio Liedo, *Research series*, April 2014.
257. "Human capital, firm capabilities and productivity growth", by I. Van Beveren and S. Vanormelingen, *Research series*, May 2014.
258. "Monetary and macroprudential policies in an estimated model with financial intermediation", by P. Gelain and P. Ilbas, *Research series*, May 2014.
259. "A macro-financial analysis of the euro area sovereign bond market", by H. Dewachter, L. Iania, M. Lyrio and M. de Sola Perea, *Research series*, June 2014.
260. "Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2012", by C. Mathys, *Document series*, June 2014.
261. "European competitiveness: A semi-parametric stochastic metafrontier analysis at the firm level", by M. Dumont, B. Merlevede, G. Rayp and M. Verschelde, *Document series*, July 2014.
262. "Employment, hours and optimal monetary policy", by M. Dossche, V. Lewis and C. Poilly, *Research series*, September 2014.
263. "On the conjugacy of off-line and on-line Sequential Monte Carlo Samplers", by A. Dufays, *Research series*, September 2014.
264. "The effects of state aid on Total Factor Productivity growth", by P. Van Cayseele, J. Konings and I. Sergant, *Research series*, October 2014.
265. "Assessing the role of ageing, feminising and better-educated workforces on TFP growth", by A. Ariu and V. Vandenberghe, *Research series*, October 2014.
266. "A constrained nonparametric regression analysis of factor-biased technical change and TFP growth at the firm level", by M. Verschelde, M. Dumont, B. Merlevede and G. Rayp, *Research series*, October 2014.
267. "Market imperfections, skills and total factor productivity: Firm-level evidence on Belgium and the Netherlands", by S. Dobbelaere and M. Vancauteran, *Research series*, October 2014.
268. "Import competition, productivity and multi-product firms", by E. Dhyne, A. Petrin, V. Smeets and F. Warzynski, *Research series*, October 2014.
269. "International competition and firm performance: Evidence from Belgium", by J. De Loecker, C. Fuss and J. Van Biesebroeck, *Research series*, October 2014.
270. "Acquisitions, productivity, and profitability: Evidence from the Japanese cotton spinning industry", by S. Braguinsky, A. Ohyama, T. Okazaki and C. Syverson, *Research series*, October 2014.
271. "Total factor productivity: Lessons from the past and directions for the future", by B. van Ark, *Research series*, October 2014.
272. "Outward Foreign Direct Investment and domestic performance: In search of a causal link", by E. Dhyne and S. S. Guerin, *Research series*, October 2014.
273. "Economic importance of air transport and airport activities in Belgium - Report 2012", by F. Van Nieuwenhove, *Document series*, November 2014.
274. "Fiscal policy and TFP in the OECD: Measuring direct and indirect effects", by G. Everaert F. Heylen and R. Schoonackers, *Research series*, November 2014.
275. "Effectiveness and transmission of the ECB's balance sheet policies", by J. Boeckx, M. Dossche and G. Peersman, *Research series*, December 2014.
276. "How do exporters react to changes in cost competitiveness?", by S. Decramer, C. Fuss and J. Konings, *Research series*, January 2015.
277. "Optimal monetary policy response to endogenous oil price fluctuations", by A. Stevens, *Research series*, January 2015.
278. "Comparing fiscal multipliers across models and countries in Europe", by J. Kilponen, M. Pisani, S. Schmidt, V. Corbo, T. Hledik, J. Hollmayr, S. Hurtado, P. Júlio, D. Kulikov, M. Lemoine, M. Lozej, H. Lundvall, J. R. Maria, B. Micallef, D. Papageorgiou, J. Rysanek, D. Sideris, C. Thomas and G. de Walque, *Research series*, March 2015.
279. "Assessing European competitiveness: The new CompNet micro-based database", by P. Lopez-Garcia, F. di Mauro and the CompNet Task Force, *Research series*, April 2015.
280. "FloGARCH: Realizing long memory and asymmetries in returns volatility", by H. Vander Elst, *Research series*, April 2015.

281. "Does education raise productivity and wages equally? The moderating roles of age, gender and industry", by F. Rycx, Y. Saks and I. Tojerow, *Research series*, April 2015.
282. "Assessing European firms' exports and productivity distributions: The CompNet trade module", by A. Berthou, E. Dhyne, M. Bugamelli, A.-M. Cazacu, C.-V. Demian, P. Harasztosi, T. Lalinsky, J. Merikül, F. Oropallo and A. C. Soares, *Research series*, May 2015.
283. "Economic importance of the Belgian ports: Flemish maritime ports, Liège port complex and the port of Brussels - Report 2013", by F. Van Nieuwenhove, *Document series*, June 2015.
284. "Crisis-proof services: Why trade in services did not suffer during the 2008-2009 collapse", by A. Ariu, *Research series*, July 2015.
285. "The labour market position of second-generation immigrants in Belgium", by V. Corluy, J. Haemels, I. Marx and G. Verbist, *Research series*, September 2015.
286. "The implications of household size and children for life-cycle saving", by B. Capéau and B. De Rock, *Research series*, September 2015.
287. "Monetary policy effects on bank risk taking", by A. Abbate and D. Thaler, *Research series*, September 2015.
288. "The Belgian production network 2002-2012", by E. Dhyne, G. Magerman and S. Rubínová, *Research series*, October 2015.
289. "Portfolio choice and investor preferences: A semi-parametric approach based on risk horizon", by G. Hübner and T. Lejeune, *Research series*, October 2015.
290. "Predicting Belgium's GDP using targeted bridge models", by Ch. Piette, *Research series*, January 2016.
291. "Did export promotion help firms weather the crisis?", by J. Van Biesebroeck, J. Konings and C. Volpe Martincus, *Research series*, January 2016.
292. "On the role of public policies and wage formation for business investment in R&D: A long-run panel analysis", by T. Buyse, F. Heylen and R. Schoonackers, *Research series*, January 2016.
293. "Unraveling firms: Demand, productivity and markups heterogeneity", by E. Forlani, R. Martin, G. Mion and M. Muûls, *Research series*, February 2016.
294. "Unemployment risk and over-indebtedness: A micro-econometric perspective", by Ph. Du Caju, F. Rycx and I. Tojerow, *Research series*, February 2016.
295. "International shocks and domestic prices: How large are strategic complementarities?", by A. Amiti, O. Itskhoki and J. Konings, *Research series*, March 2016.
296. "The supplier network of exporters: Connecting the dots", by E. Dhyne and S. Rubínová, *Research series*, May 2016.
297. "Does one size fit all at all times? The role of country specificities and state dependencies in predicting banking crises" by S. Ferrari and M. Pirovano, *Research series*, May 2016.
298. "Competition and product mix adjustment of multi-product exporters: Evidence from Belgium", by K. Breemersch, *Research series*, June 2016.
299. "Flemish maritime ports, Liège port complex and the port of Brussels – Report 2014", by G. Van Gastel, *Document series*, June 2016.
300. "Misalignment of productivity and wages across regions? Evidence from Belgium matched panel data", by F. Rycx, Y. Saks and I. Tojerow, *Research series*, July 2016.
301. "The European Payments Union and the origins of Triffin's regional approach towards international monetary integration", by I. Maes and I. Pasotti, *Research series*, September 2016.

National Bank of Belgium  
Limited liability company  
RLP Brussels – Company's number: 0203.201.340  
Registered office: boulevard de Berlaimont 14 – BE-1000 Brussels  
[www.nbb.be](http://www.nbb.be)

Editor

**Jan Smets**

Governor of the National Bank of Belgium

© Illustrations: National Bank of Belgium

Layout: Analysis and Research Group  
Cover: NBB AG – Prepress & Image

Published in September 2016