Working Paper
in Economic
and Social History
No. 1 February 2017

A Monetary Plethora and What to do with it: the Bank of Portugal during World War II and the Post-War Period (1939-1960)

Luciano Amaral

Associação Portuguesa
de História Económica
e Social

A Monetary Plethora and What to do with It: the Bank of Portugal during World War II and the Post-War Period (1939-1960)

Luciano Amaral

Nova School of Business and Economics

Lisbon, Portugal

Email: lamaral@novasbe.pt

Phone number: +351213801600

Acknowledgments: the author is most thankful to all personnel at the Bank of Portugal's Historical Archive, namely António Gil Matos, Maria do Carmo Rogado and Filipe Fernandes for their availability to find the necessary documentation for this research; also the excellent conditions provided by the Bank of Portugal's Department of Economic Studies and the personal attention there of Isabel Horta Correia and António Antunes

Abstract: Up to World War II the Bank of Portugal (BoP) was far from possessing the features normally associated with a central bank. It was still a commercial bank, although one that had acquired some central bank functions. The World War II period was decisive to change this ambiguity. The change was mostly caused by an unusually large influx of international means of payment (gold and foreign exchange) as a consequence of Portuguese neutrality during the war, which allowed the BoP to transform its balance sheet structure: the BoP became the institution centralising commercial banks' reserves. However, all of this happened during a very disturbing period for the BoP. The BoP had been reformed to function as the manager of the escudo in the gold-exchange standard. But just a few months after the reform, the gold-exchange standard collapsed. The BoP adapted quickly to the new environment of discretion, Government interference, and nationalism. It did it so, however, in a relatively original way: it followed the trend but kept at the same time certain features of a central bank still committed to gold standard principles. This was visible during both the World War II and Post-War periods.

Resumo: O Banco de Portugal (BdP) estava longe de possuir, até à II Guerra Mundial, as características normalmente associadas aos bancos centrais. Era ainda um banco comercial, embora já tivesse adquirido algumas funções típicas dos bancos centrais. O período da II Guerra Mundial foi decisivo para mudar esta ambiguidade. A mudança foi essencialmente causada pela entrada de grande quantidade de meios internacionais de pagamento (ouro e divisas), como consequência da neutralidade portuguesa durante a guerra, algo que permitiu ao banco transformar o seu balanço: o BdP especializou-se então na centralização das reservas dos bancos comerciais. Contudo, tudo isto aconteceu durante um período bastante perturbador para o BdP. O banco tinha sido reformado para funcionar como administrador do escudo no padrão divisas-ouro. Mas o padrão divisas-ouro entrou em colapso passados apenas uns meses sobre a reforma. O BdP adaptou-se rapidamente ao novo ambiente de discrição, de interferências governamentais e de nacionalismo. Mas fê-lo de uma forma relativamente original: acompanhou a tendência mas manteve ao mesmo tempo certas características de um banco central ainda ligado aos princípios do padrão ouro. Isto foi visível tanto durante a II Guerra Mundial como no pós-guerra.

Introduction

Up to World War II the Bank of Portugal (BoP) was far from possessing the features normally associated with a central bank. It was still a commercial bank, although one that had acquired some central bank functions, especially that of issuing money under a monopoly regime. In a less structured way it had also played the role of lender of last resort on some occasions. Being formally a private joint-stock commercial bank, the BoP had to act like one, particularly to satisfy its shareholders. But this posed limits to the central bank functions it was also supposed to perform. The World War II period was decisive to change this ambiguity. In order to understand it, we have to take into consideration a vaster process affecting the whole of the Portuguese financial system in the period, namely the much significant growth of financial depth.

Figure 1 shows financial depth in Portugal from 1931 to 1960, measured by the monetary aggregate M2 as a percentage of GDP, in comparison with Spain, Sweden, the UK, and the US. The World War II years corresponded to a decisive change in the behaviour of this indicator in Portugal: by 1931, M2 was at a level of about 30% of GDP, distant from the 60% to 80% typical of more financially sophisticated countries such as Sweden, the UK and the US, but also of the 40% of a relatively less sophisticated one such as Spain; by the start of the war the situation was virtually the same, but when hostilities ended it had reached a level of 80% of GDP, perfectly comparable to them. The reason for this quantitative transformation was the unusually large influx of international means of payment (gold and foreign exchange), as a consequence of Portuguese neutrality during the war. Neutrality allowed for Portugal to have trade with both belligerent blocs, and also to transform the country into a safe haven for refugees fleeing from the war zones, many of them bringing their savings or being the recipients of transfers sent by aid agencies.

The accumulation of gold and foreign exchange in the hands of the BoP granted it the control over an unprecedented amount of resources, which were fundamental for two things:

for the BoP to have much more leeway in the implementation of monetary policy and also for it to specialise in the attraction of banks' deposits – during World War II, deposits made at the BoP grew vastly but were mostly constituted by bank reserves rather than regular customers' deposits. However, all of this happened during a very disturbing period (already coming from the 1930s) for the Portuguese Government and the BoP. The BoP had been reformed by the Government in 1931 to function as the manager of the newly inserted Portuguese currency (the escudo) in the gold-exchange standard. In theory, the BoP was to act like the old central banks of the classical gold standard, ascribed to the "rules of the game". But just a few months after the reform, the gold-exchange standard collapsed (when sterling began floating). The BoP, an institution designed to live in a certain environment, had to adapt quickly to a new one. Rather than comply with international common rules, the time was now for discretion, Government interference, and nationalism. What is interesting is how the BoP adapted in a relatively original way, namely by following the trend while at the same time keeping certain features of a central bank still committed to gold standard principles.

John Singleton (2011, p. 110) has precisely identified a "first central banking revolution" in the 1930s, the World War II period and the post-war period (up to the 1970s): this was now the period of "managed money" (in the expression of Hirsch and Oppenheimer, 1976), under the general influence (either presumed or real) of Keynes. In the words of Capie *et al.* (1994, p.24), "in practice, the central bank became a junior branch of the Treasury", so much so that many central banks were nationalised in this period (see for dates, Capie *et al*., 1994). Central banks were given much bigger tasks than just monetary stability. Such new tasks consisted, mostly, of helping to keep high (or full, as it was called at the time) employment and of helping to keep consistently strong economic growth. Independence of central banks was now seen as a relic idea, as they were rather supposed to cooperate with the Government in the implementation of "demand management" policies, which had both a fiscal (Government) and a monetary (central bank) dimension, and which were inserted into a long-run trend of expansion of public spending, mostly related to the installation of the "Welfare State". In most instances this also meant fiscal imbalance and decisions by central banks to lower interest rates in order to lighten the weight on public accounts of a growing public debt.

Portugal followed the trend but with important differences: the BoP also became, to a large extent, an appendix to the Ministry of Finance, but this meant a quite different thing than in other western countries. Interference of the Government in the BoP's management did increase, but the BoP was not nationalised, contrary to the majority of western central banks. Most of all, the Portuguese Government was not committed to the erection of a Welfare State. Quite on the contrary, its major commitment was to fiscal balance. At the same time, the BoP continued attached to a rule for money emission, an increasing rarity at a time when discretion became the norm. In principle, the BoP should not coordinate anything with the Government at this level but simply follow the rule it was ascribed to, which indexed money emission to the amount of foreign reserves (gold and exchange) in its hands. An American economist visiting Portugal and studying the Portuguese financial system in the context of Marshall aid, Harry Wallich, precisely criticised, from a keynesian perspective, the BoP for these reasons: "the Bank of Portugal has faithfully transmitted the impulses coming through the balance of payments. […] By not changing the volume of credit significantly, the Bank has […] succeeded in not aggravating the inflationary and deflationary pressures […]. [But] it has not so far attempted to offset them" (Wallich, 1951, p. 29). Historian Nuno Valério (2005), taking a similar perspective, has also emitted a negative opinion on the fact that, thanks to the Government's radical policy of getting rid of Treasury Bills, the bank could not use open market operations in order to manage aggregate demand.

We show in this paper that, during World War II and the 1950s, even if the BoP lacked the typical powers of the twentieth century central bank, which were mostly to set reserve ratios for commercial banks, to carry out open market operations, and to use discretion in money emission, it was still able to "manage money" (to use again the expression of Hirsch and

Oppenheimer, 1976). This was done, however, through the use of surrogate instruments to those it lacked. Such instruments were mostly two: first, the BoP never really followed its own emission rule, thus managing liquidity according to circumstances; second, the BoP was also able to manage the volume of banks' reserves, despite the fact that their minimum level was set by decree (at least in commercial banks). These sorts of actions certainly lie within what Charles Goodhart (2010, p. 19) has considered to be "the essence of central banking", i.e. the power "to create liquidity by manipulating its own balance sheet". Finally, the BoP was also able to set the escudo's exchange rate at critical times, although within a general practice of fixing it to some key currencies (especially sterling and the US dollar), with a clear impact on the price level.

These methods were used by the BoP having two policy concerns in mind: a central one and a complementary one. The central concern was to keep inflation low. To be more precise, the wording of the law was "to keep the value of the Portuguese currency stable". Due to the recent tradition of high inflation and also to the precise challenges faced by the BoP in this period, the most important concern was indeed inflation. But when faced with a potentially deflationary environment, the BoP, as we will see below, also acted to prevent an excessive price fall. Keeping the "the value of the Portuguese currency stable" could almost be seen as the BoP's "mandate", to use modern central bank parlance. The complementary concern of the BoP was to keep interest rates low in order to foster investment and economic growth. The argument of the paper is that the BoP would have not been able to reach both objectives if it were not for its accumulation of international reserves during World War II.

We study the period from 1939 to 1960 (with a brief retrospect of the 1930s). The purpose is to show how the wartime period changed the conditions of the BoP in a structural way, and how this was visible during the peacetime period of the 1950s. Both fiscal and monetary policies would be put under quite different circumstances after 1961, as Portugal got involved in a war that lasted until 1975. That period deserves an approach of its own.

The remainder of the paper is as follows:

In section 1 we present the 1931 reform of the BoP, which was inserted within a larger monetary reform, aiming at the introduction of the escudo in the gold-exchange standard; we also show how the collapse of the gold-exchange standard created a difficult and new situation for the BoP. In section 2 we present the radically different monetary conditions created by Portuguese neutrality during World War II. The accumulation of reserves during the war forced the BoP to be quite active in the managing of money, something that is shown in Section 3. In section 4 we show how the same accumulation of reserves transformed the BoP into a much stronger institution, and how the comfortable position of the Portuguese balance of payments during the 1950s allowed it to reinforce that position. We conclude, in Section 5, with a statistical test which confirms the relevance of the BoP's actions to keep inflation under control during this period.

1. Before the war: monetary reform and the demise of the gold standard

In 1931 the Portuguese Government, under the direction of dictator António de Oliveira Salazar, designed a thorough monetary reform which included an equally thorough reform of the BoP. The main objective of the reform was to reinsert the escudo in the gold standard and to make of the BoP the guardian of the reformed currency. Return to the gold standard was internationally seen then as the fundamental instrument to tame the fiscal and monetary chaos inherited from World War I (Bordo, 1993). The Portuguese Government accompanied these efforts, although with a delay.

It took a while before Portugal gathered all the conditions to return to the gold standard. The Portuguese participation in World War I had been at the origin of a very serious financial crisis, mostly resulting from lack of fiscal discipline. The Government paid for war expenditure by monetising the deficits and the BoP had been asked, consequently, to increase money issuing in accordance. And the situation was not put under control in the post-war period, at least until 1924 (Silva and Amaral, 2011). This led to a dramatic inflationary episode coupled with a massive depreciation of the escudo in the world exchange markets: in 1921, inflation reached the highest value in all of Portugal's price history, 120%, only below the famous hyperinflationary crises of the postwar period in Germany, Austria, and Hungary (Silva and Amaral, 2011).

The Portuguese authorities were able to balance the budget thanks to a series of fiscal reforms implemented throughout almost a decade, between 1922 and 1931. The last of these reforms was put in place by Salazar between 1929 and 1931, and with success (Silva and Amaral, 2011). Monetary reform was only possible once the fiscal issue had been settled, and it came in 1931, with Decrees 19,869 and 19,870, of 9 June. Decree 19,869 reinserted the escudo in the gold standard (now the gold-exchange standard), with a value of 65.51 mg of fine gold, and made the BoP's notes and coins fully convertible. Following the recommendations of the 1922 Genoa conference, convertibility was indirect, through sterling.

In this new monetary regime, the BoP was attributed the task of keeping the parity of the escudo with gold. In principle this should have been enough to control inflation. But the Government went beyond it, forcing the BoP to adopt an ultra-cautious stance. In the words of the preamble to Decrees 19,869 and 19,870, "it can be theoretically defended that, once stability is preserved, it is not possible for the issuing bank to have more notes in circulation than those demanded by the market". But, for reasons of "prudence, [which] we expect is not going to be considered excessive, we have preferred to set a maximum limit to circulation" (preamble to Decrees 19,869 and 19,870, p. 1,085):[1] according to article 12 of Decree 19,869, the bank should keep reserves in gold, foreign currency convertible in gold, and public debt of countries in the gold-exchange standard in a proportion of 30% of its sight liabilities (notes and deposits) and, independently of this reserve, could not issue more than 2,200 million escudos in notes without full backing with gold reserves (bars or coins). The backing of the remaining 70% of the bank's sight liabilities should be constituted of additional foreign exchange not included in the primary 30% reserve, and of commercial discount and rediscount paper that could not exceed a

[1] Translation by the author, such as the remaining ones from Portuguese sources, except where indicated.

maturity of three months. Thus, the BoP should not use discretion but simply follow the rule indexing money issuing to the amount of gold and foreign reserves in its hands. This amount depended on the international payments position of the country. Due to the traditional pattern of this payments' position, which was one of constant struggle to reach balance, such an indexation was supposed to allow for low inflation. And if that proved insufficient, there was the additional 2,200 million escudos limit for notes without full gold backing.

According to the reform package, the BoP should "increasingly approach the nature of a central bank" (in the words of the preamble to decrees 19,869 and 19,870, p. 1,090), and its main function should be to keep "the value of the Portuguese currency stable" (article 5 of Decree 19,869). Keeping inflation under control was, thus, the BoP's ultimate "mandate" (to use modern-day central bank parlance). The Government, however, believed that in 1931 the BoP was still a "weak institution [...], [rather] badly equipped to deal" with the requirements of a "true central bank" (preamble to decrees 19,869 and 19,870, p. 1,089). As Fernando Emídio da Silva, a member of the BoP's board from 1931 to 1956, would say in 1971, "the resources at the disposal of the Bank of Portugal when it was called to take its proper place, in 1931, in the country's life" were of a quite "modest level" (Silva, 1971, p. 25). The bank's main weakness was the structure of its asset portfolio, dominated by Government debt. Gold, foreign currency and credit to banks and the public all represented a smaller proportion of that portfolio in the early 1930s (Figure 2). Among the debt instruments, the Government was particularly concerned with Treasury Bills, which represented its largest part and had been an important source of deficit monetisation during the war and post-war periods. The Government wanted to eliminate Treasury Bills and, consequently, they should disappear from the bank's balance sheet as soon as possible (Decree 19,870).

One of the instruments the Government devised to increase the power of the BoP was to reinforce its level of coordination with the Government itself. This was done in the 1931 reform in two ways. The first was through a larger presence of the Government in the board: Decree

19,870 made the number of the bank's vice-governors pass from one to three, two of them being appointed by the Government – the third one being appointed by the shareholders. Before the reform, the Governor had already been appointed by the Government, but there was only one vice-governor, which was elected by the shareholders (the Government could only appoint a secretary-general). The second way of increasing coordination with the government was through the creation of a "Stabilisation Commission", having as its main function "to direct the Bank's policy in what concerns monetary stabilisation, namely the regulation of the price and global volume of credit" (as it was said in the bases of the contract between the Government and the BoP, published in Decree 19,870, p. 1,096). This commission prevailed, thus, over the board and was dominated by the representatives of the Government: the Governor and the two Government-appointed vice-governors. The Government still had a minority position in the 13-member board (despite being already the largest shareholder) but controlled its top positions.

A more powerful BoP was crucial for a role Salazar wanted to attribute to it and which he cherished especially: that of helping the economy grow. The BoP should work "in favour of the country's economy" (preamble to decrees 19,869 and 19,870, p. 1,090) and the main instrument for it was by structurally lowering its interest rate. Salazar had been defending this idea for a long time. According to him, economic growth should go along with three other elements, all constituting a systemic whole: the ability of the Portuguese economy to keep international payments balanced, the ability of the Government to keep budgets balanced, and the ability of the BoP to maintain monetary stability within the gold standard. In a study published in 1916 on the devaluation of the Portuguese currency since 1891, he had noted how, from that year on, a "deep evil [had been] slowly undermining all of the nation's economy. The economic imbalance, resulting from the country's resources not being enough to compensate its obligations, [had been] solved by the continuous exportation of circulating gold". So, there was an "intimate connection" between the "exchange rate movements" and the "economic development" of the country (Salazar, 1998, p. 164): an "equilibrated economic balance [...] is the only basis allowing

[...] for a metallic circulation keeping variations of the exchange rate within the rigid limits of the gold points. This is why it should be a national programme […] to develop at its utmost all elements of productivity and wealth capable of making of Portugal a definite creditor abroad" (Salazar, 1998, p. 298).

In an ironic twist of fate, however, the gold-exchange standard collapsed right when these reformist efforts were being concluded. The escudo abandoned the gold standard a mere three months after having returned to it, when the Portuguese authorities decided to follow the depreciation of sterling on 21 September 1931 and its consequent withdrawal from the system. The collapse of the gold standard deprived, thus, the BoP of its guidance. Discipline could no longer be imported from international "best practices", as the world was entering into a period of competitive depreciations, protectionism and expansionary fiscal policies.

The BoP had to face the new challenges with a large number of limitations. The bank had been created in 1846 as a joint-stock commercial bank having as main purposes the financing of the Government and working as the Government's banker and treasurer – and it had been given, in order to compensate for these tasks, the monopoly of money emission since the late nineteenth century (operating under a contract with the Government) (Valério, 1996, and Reis, 1999). In the 1930s the bank still functioned as a commercial bank. The 1931 reform tried to correct for this by limiting its commercial activities to the provinces and forbidding them in Lisbon and Porto. However, the BoP's withdrawal form commercial activity was quite slow throughout the decade (Reis, 1995 and 1999, and Valério, org., 2010). So, on the eve of World War II, the range of powers of the BoP was quite limited, by comparison with modern-day central banks: its most important power rested on the discount rate, which it could freely establish and which, since Decree 20,983, of 7 March 1932, worked as a threshold for the commercial banks' own discount rates (they could not go beyond 1.5% of the BoP's rate). But then it lacked the power to set reserve ratios, which were established by decree: according to Decree 10,634, of 20 March 1925, they should represent 20% of demand deposits in commercial banks; and it could not carry out open market operations, due to the deliberate Government policy of eliminating Treasury Bills. Finally, it should not use discretion in money emission, thanks to the 1931 rule.

2. The war, neutrality and its effects on the balance of payments

The monetary rule adopted by the Portuguese authorities was designed having in mind the traditional foreign position of the country. The World War II period changed these traditional conditions, as the balance of payments displayed then various surplus years, a quite atypical phenomenon. The new situation originated not only in transfers but (most unusually) in trade as well. At the root of it was the country's neutral position during the conflict (a status shared by only four more European countries: Spain, Switzerland, Sweden, and Turkey). This allowed it not only to have trade with both blocs but also to become a safe haven for refugees fleeing from the war zones and bringing large savings with them.

This is no place for an elaborate description and discussion of Portuguese neutrality (which can be found in such works as Leite, 1999, and Telo, 2000), but we should nevertheless highlight its main features. First, Portugal's neutrality did not correspond to equidistance between the two sides. Rather, it was conditioned on a general alignment with Britain, a position resulting from old diplomatic ties between the two countries. The triangular relationship between Portugal, Britain and Germany (which the US later joined) suffered various swings and turns as the relative position of the belligerents changed during the war and as various territorial threats to Portuguese neutrality appeared on the strategic map (the various and complex details of these scenarios can be found in Telo, 2000).

It is not also the point of this paper to describe and discuss Portugal's trade policy and position during the war, which can be found in such works as Rosas (1994), Telo (2000) and Louçã (2000), but a few points must be recalled. Trade was not free in the period. A series of quite restrictive agreements framed the trade relations between Portugal and the belligerents, particularly Britain and Germany. Of relevance were also the payments agreements between Portugal, on the one side, and Britain and Germany on the other.

The 1940 payments agreement with Britain was particularly important. The agreement offered rather favourable conditions to Britain, as it allowed for virtually unlimited credit in trade relations with Portugal for the duration of the war. According to it the Bank of England (BoE) opened a special account in pounds at the BoP, and the latter a special account in escudos at the BoE. All official trade in goods and services between the two countries should be settled through these accounts. There was no limit to the amount of escudos the BoP could sell to the BoE at the fixed exchange rate of 100$20 escudos per pound. The debt was only to be settled once the war was over. Britain was given five years after the end of the war to repay the debt. The debt was "guaranteed" in gold (i.e. it should be repaid in gold). Also, the BoE promised to find profitable uses for the sterling balances accumulating in London. In a 1940 telegram to the BoP, reproduced in the minutes of the Stabilisation Commission, Cameron Cobbold, a high officer of the BoE, suggested that "the balance in the [BoP's] special account at the Bank of England […] [should] be temporarily transferred, at the Bank of Portugal's discretion, in a quantity to be fixed by common agreement, into a special account A, and the balance in that account [should] be used in a profitable manner by the Bank of England on behalf of the Bank of Portugal" (Bank of Portugal c, Book 4, 1940, p. 33).[2] The BoP accepted the proposal and the BoE used the sterling balances of the BoP in various operations until the end of the war. A large part of them was used in the acquisition of British Treasury Bills; another part was used in undisclosed financial operations which grew enormously during the war. Thanks to this agreement, Britain accumulated a sizable debt (76 million pounds), which was of much help in its military effort (details on all of this process can be found in Leite, 1999, Telo, 2000, and Abreu, 2014).

[2] English in the original.

Payments with Germany were never on an equally favourable footing, as Germany had to find immediate ways of paying for its imports from Portugal, in the form of either gold or foreign currency (particularly Swiss francs). Trade with Germany had been regulated since 1935 by a clearing agreement according to which the imports from Portugal had to be paid in Reichsmark in a special account of the BoP in the German Clearing Chamber (*Deutsche Verrenschnungkasse*), and the amounts there deposited could only be used by Portuguese importers of German goods in order to clear the balance between the two countries (Leite, 1999, and Telo, 2000). But, as a trade surplus grew in Portugal's favour in the first years of the war, a new settlement had to be reached: in 1941 and 1942 some German payments were made in Swiss francs, but in 1942 the Portuguese Government refused continuing the practice and demanded the trade exchanges to be exclusively settled in gold, although shipped from the Swiss National Bank only (Leite, 1999, and Telo, 2000).

The most notable Portuguese export success during the war was a mineral that saw its international demand increase enormously by both the allies and the axis powers: wolfram. Wolfram is a heavy metal, the one with the highest melting point, something that makes it particularly interesting for military purposes, especially the fabrication of penetrating projectiles. Portugal was the largest wolfram producer in Western Europe (Telo, 2000), and between 1941 and 1944 the country was involved in a series of trade disputes over wolfram with Britain, the US and Germany, the consequences of which were a heightened demand for the mineral, leading to an extraordinary increase of its export unit value. Under allied pressure to stop wolfram exports to Germany, the trade was completely interrupted in official terms in 1944. But until then a true wolfram fever swept the country, particularly in the areas where it was abundant. Farmers left the toil of the land to try their fortune in improvised wolfram pits. Fortunes were made (and unmade...) from one day to the next during this period (for various aspects related with the wolfram fever, see Nunes, 2010).

The major consequence for Portugal of the wolfram trade wars was the appearance of a series of trade surpluses in years 1941, 1942, and 1943 (Figure 3). But there was more than trade at play: there were also transfers made into the country, accompanying the arrival of refugees (particularly Jewish), in a number estimated at something between 50,000 and 100,000 for the whole war period. Many of these refugees brought savings with them, and many aid agencies (especially from the US) made transfers as well in their favour (on the figures and refugee situation during the war, see Pimentel, 2006, and Milgram, 2010). As a consequence of these movements the Portuguese balance of payments presented a very atypical profile during the war, with substantial current account surpluses (Figure 3). This had direct consequences for the money supply, due to the rule to which the BoP was ascribed to, i.e. emitting according to the availability of gold and foreign currency in its hands.

3. What did the Bank of Portugal do during World War II?

World War II made national and international conditions move even further away than in the 1930s from the gold standard kind of framework the reformed BoP wanted to be inserted in. The BoP had, thus, to find ways of moving through the new landscape while holding to its essential “mandate” of keeping monetary discipline. The first challenge it had to face was the escudo’s exchange rate. The BoP and the Government had, since the collapse of the gold standard in 1931, essentially pegged the escudo to sterling, changing for the dollar or the French franc in case of “excessive” depreciation of the British currency (Valério, org., 2010). In the month the war started, September 1939, Britain introduced exchange controls and the pound entered into a trend of persistent depreciation. The BoP’s initial reaction was to combine depreciation with a certain preservation of the external value of the escudo, first by making it depreciate only in a proportion of 90% of the successive pound depreciations, later by pegging the escudo to the dollar (Figure 4) (Bank of Portugal a, 1940 and 1941). A combination between an anti-inflationary stance and competitiveness concerns was present in these decisions.

But in July 1940 the US and the UK signed a payments agreement pegging the dollar and the pound to each other, in order to help the British war effort, and the picture changed. In the sequence of the agreement, still in July, the BoP and the BoE signed the payments agreement mentioned in the previous section pegging the escudo to sterling at the value of 100$20 escudos per pound (thus incorporating a depreciation of the British currency). This rate was to prevail until the end of the war (and beyond) (Figure 4). However, as Portuguese exports were in high demand and both the British and American governments imposed restrictions on their own exports, this led to an increasingly positive payments balance between Portugal and the two allies. Also, the payments agreement between the BoP and the BoE signed in 1940 allowed for the UK to accumulate a virtually infinite debt. This means that the escudo became more and more undervalued as the UK debt increased and the balance with the US became favourable.

A similar situation was created with the two other most important trade and payments partners, Germany and Switzerland. The relationship with them was framed by the agreements mentioned in the previous section. Even if these agreements did not include any clause pegging the exchange rate of the escudo to the Reichsmark and the Swiss franc, the truth is that, such as in the case of sterling and the dollar stability basically prevailed (Figure 4). But this also corresponded, as in the case of sterling and the dollar, to an increasing undervaluation of the escudo in relation to the Reichsmark.

The second challenge put to the BoP during the war was a growing inflation rate (Table I). The exchange rate policy was not helping, by boosting exports and favouring the introduction of large means of payment in the country, but the (mostly political and strategic) constraints did not allow for anything much different. The problem now was that the 1931 rule of indexing money emission to the BoP’s holdings of gold and foreign currency was not helping either. The rule had been conceived in the expectation of a strong foreign constraint from the international payments position of the country and of a fixed exchange rate between the escudo and sterling. But the war reversed totally the situation.

If we look into the various components of the money base (Figure 2) we can see that, between 1939 and 1945, the amount of credit given to the Government remained stable and the amount of credit given to banks or regular clients declined. Growth came in part from gold but mostly from foreign exchange. This was the inevitable reflection of the growth of Portuguese exports and of the trade (and transfers) surpluses mentioned above. Most of the exchange was constituted of sterling, thanks to the 1940 payments agreement with the BoE (Figure 5). The fixing of the escudo's and pound's exchange rates was an additional source of inflationary pressure, as the BoP accounted the amount of pounds in its balance sheet at the official market rate, even if, by then, the pound became increasingly overvalued. This implied that the BoP should increase its sight liabilities proportionally, in accordance with the 1931 rule.

The 1941 BoP's annual report notes how this rather unusual circumstance was at the origin of a true "monetary plethora" (Bank of Portugal a, 1942, p. 14), the mechanics of which the 1940 report explained in the following manner: "the abundance in the [banking] market resources comes from the important increase in [...] deposits generated by the flow of foreign exchange in [commercial] banks, which [...] [sell] them to the emitting bank. That is, there [...] [has been] a notable conversion of foreign monetary values into national monetary values" (Bank of Portugal a, 1941, p. 20).

In the face of this evolution, what did the BoP do, taking its "mandate" into consideration? The first thing to be noted is that the BoP expressed explicit concern about inflation. In the 1941 report the board presented some possible measures to combat it: a "strong revaluation of the escudo with the purpose of reducing the acquisitive power of the escudo abroad; selling goods only to the countries selling us goods in the same proportion; [use the BoP's resources to] create vast stocks of raw materials and other goods that our industry needs" (Bank of Portugal a, 1942, p. 20). But none of these measures was considered to be "practical and efficient": "revaluing the escudo [...] would have such depressing effects in our economy that a larger evil would result; to be able, in the current circumstances, to have foreign countries selling us fuel, metals, textile goods, machines, etc. in enough quantity [...] [is] impossible; not selling our goods [...] would be a severe blow to our activities". None of them should, thus, be adopted: "what we have to do is [...] [only] to take some internal correcting measures" (Bank of Portugal a, 1942, p. 20).

One of the possible "correcting measures" could have been the use of the discount rate in a discretionary and counter-cyclical manner. But the BoP decided not to do it, quite on the contrary, as it decided to allow the "monetary plethora" to be reflected in an increasingly lower discount rate, at least until 1944 (Figure 6). Despite not being helpful to control inflation, this was in accordance with Salazar's idea of a structural decline of interest rates in order to foster investment and economic growth.

The anti-inflationary stance was to be found elsewhere. According to the 1931 automatic rule, the BoP should translate the availability of gold and foreign currency into emission and sight deposits. But this poses a problem of interpretation: according to the rule, the backing by gold, foreign exchange and gold-values was to be applied to two quantities, note emission, on the one hand, and deposits by banks and the Government at the BoP, on the other. But in reality only the note emission part should be counted as contributing to inflation – as the other, on the contrary, had a sterilising (or anti-inflationary) effect. This means we should analytically separate the two.

The first question we need to settle is: was the rule being followed by the BoP or not? Table II shows figures for the actual sight liabilities of the BoP and for what those sight liabilities would have been if the rule had been followed: Column A shows the actual emission (including notes in circulation and the other sight liabilities); Column B shows what that emission would have been had the BoP actually adhered to the rule. The difference between the two reveals that the BoP chose to keep its sight liabilities below what the rule would have allowed to, in a practice we could call "sterilisation" (following Reis, 1999). Column C shows the proportion between the two: between 1939 and 1945, actual sight liabilities were less than the potential ones in a proportion ranging from 10% to 22%.

Table II shows additionally that this was a practice coming from the 1930s (also see Reis, 1999) and that, in reality, the BoP became less reliant on it during the war. “Sterilisation” grew until 1940 but declined from then on: at the height of the inflationary pressures from 1940 to 1945, it reached levels similar to the 1930s, when inflation was not a problem. The lesser reliance on “sterilisation” corresponds to the increased use of other methods by the BoP. Since only notes issued counted as contributing to inflation, the remaining sight liabilities (deposits by banks and the Government) counted as contributing to reduce inflation. Column D of Table II shows the notes issued, and column E the proportion of the non-note part of sight liabilities: between 1939 and 1945, deposits in the structure of the BoP’s sight liabilities passed from a proportion of 25% to one of almost 60%. Even if this practice was also inherited from the 1930s, the proportion was now much larger. The decline of “sterilisation” and the increase of deposit management were interconnected: since an increasing proportion of the BoP’s sight liabilities was in itself made of sterilising instruments, not following the rule could actually have had an effect opposite to the one the bank was trying to achieve.

The BoP did not need to be forceful in order for bank deposits to increase, as such an increase was an almost natural result of the “monetary plethora”, i.e. the influx of foreign exchange. No legal rule forced banks to sell the exchange to the BoP, but doing it was a rather rational approach. Most currencies were depreciating in real terms in relation to the escudo and were of little use thanks to the restrictions on imports. So, the escudo was in itself a good store of value. Accumulating liquid deposits in escudos at the BoP was thus natural, “in a market so inflated with availabilities which have such a limited field of use”, as the 1943 annual report noted (Bank of Portugal a, 1943, p. 23). The BoP followed a policy of “benign neglect”: in the 1941 annual report, the BoP noted how the “monetary plethora” had been translated in a “proportion of cash reserves [in commercial banks] [...] between 44% and 70% of demand deposits”. The BoP was satisfied with the choice made by the banks: “commercial banks [...] have kept a prudent attitude in what concerns credit distribution, not entering into risky financial ventures and always keeping a position of high liquidity" (Bank of Portugal, 1942, p. 21).

Figure 7 shows the structure of the BoP's sight liabilities. Although we can see that it was mostly bank reserves that grew in the war period, there was also some Government action. This action was mostly visible in the issuing of public debt: budget deficits appeared during the period, although of small size (Figure 8); this was against the general fiscal stance of the Government, but the situation should be understood as "contingent", having to do with exceptional wartime spending. The Government sterilised these deficits by issuing public bonds in excess of its needs (Leite, 1964). The amounts received by the Government in these operations were then deposited at the BoP, as Figure 7 shows. Authors such as Leite (1964) and Valério (org., 2010) attribute special importance to this instrument in the joint combat by the Government and the BoP against inflation in the period.

At the same time the BoP continued with the practice also coming from the 1930s of classifying significant amounts of gold and foreign exchange outside the reserve. Column F of Table II shows the amounts of gold and foreign exchange included in the official reserve as a proportion of the notes issued. In 1939 this reached the already high value of 70%; by the end of the war notes were more than fully backed by reserves (in an excess of 25% in 1946). But if we add up all of the BoP's holdings of gold and foreign exchange, independently of being classified in the reserve or not, the figures are extraordinary (column G in Table II): in 1939 they represented 89% of notes, in 1945 they represented 229%. Figure 2 also shows this evolution: the spectacular growth of gold and foreign exchange outside the reserve is clearly visible.

We can thus conclude with the then Minister of Finance that "the growth in money circulation" during the war was not due "to an expansion of credit distributed by the emitting institute [i.e. the BoP] in favour of either the Government or private entities"; on the contrary, the BoP saw its liquidity increase "in a manner unknown up to then [...], [but] rather than create purchasing power in an artificial way weighting over the market, it acted as a factor of immobilization”. As for the banks, they kept “large liquid funds in deposits” or made “important investment in credit titles – namely public bonds” (Leite, 1964, p. 9).

A most important effect of all these wartime conditions was to allow the BoP to change radically its balance sheet structure, finally breaking the shackles tying it to Government debt. Figure 7 illustrates this change in the war period: notes fell from a proportion of around 76% to one of around 43%, and banks’ deposits grew from around 18% to around 42% (as for Government’s deposits they grew from around 6% to around 15%, and the general public’s deposits kept a stable and residual share). The massive growth of banks’ deposits on the liabilities side of the BoP’s balance sheet can only be fully understood when put in perspective with the assets side of the same balance sheet (Figure 2): since credit to the Government, to the banks and to the public declined in proportional terms during the war, banks’ deposits acquired essentially the nature of banks’ reserves, as they did not represent the counterpart of credit operations. But this would never have been possible without the growth of the gold and foreign exchange holdings of the bank. Figure 2 shows that this process had already started in the 1930s, but that it took the war to change radically the picture.

The board of directors seems to have been well aware of what was going on. In a meeting on 18 February 1944, vice-governor Álvaro Pedro de Sousa noted the decline in the war years in the number of discount and rediscount operations and in their return. But he also noted how this had been more than compensated by the increase in other balance sheet items, particularly “interest from operations abroad and others in current account”. As Sousa explained in the same meeting, “this came from the use of a large amount of the bank’s availabilities in sterling operations (Treasury Bills and Money Employed [both corresponding to the operations conducted by the BoE for the benefit of the BoP, as established in the 1940 agreement])” (Bank of Portugal b, Book 111, 1944, p. 79v). In another meeting, on 11 August of the same year, Sousa remarked how “interest coming from [...] [discount and rediscount] shows a big reduction […], the main cause of it being the almost complete disappearance of rediscount and also the successive lowering of its interest rates. In what concerns the discount operations, the volume of discounted capital is almost the same as in 1936" (Bank of Portugal b, Book 112, 1944, p. 61). Still according to Sousa, in a meeting in 27 March 1945, this demonstrated the "marked atrophy of the [commercial] banking function of this institution" (Bank of Portugal b, Book 113, 1945, p. 61), as opposed to its central bank function.

4. The postwar period

The World War II period represented a structural break for the BoP. Thanks to its command over a considerably larger set of resources, its power was now much vaster. At the end of the war a complex set of issues put this power to test. On the one hand, the international payments conditions developed during the conflict could not continue. And between 1945 and 1948 they did deteriorate rapidly, thanks to the increase of imports and the decline of both exports and transfers. On the other hand, there was the larger problem of the implementation of the Bretton Woods monetary system. These two big problems were furthermore complicated by three additional questions: the first was the settling of the huge British debt developed during the war, the second, the set of international claims on the German gold Portugal had also received during the war, and the third the possibility of Portugal receiving Marshall aid. All three issues had a potentially serious impact on the country's external accounts and, consequently, on monetary policy. The larger resources under the BoP's command helped it sail through the new situation with a certain ease.

4.1 The immediate postwar years: external imbalance

Once the war was over the unusual position of the Portuguese balance of payments inverted rapidly. The Portuguese exports that had been in high demand during the war (especially wolfram) collapsed. Also, those goods that Portugal had not been able to import due to all kinds of restrictions (especially fuel and food) suddenly became available and abundant in the world market. These natural circumstances were, however, aggravated by the Government´s deliberate policy of using the reserves accumulated during World War II as well as the bilateral trade agreements inherited from the 1930s and the war, to promote a wave of low-priced massive imports, in order to crush the black market that was then widespread in the country (a policy explained in Rosas, 2000, and by the minister responsible for it himself: Barbosa, 1948 and 1949). The consequence was, immediately in 1947, the swelling of the trade deficit: in 1946 the deficit reached a still relatively normal level, consonant with the country's tradition (-5% of GDP), but in 1947 and 1948 it jumped to -11%. Transfers, despite being positive, also declined and could not cover the trade deficit (Figure 3).

The reserves accumulated during the war were put under pressure. Figure 2 shows a clear drop. The risk of deflation became real. In fact, the BoP anticipated it: the 1946 report stated that "the re-composition of stocks and the renovation and expansion of machinery and transport, which have been exhausted and eroded for six years, have already started to generate sizable deficits in our trade balance. […] These deficits will increase more because […] the progress of our economy demands it" (Bank of Portugal a, 1947, p. 26). The Government seems also to have anticipated the potential threat of deflation, something that explains why it changed the money emission rule in 1946: Decree-Law 35,575, of 3 April, established that the BoP's notes in circulation plus its other sight liabilities had to be backed in a proportion of 50% by gold and foreign exchange reserves, half of them in gold. The element of flexibility of the new rule came with the dropping of the additional condition present in the 1931 rule of fully backing with gold any amount of notes beyond 2,200 million escudos.

Although deflation was anticipated by the BoP, its size was not. The 1947 report noted how "monetary deflation" was inevitable and how it was "caused by the same factor that had generated [the previous] expansion – the balance of payments […]. But it was not expected […] to reach […] the approximate figure of 3 billion escudos, which represents a 14% reduction of the emission level of 1946" (Bank of Portugal a, 1948, p. 18). The BoP dealt with the situation through the same instruments used during the war: "sterilisation", i.e. the practice of keeping its sight liabilities at a level lower than the one which the existing emission rule would have allowed to, and composition of sight liabilities, i.e. the balancing between note issuing and deposits. Obviously, even if the operations were the same, the algebraic sign was now the opposite of the war period.

The amount of resources the bank had gathered during the war, both international reserves and banks' deposits, gave it much leeway in dealing with the situation, and the new, more flexible, emission rule also helped. The BoP used this rule almost to its limit: as Table II (Column C) shows, between 1946 and 1949, "sterilising" by the BoP became practically residual, so that by 1949 the difference between the actual sight liabilities of the bank and those permitted by the emission rule was of just 3%. In what concerns the composition of sight liabilities, many of the deposits held with the BoP by both the Government and the banks were depleted, something that allowed it to keep the amount of notes in circulation at a relatively high level. Column E shows how deposits passed from weighting about 60% of the BoP's sight liabilities in 1945 to about 30% in 1949, and Figure 7 illustrates clearly the process. As the 1946 report admitted, "the proportion between 'notes in circulation' and 'other sight liabilities' (which decreased so continuously after 1941) will increase" during the period of rebalancing of the balance of payments (Bank of Portugal a, 1947, pp. 27-28). For the first time since 1931 the BoP even considered the possibility of raising the discount rate in February 1948, as revealed in the minutes of the bank's Stabilisation Commission (Bank of Portugal c, Book 7, 1948, pp. 28-28 V.). In the end, the change never came (Figure 5) but the fact that the idea was put forth, against the traditional stance of the BoP, shows the concern with which the situation was considered. We can see in Table I that, despite the appearance of a negative inflation rate between 1946 and 1948, its value was marginal.

The Government played a role again in all of this process. The depletion of its deposits at the BoP corresponded to a few deficit years in its budget (Figure 8), even if of small size (2.9%

at its peak in 1947): the deposits accumulated during the war were used to expand spending. This shows again the increased coordination between Government and bank in the implementation of monetary policy.

The figures above do show the anti-deflationary efforts of the BoP, but they also reveal the caution with which this was done: the obvious concern was to keep a still high level of international reserves despite the strong pressure to erode them. No doubt “sterilisation” declined substantially, but the truth is that it nevertheless continued, in an environment that in principle would have recommended its full stopping; and the same goes for banks’ deposits, where there was still a large margin for the BoP to go. If we look into the position of international reserves as a proportion of notes, the bank continued functioning on a more than full-backing basis: when we account only for the gold and foreign currency included in the official reserve, they dropped from 125% in 1946 to 76% in 1949, which was still a high proportion by any account (Column F of Table II). But if we include all of the bank’s holdings of gold and foreign exchange (inside and outside the official reserve), the proportion was always kept above 100% (147% in 1949) (Column G).

This persistent abundance of reserves is certainly an explanation for why the Portuguese Government and the BoP did not feel the need to devalue the escudo despite the pressure coming from the drain on reserves. But the question of the escudo’s exchange rate should be inserted into the wider issue of the international monetary system to be adopted after the war.

The blueprint for such a system had been basically designed still during the war in the meeting held by the allied countries at Bretton Woods in July 1944. The resulting proposals led to a system Michael Bordo (1993) defined as “a weak variant of the gold standard” (p. 19). This should be a multilateral, full-convertibility system with fixed exchange rates, having the US dollar as its nominal anchor (rather than gold), which should keep its price of $35 per ounce of gold. The whole system was to be managed by an international fund (which became the International Monetary Fund, IMF, in 1945), dedicated to the monitoring of national policies and endowed with resources to help countries in trouble (for all of this in detail, Bordo, 1993, and Eichengreen, 1996).

Although this blueprint remained the ultimate objective to be achieved, the countries that committed to it verified soon how its immediate implementation was impossible, due to the problems inherited from the wartime period. Two major problems overwhelmed the various countries: the first was a string of bilateral agreements and of trade and exchange controls coming from the previous decades. Most countries soon realised they could not adopt multilateralism and full convertibility, mostly on account of an acute shortage of international reserves. And that was the second problem: two thirds of the world's gold reserves had accumulated in the US until 1945 (Bordo, 1993) and most of the countries did not have and could not acquire enough dollars to face the world market confidently. Most of the large European countries had overvalued currencies and developed large current account deficits. They needed dollars but had no means of obtaining them (Bordo, 1993, and Eichengreen, 1996).

The problems of the immediate postwar period became tragically clear in 1947, when the US and the UK decided on the return of sterling to convertibility in dollars: in a matter of weeks after the decision, the reserves at the BoE evaporated, especially gold and dollars, and the experience was immediately interrupted. It became obvious that sterling was highly overvalued and that it could not become a reference for the system (Eichengreen, 1996). If overvaluation was true of sterling it was true also of most other currencies, with the exception of those of neutral countries (such as Portugal, Switzerland or Sweden). The beginning of relief came with the Marshall Plan in 1948, followed by the 1949 devaluations of most European currencies (Bordo, 1993, and Eichengreen, 1996).

Portugal was in a relatively comfortable position in this context, although facing some serious uncertainties. The Portuguese authorities decided not to participate in the foundation of the IMF. The reasons for it have yet to be understood, but, as Valério (org., 2010, p. 97) remarked: "the generality of the European members of the fund were […] [then] much farther from complying with the ideal rules of the organisation than Portugal”. The country was in a position not too dissimilar to that of the US: sitting on a heap of international reserves, it did not have the kind of shortage plaguing most other European countries. The composition of those reserves was, however, problematic, as they were essentially constituted of sterling: Figure 5, which shows the composition of the foreign exchange reserves at the BoP, reveals the massive gap between the American and the British currencies. In a context of exchange inconvertibility, bilateral trade agreements, increased weakness of sterling and strength of the US dollar, this was a reason for concern. As the then Minister of the Economy put it: “a most important part of our imports are made in the area of the strong currency [the US dollar,] […] [something that] would have not been a problem some time ago, due to exchange convertibility; but now the issue becomes extremely complex […], as many of our traditional buyers are precisely located in the weak currency zone”, i.e. sterling (Barbosa, 1949). Bilateral trade and currency inconvertibility meant that exchanges in one currency area could not be settled with exchanges in another. As it was said in the BoP’s annual report for 1947, “today’s world […] is divided in isolated compartments, in monetary blocks, in which currency convertibility is not possible” (Bank of Portugal a, 1948, p. 27).

Portugal had, thus, a vested interest in the return of sterling not only to convertibility but to a reference position as a valuable reserve currency too. A new agreement on the BoP´s sterling balances had been reached at the end of the war, in August 1945. Alleging payment difficulties, the BoE asked the BoP to delay the settlement of the debt, something the BoP accepted: payments would only start ten years after the end of the war, rather than the five years agreed in 1940, and for a period of twenty years (i.e. from 1955 to 1975), with yearly instalments. The BoP also agreed to partially give up the “gold guarantee” of the 1940 agreement. Consequently, two accounts were then created at the BoE in the BoP’s name, an account A where 15 million pounds were deposited for immediate acquisition of “capital goods” in Britain, and an account B with the remaining 61 million to be repaid in gold from 1955 onwards (for details on this agreement, Telo, 2000, and Abreu, 2014). The agreement would be revised in April 1946 and October 1947, as Portugal soon exhausted the entire amount outside the "gold guarantee" (Bank of Portugal c, 1946-1948).

Despite this agreement, there is no doubt that Portugal had inherited a "sterling problem" from the war. And its consequences became immediately clear in July-August 1947, in the sequence of the failed return of sterling to convertibility. The BoP, in its 1947 annual report, explained the difficulties arising from that failure: "countries such as Portugal had practically to acquire almost all of their imports in dollars but [did] not receive […] equal treatment on their exports" (Bank of Portugal a, 1948, p. 30). As a consequence, dollars drained whilst devalued amounts of sterling continued to be excessive (Figure 5). In reaction to this, the Portuguese Government introduced exchange controls together with a system of import pre-registration.

It is in this context that Portugal's reaction to the Marshall Plan must be inserted. The first thing to understand in this respect is that, contrary to most European countries, Portugal was not starved of reserves. Thus, as Macedo (1977, p. 305) puts it, "whereas for the belligerents the purpose of aid was basically reconstruction", for Portugal it had a completely different meaning: it should be understood as a possible "stimulus […] [to] economic development". Portugal needed reserves of a specific kind, not reserves in general. In fact, more reserves would introduce inflationary pressures (Macedo, 1977). But what Portugal needed most was the return to multilateral trade and currency convertibility, in order to freely use its accumulated reserves. As the original scheme of the Marshall Plan involved a set of bilateral agreements with the US, Portugal decided to reject it in a first instance (in January 1948), although participating in all institutions related to it, including the Organisation for European Economic Cooperation (OEEC) (Rollo, 1994 and 2007, and Pereira, 2002). In an eleventh-hour effort to accept it, Portugal still tried to negotiate with the US the conversion of the sterling balances into dollars, but the US rejected the proposal (Rollo, 1994).

All of this was furthermore complicated by the question of the gold shipped to Portugal during the war and in relation to which there were restitution claims. Since the creation of the Tripartite Gold Commission (TGC, coordinated by Britain, France and the US) in 1946, devoted to the restitution of the gold "illegitimately" acquired by Germany during the war, Portugal was at risk of having to return most of the gold it had received since 1942. The TGC argued that the largest part of that gold had been looted by Germany and that, consequently, had to be given back to the affected countries. Portugal reacted essentially by saying 1) that the gold had been acquired by the country as payment for legitimate trade, 2) that the Portuguese authorities ignored the first origin of the gold and 3) that, in fact, Portugal had never received any gold from Germany (which was true, since all German payments had been made through the Swiss National Bank). The issue would only be settled in 1958, on terms generally favourable to Portugal (on all of the process, see Leite, 1999, and Telo, 2000). But what matters here is that for more than a decade the threat impended over the BoP of having to return a large amount of its gold reserves, something that would have had inevitable consequences for monetary policy.

4.2 Back to balance and cruise speed: the Korean War and the 1950s

Between 1948 and 1950 this complex and distressing set of problems was progressively solved. First of all, there were various efforts at the international level to reinstitute convertibility of current account transactions (trade and transfers). After some incipient agreements, a new organisation was created in 1950 allowing for increased ease of international payments, the European Payments Union (EPU). EPU functioned as a clearing house, settling payments for current account transaction purposes made in different currencies: at the end of each month members would clear with the union their creditor or debtor positions, using the US dollar as the unit of account, and would be paid either in gold or dollars (Bordo, 1993, and Eichengreen, 1996). The creation of EPU was preceded by a series of currency depreciations, the most important of which that of sterling, which depreciated 30.5% in relation to the dollar (followed by the Dutch forint, 30.1%, the Belgian franc, 12.3%, the lira, 63.9%, the French franc, 38.7%, after a continuous depreciation of 66% between 1945 and 1948, and the Deutsche Mark, 20.7%, after a 93% depreciation in 1948) (Nabudere, 2009, see also Figure 4). The combination of depreciation with ease of payments improved considerably the international payments position of the European countries.

In 1949 the Portuguese authorities had, thus, to take again an important decision concerning the escudo's exchange rate. In the end the Government decided, following the BoP's advice, to revalue the escudo by 25% in relation to the pound, which implied a depreciation of about 15% in relation to the dollar. A new peg of 1 dollar = 28.75 escudos was, thus, established (Figure 4). In this decision a combination between preserving the external value of the escudo (by appreciating in relation to sterling) and competitiveness (by depreciating in relation to the dollar) was again present (as on previous occasions, see sections 1 and 2). In a telegram sent to the BoP and reproduced in the minutes of the Stabilisation Commission, the Minister of Finance explained that the decision had in mind the purpose of "not increasing the cost of essential [imported] […] goods […] as well as […] diminishing certain export costs, and reinforcing the defence against superfluous or excessive imports" (Bank of Portugal c, Book 8, 1949, p. 72 v.). These were the exchange rates with which the escudo became fully convertible ten years later, together with the other European currencies, when the European Monetary Agreement started operating (Bordo, 1993).

EPU, which was to last for only two years, remained active until 1958, thus revealing the difficulties shown by these countries to return to full convertibility and multilateral payments. Portugal joined EPU at its creation in 1950 with a debtor position calculated on the basis of the values of its 1948 balance of payments (Xavier, 1970). But the Portuguese position had started changing in 1949, mostly due to the end of the import programme of the previous two years (Leite, 1964) (Figure 3). Then, in 1950, a new event would improve even more the Portuguese situation: the outbreak of the Korean War. For the three years of the duration of the war there was a new demand boom for Portuguese wolfram as well as for some raw materials produced in the colonies (Nunes, 2010). Additionally, Portugal started receiving Marshall aid, once it acquired a more multilateral nature (Xavier, 1970), even if the amounts were rather small (Rollo, 1994). The fact is that soon the payments position of the country returned to balance (Figure 3). The expectation when Portugal joined EPU was that it would continue facing an international payments deficit, but quite early in the life of the organisation the country acquired a creditor position (Xavier, 1970). Already by March 1951 the BoP felt the need to warn the Government on how the pace of "growth of our creditor balance over the European Payments Union makes us think that by the end of the current month Portugal must have reached the totality of its quota in that organisation" (Bank of Portugal c, Book 10, 1951, p. 13). With the end of the Korean War the influx of payments into Portugal slowed down, but this did not mean the return to a debtor position. From then on Portugal acquired an international payments pattern that would last for the next two decades: a trade deficit of about -5% of GDP, more than compensated by transfers, which, incidentally, were then on the rise, thanks to the growth of emigration. Portugal's balance of payments position was very comfortable throughout the 1950s. After the 1947-1948 depletion, the BoP was able to re-compose its reserves in the early-1950s and keep them at a high level for the rest of the decade (Figure 2).

The BoP continued using the same policy instruments identified above in order to implement its "mandate". When the balance of payments improved after 1950 and foreign international reserves flowed in again, inflationary pressures returned. As a response, the BoP increased "sterilisation": as we can see in Columns C of Table II, the proportion of potential emission to actual emission passed from 3% in 1949 to 7% in 1953. But during this period there was never a return to previous levels, as clearly the BoP continued attributing a secondary role to "sterilisation" in order to "manage money". The contrary happened with the distribution between notes in circulation and deposits by the Government and the banks. The proportion of deposits in the structure of the BoP's sight liabilities jumped from 30% to about 50% in the 1950-

1953 period. From then on until the end of the decade the BoP entered into something like "cruise speed": the comfortable position of the balance of payments was managed by it by holding a high proportion of banks deposits. Figure 7 shows how a new structural balance was found by the BoP in the 1950s between notes and deposits: the importance of notes passed to range between 50% and 60% of sight liabilities and that of banks between 30% and 40%. The origin of this new situation must be found in the wartime period, as we have seen above.

An essential contribution to the success of this policy was the quick return to budget balance once the deflationary context passed (Figure 8). Besides showing the increased coordination between the Government and the BoP, this also reveals a much higher fiscal flexibility than is normally attributed to the Portuguese Government of the time, although inserted in a long run stance of balance: fiscal deficits were accepted, although only in very special circumstances. Once those circumstances had passed, balance should return and become the norm. The lack of electoral pressure for the Government to increase public spending helped it keep this stance.

5. Testing the Bank of Portugal's decision making

The material gathered in this paper suggests that the BoP followed a certain decision-making process in order to implement its "mandate" of keeping monetary stability. The first thing to note is that the BoP seems to have been reasonably successful in this respect. If we compare inflation rates in Portugal to those in other countries, we can see that they were indeed maintained at low levels, even in periods of high pressure, such as World War II (Table I). As for the decision making process allowing for this success, we can put it verbally thus:

The BoP accepted the basic tenet of the 1931 and 1946 money emission rules: sight liabilities should move in accordance with the flow of international reserves. As this flow could produce inflationary pressure at some times and deflationary pressure at other times, the BoP compensated for them through two basic "money management" instruments: "sterilisation", i.e. the practice of keeping emission below the potential allowed by the existing emission rule, and composition of sight liabilities, varying (depending on the context) between notes issued and deposits by banks and the Government. During the war, the BoP seems to have realised that "sterilisation" was not as effective an instrument as sight liabilities' composition, and started using preferably the latter to "manage money". The managing of the exchange rate at critical times, namely in moments of "excessive" depreciation of reference currencies (in particular sterling) seems also to have been used for similar purposes.

This suggests a formal statistical model which can be presented thus:

$$lnPRICE_t = \alpha_t + \beta_1 lnRES_t + \beta_2 lnSTER_t + \beta_3 lnBANK_t + \beta_4 lnGOV_t + \beta_5 lnEXCH_t + \beta_6 lnDISC_t + \varepsilon_t$$

where $PRICE$ is the price index-number the BoP monitored in order to observe price movements, RES is the international reserves held by the BoP, $STER$ is sterilisation as defined above, $BANK$ corresponds to the deposits made by banks at the BoP, GOV corresponds to the deposits made by the Government at the BoP, $EXCH$ is the average exchange rate of the escudo in relation to both sterling and the US dollar, $DISC$ is the BoP's rediscount rate in Lisbon and Porto, and ε is an error term.

In the implementation of this model we use monthly data for the period between 1938 and 1960. The variables RES, $STER$, $BANK$, GOV and $EXCH$ were suggested by the descriptive analysis above. In reality, $BANK$, GOV and $EXCH$ are standard monetary policy instruments of central banks, only they were not supposed to have been used by the BoP thanks to the rules it was subject to. $DISC$ is also a standard central bank instrument. It was not possible to find monthly data for the 1931-1937 period. This is the reason why we restricted the test to the 1938-1960 years. Data for the price index-numbers were obtained in INE (1938-1960) and are a simple arithmetic average between the retail and wholesale indices presented in the source.

Data for sterilisation correspond to the amount the BoP decided not to translate into sight liabilities even if its holding of international reserves would have allowed it to – the figures correspond to the difference between potential emission and actual emission. The data for the remaining variables were obtained in the annual reports of the BoP. The test was implemented through an OLS regression in levels.

Table III presents the summary statistics and Table IV the results. All variables are significant. The signs tell us the following story: gold and foreign exchange (RES) explain the behaviour of the price index, together with bank reserves ($BANK$) and the exchange rate ($EXCH$) (remember that the exchange rate is here defined in terms of the escudo's purchasing power: a decline in the series means a revaluation of the escudo). Sterilisation ($STER$) affected negatively the price index, showing the increasingly lesser relevance attributed to it by the BoP, in contrast with bank reserves. Government deposits (GOV) also had a negative impact on the price level, something that goes counter the importance attributed to it by Leite (1964) and Valério (org., 2010) but that can be explained by the fact that its use during the war and the immediate post-war years was not enough to compensate for an inverse behaviour in the rest of the period. The discount rate also had a negative impact on the price level, confirming the picture presented above: the BoP preferred to let the abundance of reserves be reflected in the lowering of the discount rate rather than use it as a counter-cyclical instrument to moderate inflation.

The purpose of this very simple statistical test is to summarise in a quantitative way the main conclusions of our paper: despite not having been designed to do so, the BoP ended up by being quite active in "money management", basically in order to implement its "mandate" of keeping monetary stability. The instruments for that were mostly the management of deposits by banks at the BoP and the exchange rate. "Sterilisation" gave a negative contribution, as the BoP substituted it precisely with bank deposits as its preferred "money management" instrument. The same happened with Government deposits and the discount rate. "Money management" of this sort would not have been possible, however, without the massive accumulation of gold and foreign exchange during the war.

Conclusion

The World War II period corresponded to a structural break in Portuguese monetary and banking history. Financial depth converged to levels typical of countries with more structured financial systems, and the BoP started to lose the features of a commercial bank that had some central bank functions and approached those typical of a true central bank. The source of this vast transformation was the influx of international means of payment resulting from neutrality during the war.

Although having been reformed in 1931 to behave as a central bank inserted in the gold standard, the BoP adapted quite well to the new world of discretion and Government interference, when the gold standard collapsed. It did so, however, in a relatively original way, namely by keeping certain features of a central bank still committed to gold standard principles.

Bibliography

Abreu, Marcelo de Paiva (2014), "A'Blank cheque'? Portuguese Second World War Sterling Balances, 1940-73", *Economic History Review*, 67, 2, pp. 535-555.

Bank of England, "Three Centuries of Macroeconomic Data", in http://www.bankofengland.co.uk/research/Pages/onebank/threecenturies.aspx

Bank of Portugal a (1932-1961), *Annual Report*, Lisbon, Bank of Portugal.

Bank of Portugal b (1939-1960), *Actas do Conselho de Administração do Banco de Portugal* (*Minutes of the Board of Directors of the Bank of Portugal*), Bank of Portugal Historical Archive, Livros 102-114, BP.CA.

Bank of Portugal c (1939-1960), *Actas da Comissão de Estabilização do Banco de Portugal* (*Minutes of the Stabilization Commission of the Bank of Portugal*), Bank of Portugal Historical Archive, Livros 3-15, BP.CE.

Bank of Portugal d (1937-1941), *Relatórios da Contabilidade Geral (General Accounts Reports)*, Bank of Portugal Historical Archive,

Bank of Portugal e (1943-1960), *Processos de Situações Peródicas (Periodical Situations Processes)*, Bank of Portugal Historical Archive,

BARBOSA, Daniel Maria Vieira (1948), *Na pasta da Economia: Discursos, Declarações e Súmulas das Conferências com a Imprensa*, Lisboa, Portugália.

Idem (1949), *Alguns Aspectos da Economia Portuguesa*, Porto, Livraria Lello & Irmão.

Batista, Dina *et al.* (1997), *New Estimates for Portugal's GDP: 1910-1958*, Lisbon, Bank of Portugal.

Bordo, Michael (1993), "The Gold Standard, Bretton Woods and other Monetary Regimes: An Historical Appraisal", *National Bureau of Economic Research Working Papers*, nº 4310, April.

Bureau of Economic Analysis, http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=

9&step=3&isuri=1&904=1931&903=5&906=a&905=1950&910=x&911=0

Capie, Forrest and Alan Webber (1985), *A Monetary History of the United Kingdom, 1870-1982, Vol. I, Data, Sources, Methods*, London, Routledge.

Capie, Forrest, Charles Goodhart and Norbert Schnadt (1994), "The Development of Central Banking", in *The Future of Central Banking: the Tercentenary Symposium of the Bank of England*, Cambridge, Cambridge University Press.

Edvinsson, Rodney (2014), "The Gross Domestic Product of Sweden within Present Borders, 1620-2012", in Rodney Edvinsson, Tor Jacobson and Daniel Wldenström (eds.), *Historical Monetary and Financial Statistics for Sweden, Vol. II : House Prices, Stock Returns, National Accounts and the Riksbank Blance Sheet, 1620-2012*, Stockholm, Ekerlids Förlag/Sveriges Riksbank, pp. 101-182

Edvinsson, Rodney and Angus Ögren (2014), "Swedish Money Supply, 1620-2012", in Rodney Edvinsson, Tor Jacobson and Daniel Wldenström (eds.), *Historical Monetary and Financial Statistics for Sweden, Vol. II : House Prices, Stock Returns, National Accounts and the Riksbank Balance Sheet, 1620-2012*, Stockholm, Ekerlids Förlag/Sveriges Riksbank, pp. 293-338.

Eichengreen, Barry (1996), *Globalizing Capital: A History of the International Monetary System*, Princeton, Princeton University Press.

Friedman, Milton and Anna Jacobson Schwartz (1963), *A Monetary History of the United States, 1867-1960*, New York, National Bureau of Economic Research.

Goodhart, Charles (2010), "The Changing Role of Central Banks", *Bank for International Settlements Working Paper*, nº 326, November.

Hirsch, Fred and Peter Oppenheimer (1976), "The Trial of Managed Money: Currency, Credit and Prices 1920-1970", in Carlo M. Cipolla (ed.), *The Fontana Economic History of Europe, The Twentieth Century – 2*, Glasgow, Collins/Fontana Books, pp. 603-697.

INE (Instituto Nacional de Estatística) (1931-1960), *Anuário Estatístico*, Lisbon, INE.

Idem (2001), *Portuguese Historical Statistics*, Lisbon, INE.

Leite (Lumbrales), João Pinto da Costa (1964), *Problemas Monetários do Após-Guerra*, Lisboa, Ciência e Técnica Fiscal.

Leite, Joaquim da Costa (1999), *Relatório da Comissão de Investigação sobre as Transacções de Ouro Efectuadas entre as Autoridades Portuguesas e Alemãs durante o Período compreendido entre 1936 e 1945*, Lisbon, manuscript.

Louçã, António (2000), *Hitler e Salazar, Comércio em Tempos de Guerra, 1940-1944*, Lisbon, Terramar.

Macedo, Jorge Braga de (1977), *Interdependência Económica, Sistema Monetário Internacional e Integração Portuguesa*, Lisbon, Banco de Fomento Nacional.

Martín Aceña, Pablo and Maria Ángeles Pons, "Sistema monetário y financiero", in Xavier Tafunell Sambola and Albert Carreras i Odriozola (coord.), *Estadísticas Históricas de España, Siglos XIX-XX, Vol. 2*, Bilbao, Fundación BBVA, pp. 645-706.

Milgram, Avraham (2010), *Portugal, Salazar e os Judeus*, Lisbon, Gradiva.

Nabudere, Dani Wadada (2009), *The Crash of International Finance-Capital and Its Implications for the Thirld World*, Cape Town, Dakar, Nairobi, and Oxford.

Nunes, João Paulo Avelãs (2010), *O Estado Novo e o Volfrâmio (1933-1947)*, Coimbra, Imprensa da Universidade de Coimbra.

Pereira, Pedro Cantinho (2002), *Le Portugal et l'Europe, 1947-1953*, PhD thesis at Université Sorbonne-Panthéon, Paris.

Pimentel, Irene Flunser (2006), *Judeus em Portugal durante a II Guerra Mundial, Em Fuga de Hitler e do Holocausto*, Lisbon, Esfera dos Livros.

Prados de la Escosura, Leandro (2003), *El Progresso Económico de Espana (1850-2000)*, Bilbao, Fundacion BBVA.

Reis, Jaime (1995), "Portuguese Banking in the Inter-war Period", in Charles H. Feinstein (ed.), *Banking, Currency and Finance in Europe Between the Wars*, Oxford, Oxford University Press.

Idem (1999), "The Bank of Portugal's First Century: From 1846 to the Second World War", in Holtferich, Carl-L., Jaime Reis and Gianni Toniolo (eds.), *The Emergence of Modern Central Banking from 1918 to the Present*, Aldershot, Ashgate, pp. 144-160.

Rollo, Maria Fernanda (1994), *Portugal e o Plano Marshall. Da Rejeição à Solicitação da Ajuda Norte- Americana (1947-1952),* Lisbon, Editorial Estampa.

Idem (2007), *Portugal e a Reconstrução Económica do Pós-Guerra : o Plano Marshall e a Economia Portuguesa dos Anos 50*, Lisbon, Instituto Diplomático do Ministério dos Negócios Estrangeiros.

Rosas, Fernando (1994), *Portugal entre a Paz e a Guerra, Estudo do Impacte da II Guerra Mundial na Economia e na Sociedade Portuguesas*, Lisbon, Editorial Estampa.

Idem (2000), "Daniel Barbosa e a política de estabilização económica e social do pós-guerra", in *Salazarismo e Fomento Económico. O Primado do Político na História Económica do Estado Novo*, Lisbon, Editorial Notícias.

Salazar, António de Oliveira, "O Ágio do Ouro. Sua Natureza e suas Causas (1891-1915)", in *Inéditos e Dispersos – II, Estudos Económico-Financeiros (1916-1928)*, Lisbon, Bertrand Editora.

Silva, Álvaro Ferreira da and Luciano Amaral (2011), "A economia portuguesa na I República", in *Outubro: a Revolução Republicana em Portugal (1910-1926)*, Lisbon, Edições 70.

Silva, Fernando Emídio da (1971), *Os Meus Primeiros Anos ao Serviço do Banco Emissor. O Ambiente São que Permitiu Enfrentar os Tempos Difíceis*, Lisbon, Bank of Portugal.

Singleton, John (2011), *Central Banking in the Twentieth Century*, Cambridge, Cambridge University Press.

Telo, António José (2000), *A Neutralidade Portuguesa e o Ouro Nazi*, Lisbon, Quetzal.

Valério, Nuno (1996), "O Banco de Portugal, banco central privado, 1931-1974", AAVV, *Ensaios em Homenagem a Manuel Jacinto Nunes*, Lisbon, ISEG, pp. 425-455.

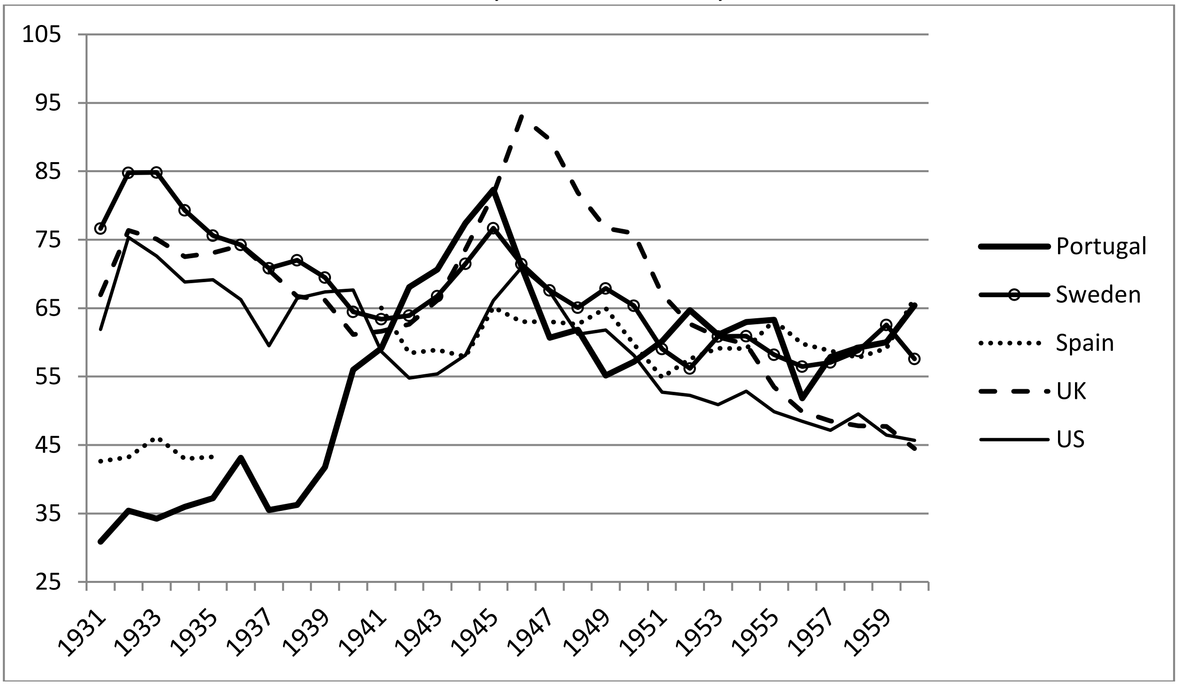
Idem (2005), *The Portuguese Capital Market during World War II*, Lisbon GHES Working Paper nº 25.

Idem (org.) (2010), *História do Sistema Bancário Português, Vol. II, Da Assunção pelo Banco de Portugal das Funções de Banco Central à União Monetária Europeia, 1931-1998*, Lisbon, Banco de Portugal.

Wallich, Henry C. (1951), *The Financial System of Portugal*, Lisbon, Banco de Portugal.

Xavier, Alberto (1970), *Portugal e a Integração Económica Europeia*, Coimbra, Livraria Almedina.

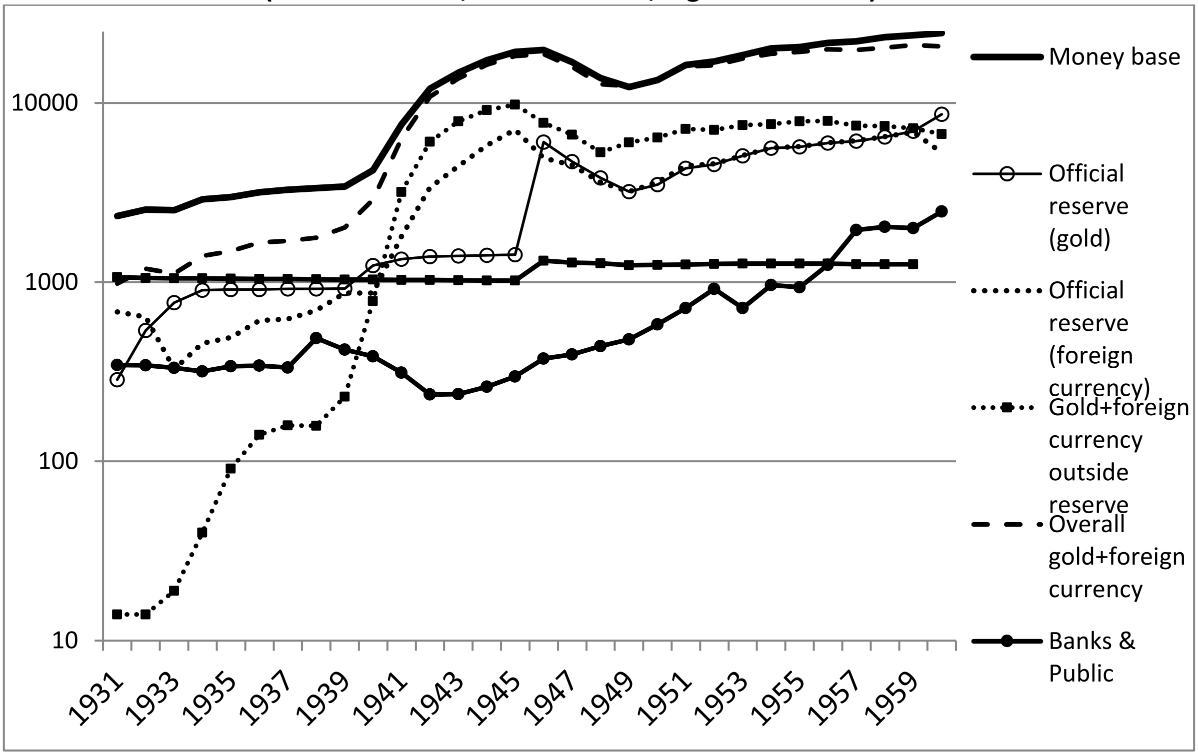
Figure 1
M2 as a % of GDP, various countries, 1931-1960



Source: own calculations, using the following sources: Spain – money supply: Aceña and Pons (2005); GDP: Prados (2003); Sweden – money supply: Edvinsson and Ögren (2014); GDP: Edvinsson (2014); UK – money supply: Capie and Webber (1985); GDP: Bank of England; US – money supply: Friedman and Schwartz (1963); GDP: Bureau of Economic Analysis; Portugal – money supply: Valério (1984), Bank of Portugal (1932-1961) and INE (1931-1960); GDP: 1931-1953: Batista *et al*. (1997); 1953-1960: Pinheiro *et al.* (1997)

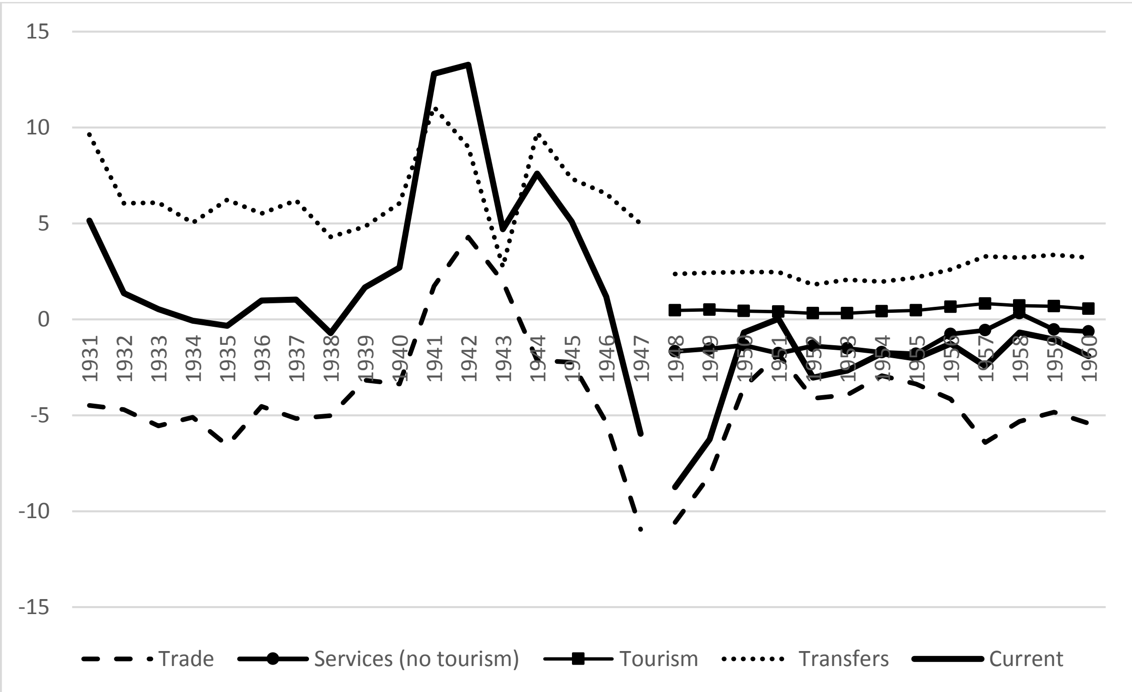
Note: the figures correspond to M3 in Sweden and the UK, but there is no inconsistency with M2, since in the data for those countries only currency, demand deposits and time deposits were counted in the period under consideration

Figure 2
Money base components, Portugal, 1931-1960
(million escudos, current values, logarithmic scale)



Source: Bank of Portugal a (1932-1961)

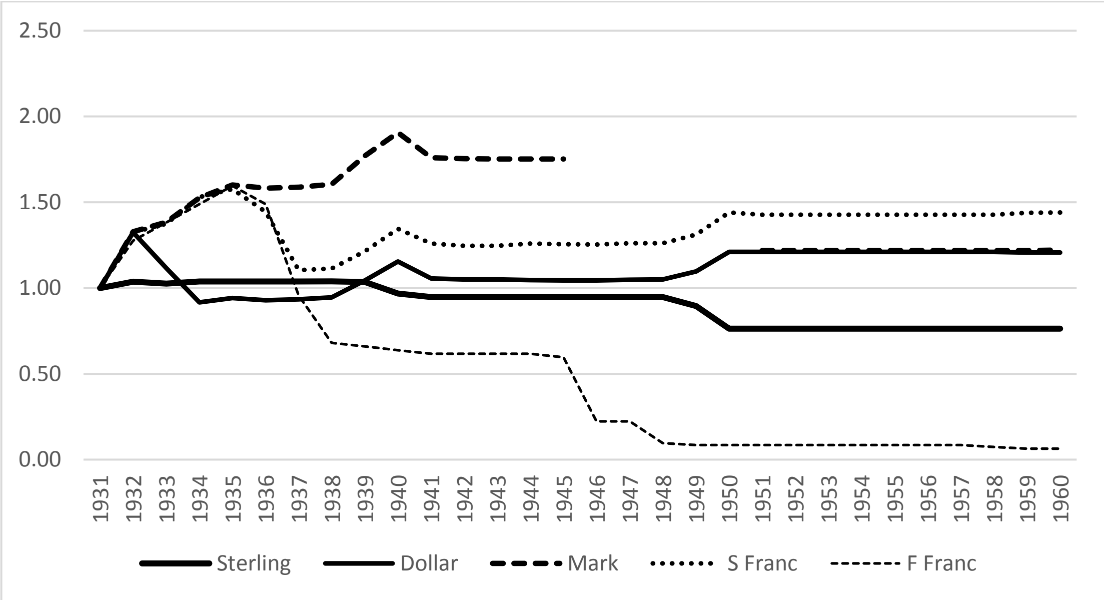
Figure 3
International current account, Portugal, 1931-1960 (% of GDP)



Source: 1931-1947 : current acount – INE (2001); GDP – Batista *et al.* (1997); 1948-1960: Pinheiro (1997)
Note: the items of the current account covered in the two sources are different, being much more complete in the second; we have preferred to plot all the information even if the match between the two series is far from perfect

Figure 4

Index of the exchange rate of the escudo versus main currencies, 1931-1960 (1939 = 1)



Source: same as Figure 2

Note: the exchanges rates are defined as 1 unit of the foreign currency = x escudos

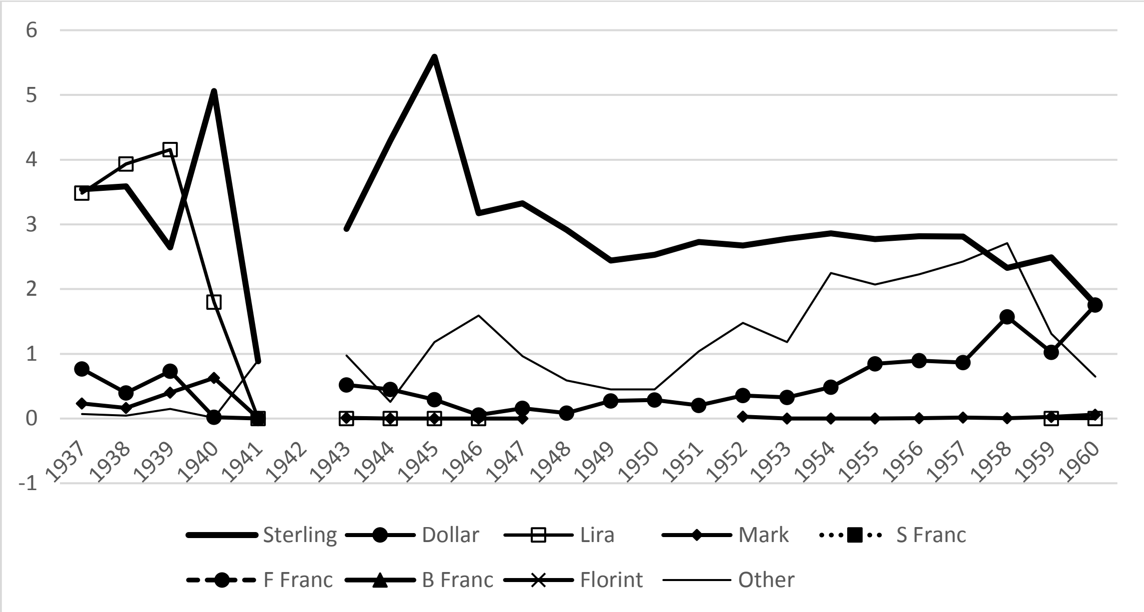
Table I

Annual inflation rates, various countries, 1931-1960 (%)

	1931-1938	1939-1945	1946-1948	1949-1953	1954-1960
Portugal	0.36	8.34	-0.23	3.16	1.81
France	4.42	21.66	59.13	9.65	2.02
Sweden	1.48	7.27	3.09	6.44	1.85
Switzerland	-0.72	8.76	1.99	0.28	0.25
UK	1.33	5.67	5.61	6.43	0.97
US	-0.34	3.92	11.76	1.86	1.2

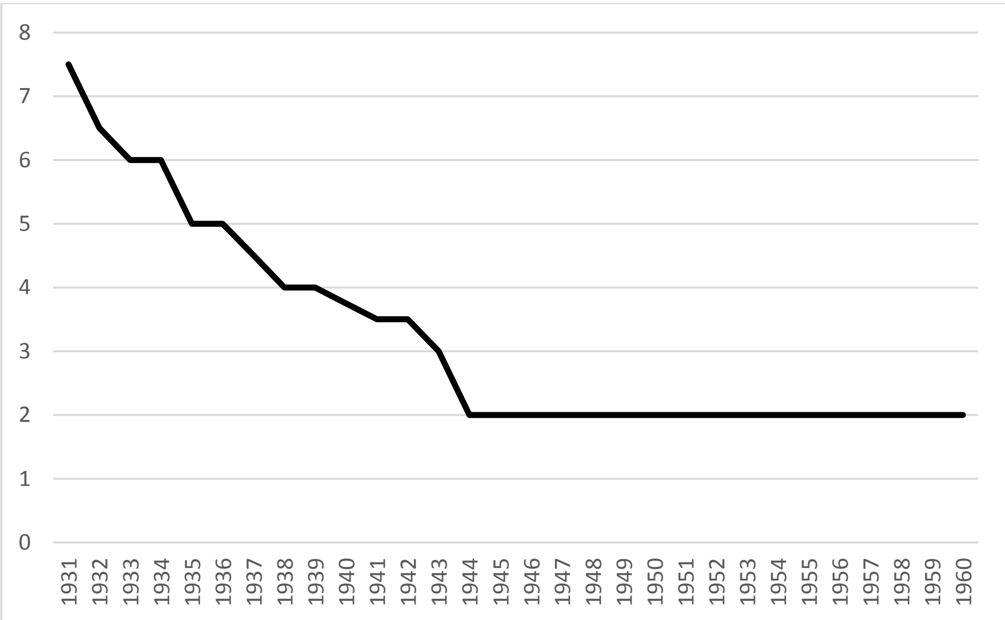
Sources: author's estimations based on the index-numbers provided in INE (2001), for Portugal, and Mitchell (2013), for the remaining countries

Figure 5
Composition of foreign exchange reserves at the Bank of Portugal, 1931-1960 (million escudos)



Source: Bank of Portugal d (1937-1941) and Bank of Portugal e (1943-1960)
Note: 1937 to 1941 include only exchange held at the official reserve; 1943 to 1960 include all exchange, inside and outside the official reserve – the second series is more reliable

Figure 6
Bank of Portugal rediscount rate, 1931-1960 (%)



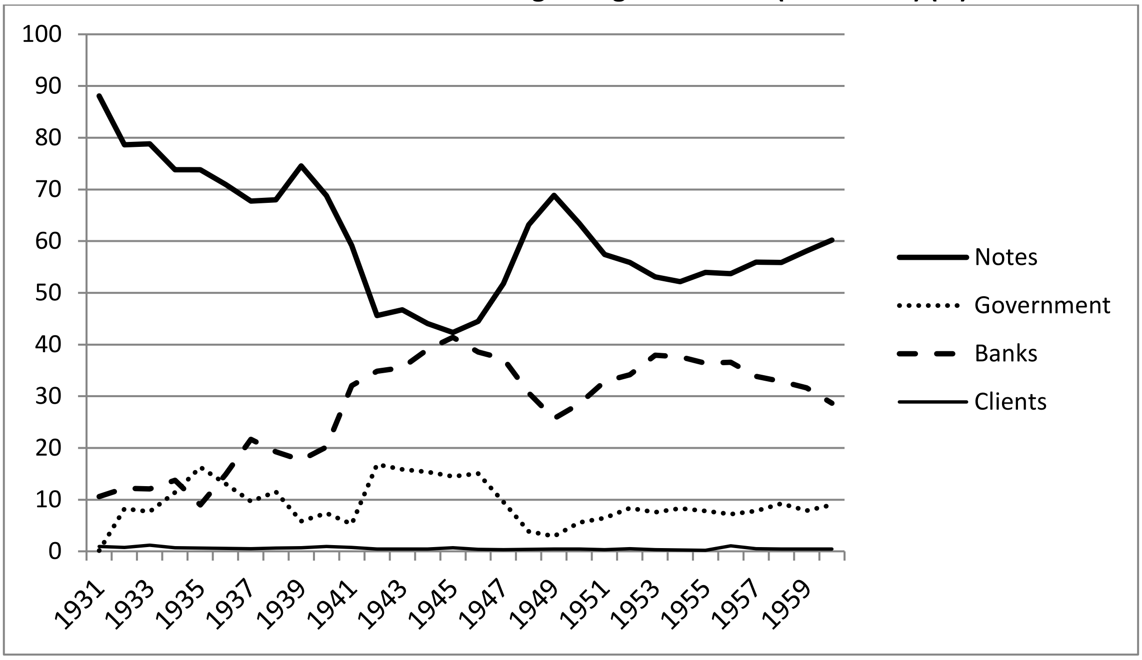
Source: same as Figure 2
Note: this is the rediscount rate in Lisbon and Porto; in smaller cities the rate was slightly higher

Table II
Sight liabilities and reserves at the Bank of Portugal, 1931-1960

	Sight liabilities (million escudos) (A)	Sight liabilities if rule followed (million escudos) (B)	Sterilisation (B minus A as % of A) (C)	Notes (million escudos) (D)	Other sight liabilities as a % of total (A minus D as % of A) (E)	Official reserve as a % of notes (F)	Overall holding of gold and foreign exchange as % of notes (G)
1931	2340	2606	11.37	2061	11.92	46.97	63.17
1932	2545	2959	16.25	2001	21.38	58.82	75.66
1933	2523	2863	13.48	1989	21.17	55.15	68.38
1934	2895	3386	16.94	2137	26.18	63.59	77.82
1935	2987	3492	16.90	2205	26.18	63.54	79.68
1936	3181	3750	17.88	2257	29.05	67.48	86.75
1937	3282	3838	16.95	2224	32.24	69.29	89.16
1938	3349	3959	18.22	2278	31.98	70.90	89.82
1939	3420	4183	22.31	2550	25.44	70.16	88.67
1940	4221	5063	19.94	2903	31.22	72.61	110.71
1941	7587	8452	11.40	4488	40.85	69.99	148.86
1942	12018	13182	9.68	5481	54.39	87.01	204.85
1943	14796	16197	9.47	6910	53.30	84.52	204.36
1944	17355	19380	11.67	7642	55.97	94.62	219.17
1945	19291	22022	14.16	8166	57.67	104.31	229.19
1946	19754	21941	11.07	8793	55.49	124.66	212.71
1947	16910	18168	7.44	8752	48.24	105.37	181.40
1948	13767	14699	6.77	8696	36.83	85.44	146.44
1949	12276	12684	3.32	8456	31.12	75.82	147.19
1950	13442	13987	4.05	8526	36.57	83.56	158.80
1951	16308	17204	5.49	9362	42.59	94.00	170.54
1952	17057	17930	5.12	9528	44.14	95.71	170.04
1953	18548	19872	7.14	9842	46.94	103.29	179.78
1954	20166	21857	8.38	10513	47.87	106.67	179.22
1955	20531	22209	8.17	11075	46.06	102.90	174.30
1956	21668	23385	7.92	11636	46.30	102.96	171.14
1957	22096	23905	8.19	12365	44.04	99.19	159.64
1958	23255	25207	8.39	12990	44.14	99.59	156.81
1959	23883	26796	12.20	13877	41.90	99.82	151.81
1960	24554	28724	16.98	14781	39.80	94.28	139.67

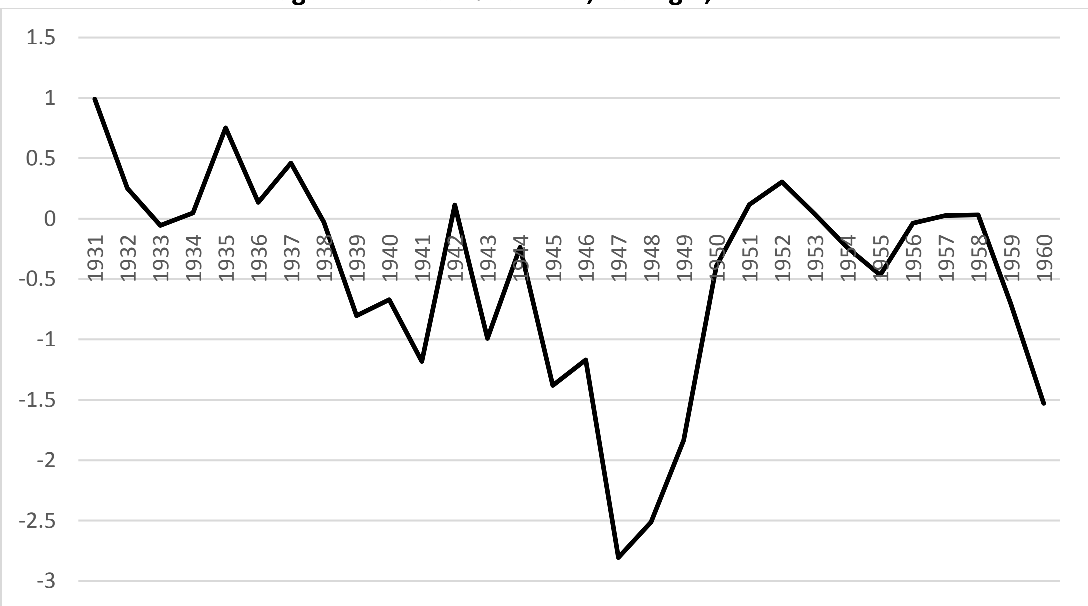
Source: own calculations based on Bank of Portugal a (1932-1961)

Figure 7
Structure of the Bank of Portugal's sight liabilities (1931-1960) (%)



Source: same as Figure 2

Figure 8
Budget deficit as a % of GDP, Portugal, 1931-1960



Source: INE (2001)

Table III
Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
PRICES	276	94.2934	21.61626	45.02697	115.85
RES	276	7896.547	3798.269	1277	13936
BANKS	276	5269.011	2460.956	502	8410
GOV	276	1429.337	909.2631	38	3359
EXCH	276	59.38351	4.602801	54.75	68.95
DISC	276	2.464674	.842815	2	4.5

Table IV
Results for statistical test

PRICES	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
RES	.2793868	.0274196	10.19	0.000	.2254026	.3333711
STER	-.0990777	.0107129	-9.25	0.000	-.1201695	-.0779858
BANKS	.0717837	.0127493	5.63	0.000	.0466826	.0968847
GOV	-.0277018	.0041916	-6.61	0.000	-.0359542	-.0194493
EXCH	-.2910591	.0676515	-4.30	0.000	-.4242529	-.1578653
DISC	-.2618751	.0317408	-8.25	0.000	-.3243671	-.1993831
_cons	3.779692	.396274	9.54	0.000	2.999499	4.559885

Source	SS	df	MS
Model	21.3058268	6	3.55097113
Residual	.537462833	269	.001998003
Total	21.8432896	275	.079430144

Number of obs = 1656
F(6, 269) = 1777.26
Prob > F = 0.0000
R-squared = 0.9754
Adj R-squared = 0.9748
Root MSE = .0447

APHES – Associação Portuguesa de História Económica
Rua Miguel Lupi n.º 20, 1249-078 Lisboa - Portugal
geral@aphes.pt
www.aphes.pt