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CASE OF PORTUGAL**

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LOOKING FOR A SUCCESS IN THE EURO CRISIS ADJUSTMENT PROGRAMS: THE CASE OF PORTUGAL[†]

Abstract

Portugal's adjustment program in 2010-14 under the troika was extensive and aimed at addressing its large debt and anemic growth, so it may serve as a blueprint for reforms in the Eurozone. This paper argues that, conditional on a diagnosis of the underlying problems of the Portuguese economy, the adjustment program failed to deliver in definitely addressing the problems in public finances, but succeeded in leaving promising signs of reform in the structure of the economy. In particular, on the negative side, public debt is still high, primary surpluses improved modestly, and public spending barely fell as the problem of ever-rising pension payments remained unsolved. On the positive side, unemployment fell sharply, exports and the current account balance rose, capital and labor reallocated to more productive and tradable sectors, and the country is growing faster than the EU for the first time in 15 years.

JEL Classification: E65, F44, F45, H63 and O52

Keywords: fiscal austerity, fiscal consolidation and structural reforms

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1. Introduction

From the start, the euro crisis posed a unique challenge to crisis management. In many ways, the events of 2010-11 in Greece, Ireland, Portugal and Spain resembled a classic sudden stop. But, to deal with the ensuing recession, there was no currency to devalue, no independent central bank to back up and resolve struggling national banks, few private bondholders to arrange for a debt write-down, and large and legally protected welfare states that are hard to reform. There were also no European institutions set up to deal with a crisis of this type and magnitude. As a result, the adjustment programs for these four countries were partly improvised, unique in their features, and their effectiveness was in question from the start.

Still, if the euro survives, there will surely be new crises in the future. In turn, as other regions in the world choose different forms of economic integration, they would like to learn what mistakes to avoid in following the European example. Inspecting the adjustment programs in place during the past few years is in order.

Looking for a failure is easy: no matter where the blame lays, it is undeniable that the Greek adjustment program has failed, with grim consequences for its population. In turn, Ireland had started many of the reforms to its banking sector and public finances before its adjustment program began, and there were few macroeconomic measures in the program. Spain received financial assistance to recapitalize its banks with conditions on implementing reforms in the financial sector, but there was no full-fledged IMF macroeconomic adjustment program.

This leaves Portugal as a potential example of success to counterbalance the failure in Greece. Portugal is a good case to focus on for many reasons. Its adjustment program is already complete, and it consisted of an exhaustive list of reforms that were almost all implemented. Coming after Greece and Ireland, the program benefitted from the accumulation of some experience. Finally, while all countries have their idiosyncrasies, Portugal's crisis did not involve a house price boom, nor extreme fiscal profligacy, but was mostly due to inexistent productivity and economic growth since 2000. Reversing this slump might offer lessons on how to raise the disappointing prospects for economic growth in the Euro-area as a whole.

There are two public views on the success of the adjustment program. One is captured by the statement of the influential German finance minister Wolfgang Schäuble in June of 2014, commenting on Portugal's announcement of the end of its program with the IMF: *"Portugal's reform efforts have paid off. Today's decision by the government in Lisbon is proof of this. Portugal no longer needs European assistance and can stand on its own two feet again. This is a major success. Capital market confidence has returned, and rightly so."* (German Federal Ministry of Finance, 2014). From a narrow perspective of success, defined as being able to resume sovereign borrowing, Portugal delivered. By the end of the program, the Portuguese state was able to borrow again and at moderate 10-year interest rates, both at the end of the program (3.5%) and thereafter, with interest rates not exceeding 3% in 2015 so far, in spite of the Greek crisis.² Equally important, the troika extended the maturity of the Portuguese official debt and reduced interest payments, and the Portuguese debt office successfully extended the maturity of the outstanding debt, with 10-year issuances throughout 2014 and 2015. As a result, the average maturity of the debt increased from 6 years in 2010 to above 8 years at the start of 2015, reducing rollover risk (Reis, 2015). Another debt crisis is unlikely in the near future.

A different view was expressed one year later by Paul Krugman in an article that included Portugal in "Europe's Many Economic Disasters" where he stated: *"Portugal has also obediently implemented harsh austerity — and is 6 percent poorer than it used to be."* (Krugman, 2015). From the perspective of macroeconomic performance, the program seems to be a failure, with real GDP per capita 4.9% lower in 2014 than it was in 2010, and total employment falling from 4.9 million to 4.5 million. If success is judged as a rebound of the economy from its prolonged depression, then there is little to celebrate.

There is a simple way to reconcile these two opposing views. The first view focuses on public finances, where the program would have delivered, while the second view argues that its consequences were a macroeconomic disaster. Both views could then be right, with a success in stabilizing public finances but little gains in getting the economy out of its slump.

This article argues that, in fact, both views are more likely wrong, and the verdict on the adjustment program is the opposite: there are promising changes in the structure of the

² The sources for the data mentioned in the text are varied and describe data in an accompanying replication file.

economy, but public finances remain far from a path that lowers the public debt. It is hard to judge the success of a program without knowing what are the criteria and what is the counterfactual. My approach is to look at the progress in solving Portugal's underlying structural problems and in addressing the four key challenges that Portugal faced at the height of the crisis: paying for large past debts, controlling future public spending, re-starting economic growth and lowering unemployment, and improving competitiveness and capital allocation. Section 2 starts by providing a diagnosis of Portugal's slump and crash, so that sections 3 to 6 then assess success conditionally on the economy's diseases to determine whether the program helped to heal them.³ Another approach would have been to compare the adjustment program to what would have been ideal, if the best policies had been followed. While there have definitely been many mistakes, I leave for others the job of highlighting them and arguing whether they are only clear now with the benefit of hindsight.

2. Diagnosis of the crisis

Portugal requested international help in April of 2011, and officially agreed to terms one month later. This came after a run up in 10-year interest rates on government bonds, which reached 9.6% in May, up from 5.0% one year earlier. The government had difficulty rolling over bonds that were coming due, and signed a 3-year agreement with the troika to secure financing of up to €78 billion, which expired on June 30, 2014.

The Euro-crisis arose as large capital flows from the core to the periphery of Europe, which had built up since the introduction of the euro, suddenly reversed in 2009-10. Without a currency to depreciate between different regions of the Euro-zone, the large and sudden contraction in the current account deficit required a large contraction in domestic consumption and investment, driving these economies into recession. A fall in the real exchange rate was required, but the usual rigidities that slow the adjustment of prices and wages led to a large and prolonged increase in unemployment. This is the traditional side of the crisis (Shambaugh, 2012 and Blanchard, 2013).

³ The European Commission (2014) and Jorge (2014) provide alternative evaluations, more favorable and more critical, respectively.

New to this sudden stop, the capital flows across borders were intermediated by banks, and largely funded through the interbank market (Brunnermeier and Reis, 2015). In the European periphery, banks and capital markets lacked the depth to allocate the large inflows that came with financial integration, likely misallocating them into unproductive non-tradable sectors. A flight to safety in response to higher risk aversion following the 2008 financial crisis had a cross-border dimension in Europe. The sudden stop came with fire sales in financial markets and falls in bank capital that led to large contractions in domestic credit.

Another novel and unique feature to the euro crisis is what has been labeled the “diabolic loop” or the “doom loop” between banks and sovereigns (Brunnermeier et al, 2011, and Obstfeld 2013). European banks held large amount of sovereign bonds. As economic activity slowed and public deficits rose, fears about sovereign default led to falls in the prices of government bonds, large losses in banks’ holdings, and further fire sales and contractions in credit, deepening the recession. Once the crisis was in motion, the diabolic loop worsened because banks would offset the sudden stop of private capital by pledging government bonds as collateral at the ECB to obtain public financing. Together with the official troika bailout programs, this implied that within a couple of years, most of the public debt of the countries in crisis was held by either official creditors or domestic banks.⁴

As a result of these features, the Portuguese crisis combined a deep recession and a debt crisis, as in other crisis countries. What was then special about the Portuguese crisis?⁵ To start, Portugal’s recession did not begin with a crash in 2010, but rather with a slump that had been going on for ten years before that. In the 2000-09 period, real GDP per capita grew by only 2.9% and the unemployment rate rose from 4.9% to 11.3%. The extent of the economic calamity in Greece during the crisis has been often emphasized: Greek real GDP grew cumulatively by only 1.4% in between 2000 and 2012. But Portugal grew by the same 1.4% during the same period, because it was already slumping in the first ten years of the century. Related, Portugal did not have a house price boom, nor a significant expansion of the construction sector before the crisis. The large expansion in nontradables and consequent appreciation of the real exchange rate that came with the large capital inflows from the rest of Europe happened instead

⁴ Crosignani et al (2015) document the increase in banks’ holdings of Portuguese debt.

⁵ See Fagan and Gaspar (2007), Bento (2010), Reis (2013) and Alexandre et al (2014).

in the wholesale and retail sector and community services (education, health care and social work).

The debt crisis also had two distinct features relative to the other crisis countries. First, there is little evidence of public profligacy in Portugal before 2007. All of the increase in public spending is accounted for by increases in the payment of old-age pensions and unemployment benefits, and both of these systems actually became less generous during this period (Reis, 2013). Moreover, taxes increased. Second, partly because of the contraction in income after 2000 without as large a contraction in consumption, private external debt was higher in Portugal than in the other euro-crisis countries: net international liabilities were already 104% of GDP by the end of 2010.

Combining these common features to the euro crisis and Portugal's specific characteristics, the challenge of the adjustment program was to deal with four problems: How to pay for the accumulated debt, public and private? How to control public spending, especially in pensions? How to leave the slump and restart growth? And how to restore competitiveness by improving the allocation of resources in the economy? The next four sections assess the program through these four lenses. Politics is left out of the discussion until the conclusion because of a final Portuguese distinction in its economic and debt crisis: there was a relative political consensus around the adjustment programs. They were signed by the three major center parties, and their share of the votes on polls fell slightly during the program, without great gains to new or radical parties, unlike what happened in Greece and Spain.

3. Paying past debts

At the start of the program, Portugal had both large public debt and large external debt. With difficulties in rolling over either of the two felt by private and public sectors alike, and with debt overhang holding back new investment, adjustment required dealing with this debt.

Starting with paying for the national debt, the trade balance went from -7.6% to 0.5% of GDP.⁶ The country had not had a trade surplus since World War II, so this is no small

⁶ All comparisons are between 2010 and 2014, using annual data, unless stated otherwise.

accomplishment. At the same time, if this had been achieved through a contraction in imports, both because of a contraction in aggregate demand during the crisis as well as because of the reduced price of oil, one might worry that this improvement was temporary. An argument against this is that the ratio of exports to GDP increased from 29.9% to 39.9%, and Portugal improved its share in most of its export markets.

Turning attention to the public debt, the budget deficit improved from -11.2% of GDP to -7.2%, but part of this was due to the reduction in interest payments when privately-held debt was rolled over into troika debt. Still, the primary surplus also improved markedly from -8.2% to -2.3% of GDP. Much ink has been spilled on the virtues and pitfalls of austerity in a debt crisis. One interesting feature on the Portuguese situation (and the euro crisis) is represented in Table 1. Aside from the primary surplus since 2010, it also shows its projected path according to different waves of IMF programs, as well as the fall in the deficit between 2005 and 2008, when Portugal was in violation of the Maastricht limits and had to bring its deficit in line. The pace of austerity was milder than what was planned, with constantly relaxed targets, and similar in 2011-14 to 2005-08. It is hard to make a case for unexpected austerity from the the start of 2012 onwards, or to see a dramatic reform in Portuguese public finances. Another jarring comparison comes with the United States. Between 2010 and 2014, the U.S. federal surplus improved by 5.9%, in spite of little talk of excess austerity and no troika impositions; Portugal's improved by only 4.0%.

Table 1. Public primary deficits: actual, IMF program forecasts, and prior to crisis

| Year | Actual | Forecasts | | | Year | Actual |
|------|--------|-----------|--------------|--------------|------|--------|
| | | June 2011 | October 2012 | January 2013 | | |
| 2010 | -8.2 | | | | | |
| 2011 | -3.1 | -1.7 | | | 2005 | -3.6 |
| 2012 | -0.8 | 0.3 | | | 2006 | -1.6 |
| 2013 | 0.0 | 2.1 | 0.2 | -0.2 | 2007 | -0.1 |
| 2014 | 2.3 | 2.8 | 2.4 | 2.1 | 2008 | -0.7 |

Source: IMF reports on Portugal.

Lowering the debt can also be done by selling assets or by restructuring liabilities. As a sign of the first, Portugal's gross external debt grew by only €0.5bn and the net international investment position worsened by only €8.3bn. Large companies, both public and privately-owned, were sold to foreigners, including the major electrical utility, the larger telecommunications company, the airline, and large banks.

As for the second, in spite of the cut in the public deficit, the stock of public debt went from 96% to 130% of GDP. This number may be misleading, because it refers to the face value of the debt. Yet, in 2012, the troika restructured the Portuguese debt (together with that of Greece and Ireland) extending maturities and lowering interest payments, therefore reducing its market value in spite of no cuts to the face value. Since a large share of the debt is owed to the troika institutions, and is not traded, there is no market value to assess it. Following Dias et al (2014) and Schumacher and di Mauro (2015), I calculate the present value of the payments that the Portuguese government has committed to make to all of the holders of its debt, both private and public. If, following these authors, one uses a subjective interest rate of 5% per year to discount the payments, then the market value of the debt is four-fifths of its face value. Using instead market discount rates for the yield curve on Portuguese debt, the market value is 95% of the face value.

Either way, Portugal still has a high public debt outstanding and a meager primary surplus. It is difficult to see how Portugal can get public debt under control without a new reconfiguration of maturities and interest payments on the troika debt that more significantly reduces the market value of the public debt. The radicalization of European public opinion caused by the 2015 Greek crisis has made this harder to achieve.

4. Public spending under control? Little progress

A large part of the reduction in the public deficit was achieved via increases in the tax rates on personal income and sales, as well as tighter enforcement. Overall government revenue increased from 40.6% to 44.5% of GDP. At the same time, government consumption purchases fell from 20.7% to 18.5% of GDP, and the cut in public investment was even sharper, from 5.3% to 2.0%.

Yet, transfers increased from 22.1% to 23.2% of GDP, in spite of the fact that all of the increase in public spending between 2000 and 2007 was already entirely accounted for by increases in old-age pension payments. As a result, while total public spending fell from €93bn to €90bn, spending excluding public investment it actually rose from €84bn to €86bn. Once public investment returns to its pre-crisis levels, public spending will be almost unchanged mostly because of the increase in social transfers.

It is up for debate whether public spending should keep on increasing, accompanied by even higher taxes. It is more clear that given current trends, the pension system in Portugal will accumulate ever larger deficits and, absent reform, be responsible for any future fiscal crises. During the adjustment programs, the retirement age increased to 66 years, early retirement was suspended, and survivor pensions became means tested, but most reforms were either modest or generously grandfathered. The more meaningful impact on spending came from an across-the-board cut in pensions. But these cuts were partly reversed by the constitutional court, and all the the political parties have promised to fully reverse them in the next two years. As a result, the permanent adjustment to public spending remains mostly to be done.

5. Structural reforms: growth and labor markets

Between 2000 and 2009, Portugal's real GDP per capita grew 7.3% less than the EU average, excluding Germany. By the end of adjustment program, in 2014, Portugal grew 0.3% faster than the EU without Germany, and the IMF forecasts that it will continue doing so in the near future. Germany has been unusual in the EU since 2000, slumping in the beginning of the century and booming after 2010 when the rest of Europe was in crisis. Taking the EU without Germany as the appropriate comparison, growth seems to have resumed in Portugal, starting the process of catching up to the rest of Europe.

In this comparison, it is important to note that the economic outlook is still dismal. Growth forecasts from the IMF for the next 3 years are a modest average of 1.5% per year, reflecting the economic stagnation of the European Union. But, from the perspective of the

adjustment program, it is a good sign that Portugal has resumed convergence to the rest of Europe after diverging since the start of the century.

Moreover, unlike in other European labor markets, Portuguese unemployment has fallen quite rapidly so far. The seasonally adjusted unemployment rate at the end of 2014 was 13.6%, still above the value at the end of 2010 (12.2%), but it was down to 12.2% by September of 2015 after falling almost monotonically from its peak of 17.5% in January of 2013.

Why this quick adjustment? One distinguishing feature of the Portuguese labor market is its dual nature (Centeno and Novo, 2012). On the one hand, many workers benefit from protected contracts that make layoffs expensive, contribute to low job creation and destruction, and encourage low labor productivity. On the other hand, as many as half of all workers are on term contracts and switch jobs often. These include the large majority of jobs created in this century and are mostly held by people younger than forty. This duality is a development problem since it lowers average productivity and makes reforms difficult. A large share of the population is unproductive and almost impossible to fire. Yet, at the margin, it implies that the Portuguese labor market is actually somewhat flexible in response to a macroeconomic shock. The marginal worker is in a term contract. Job creation and destruction are easy and the unemployment rate can adjust quickly to major shocks.⁷

This duality also suggests that to evaluate the adjustment in the labor market requires looking at the composition of employment. This will let us see whether churn in the labor market during the adjustment programs affected the average worker and average productivity in the economy. Total employment fell from 4867 to 4492 thousand workers but, looking across sectors, agriculture plus construction account for two thirds of this reduction. Looking by education level, employment of workers with a primary school education or less declined by 824 thousand. That is, employment among those with secondary schooling or higher education actually *increased* during these four years of crisis, by 192 and 293 thousand, respectively.

⁷ Some of the decline in unemployment was certainly also due to emigration: the population fell by 172 thousand, or 1.6%. This decline in population is steady since 2010 though, while unemployment rises and falls. A third driver of the fall in unemployment is decline in participation by discouraged long-term unemployed, but the careful statistical work to quantify how large this was remains to be done.

Another sign of this compositional adjustment comes from the adjustment of labor compensation. Wages fell the most (8%) for those with higher education, while they only slightly fell (1%) for those with primary education or less. At the relevant margin of adjustment, wages adjusted flexibly, and employment rebounded. In aggregate, real unit labor costs fell by 6.6% during these four years, mostly due to a fall in real compensation (5.3%).

These numbers suggest structural changes in the Portuguese economy, and perhaps a reversal of the misallocation of resources that had plagued it in the past 15 years.

6. Competitiveness and the allocation of capital

In the World Economic Forum competitiveness index, Portugal improved from being ranked 46th to 36th between its 2010/11 report and its 2014/15 report. This was the result of many legal reforms that were part of the extensive adjustment programs. The IMF (2015b) documents 494 different structural reform actions, about half in the public sector, and half in deregulation of product, labor, and financial markets. Whether any of it leads to higher economic growth is an open question.

Competitiveness is often measured using a real exchange rate. Yet, the movements in the Portuguese effective real exchange rate were mostly due to changes in the value of the euro vis-a-vis other currencies. Most of the capital flows happened within EU borders, towards non tradable sectors in the periphery and to less productive and more protected industries (Reis, 2013, and Dias et al, 2014). A more appropriate diagnosis of competitiveness than the real exchange rate is the relative price of nontradables. Between 2010 and 2014, it fell by only 2.4%, signaling little improvement.

At the same time, as noted already, exports and the tradable sector expanded considerably. The current account surplus went from -10.1% to 0.6% of GDP, suggesting a marked improvement in competitiveness. Much as in the years before the crisis, there was a significant reallocation across tradables and nontradables during the adjustment in spite of small changes in relative prices.

Looking for signs of an improved allocation of resources, it would be desirable to have estimates of productivity and markups. Neither are available with current data. But, looking at the much more imperfect measure of labor productivity, output per hour increased by 2.8% in the overall economy. More interestingly, Reis (2013) emphasized that two sectors, retail and wholesale trade and real estate activities, had a large increase in markups and stagnant productivity in 2000-07 and yet absorbed large amounts of the capital inflow. These two sectors had among the largest increases in output per hour between 2010 and 2014, 11.1% in wholesale and retail trade, and 10.8% in real estate, even as they shrank in their relative size. This evolution is consistent with misallocation and inefficiency before the crisis, and with an improvement during the adjustment program.

As is typical in Europe, the financial system is dominated by banks, and they are crucial in allocating capital across sectors. Since 2010, the shareholders of most banks in Portugal lost almost all of their investment, after several waves of recapitalization, and with one of the four major banks going through resolution. Moreover, the banks were subject to the ECBs asset quality reviews as well as more intense regulation. The fall in total loans is more than fully accounted for by the decline in loans to the construction sector, and the ratio of credit to deposits increased.

There are reasons to be wary of the state of banks' finances. First, nonperforming loans to non-financial corporations have increased almost continuously, from 4% to 14%. Rather than rising sharply at the start of the adjustment program, as banks and regulators revalued assets, this slow and prolonged acknowledgment of losses suggests that banks may have been rolling over bad loans. Second, and confirming this fear, corporate debt stayed almost unchanged at 153% of GDP. By comparison, in Spain during the same period, it fell by more than 20% of GDP. The IMF (2015c) partly attributed this to the lack of legal reforms allowing for corporate bankruptcies and debt write downs.

7. Conclusions

It is difficult to call an adjustment process a success when the country in question has barely grown in 15 years and unemployment is 12.2%. Yet, the Portuguese economy has

changed in many directions that seem promising. The misallocation of resources that plagued it seems to have started to reverse, as export sectors have grown, employment shifted to more educated workers, protection of local interests declined, and output per hour increased in the least productive sectors. The economy is growing faster than in rest of Europe, and while the definitive tests of adjustment will be whether economic growth in the next few years is able to offset the stagnation of the last 15 years, there are encouraging signs of some success.

At the same time, it is easy to claim success in adjusting public finances when looking at the profile of stable and small payments that the Portuguese state has to make in the near term. Yet, behind the low interest rates and longer maturities, public debt is 130% of GDP, austerity was far from being decisive on generating large primary surpluses, and public spending will keep on rising given the lack of a reform of the pension system. The evolution of public finances is closer to being a failure and, without a quiet restructuring of the debt to the European authorities over the next few year that lowers its market value, there are reasons to be worried.

In the near term, as the recent Greek crisis illustrates, it is often politics that derails adjustment. In this regard, in the last four years the troika had in Portugal a very committed and cooperative government. Yet, the troika insisted on changes in pensions that were repeatedly deemed unconstitutional, pushed for changes to the structure of payroll taxes that were very unpopular, and sent contradictory public messages on the need to adjust public finances. Starting from an initial position of support for reforms, the troika made itself unpopular, often unnecessarily. Even if there is no dramatic reversal of the reforms so far, there is uncertainty on whether what remains to be done will ever take place.

References

- Alexandre, Fernando, Pedro Bação, Pedro Lains, Manuel Martins, Miguel Portela, Miguel, and Marta Simões, ed. 2014. *A Economia Portuguesa na União Europeia: 1986–2010*, Actual Editora.
- Bento, Vitor. 2010. *O Nó Cego da Economia—Como Resolver o Principal Bloqueio do Crescimento Económico*. Bnomics.
- Blanchard, Olivier. 2013. “Comment.” *Brookings Papers on Economic Activity* 46: 194-197.
- Brunnermeier, Markus, Luis Garicano, Phillip R. Lane, Marco Pagano, Ricardo Reis, Tanos Santos, David Thesmar, Stijn van Nieuwerburgh, and Dimitri Vayanos. 2011. “European Safe Bonds (Esbies).” www.euronomics.com.
- Brunnermeier, Markus and Ricardo Reis. 2015. “A Crash Course on the Euro Crisis” Princeton University and Columbia University manuscript.
- Centeno, Mário, and Álvaro Novo. 2012. “Segmentation.” Economic Bulletin and Financial Stability Report. Bank of Portugal.
- Crosignani, Matteo, Miguel Faria-e-Castro and Luis Fonseca. 2015. “Central Bank Interventions, Demand for Collateral, and Sovereign Borrowing Costs.” NYU manuscript.
- Dias, Daniel, Christine Richmond and Mark Wright. 2014. “The stock of external sovereign debt: Can we take the data at face value?” *Journal of International Economics* 94: 1-17.
- European Commission. 2014. “The Economic Adjustment Programme for Portugal 2011-14.” European Economy Occasional Papers 202.
- Fagan, Gabriel and Vitor Gaspar. 2007. “Adjusting to the Euro.” ECB Working Paper no. 716.
- German Federal Ministry of Finance. 2014. “Portugal exits IMF-EU programme / Finance Minister Schäuble welcomes decision.” Available at <http://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Topics/Europe/Articles/2014-06-12-portugal-exits-imf-eu-programme.html>.
- International Monetary Fund. 2015a. “Portugal: Concluding Statement of the 2015 Article IV Mission”. Available at <https://www.imf.org/external/np/ms/2015/031715.htm>
- International Monetary Fund. 2015b. “Portugal: Selected Issues.” IMF Country Report No. 15/127.
- International Monetary Fund. 2015c. “Portugal” IMF Country Report No. 15/21.
- Jorge, Rui Peres. 2014. *Os 10 erros da Troika em Portugal*. A Esfera dos Livros.
- Krugman, Paul. 2015. “Europe’s Many Economic Disasters.” New York Times, July 3rd, available at: http://www.nytimes.com/2015/07/03/opinion/paul-krugman-europes-many-disasters.html?_r=0
- Obstfeld, Maurice. 2013. “Finance at Center Stage: Some Lessons of the Euro Crisis.” UC Berkeley manuscript.
- Reis, Ricardo. 2013. “The Portuguese Slump and Crash and the Euro Crisis.” *Brookings Papers on Economic Activity* 46: 143-193.
- Reis, Ricardo. 2015. “Gerir a Dívida Pública.” In *Afirmar o Futuro: Políticas Públicas para Portugal*, ed. by Paulo T. Pereira and Viriato S. Marques, Fundação Calouste Gulbenkian, 26-43.

Schumacher, Julian and Beatrice Weder di Mauro. 2015. "Diagnosing Greek Debt Sustainability: Why is it so hard?" *Brookings Papers on Economic Activity*, forthcoming.

Shambaugh, Jay. 2012. "The Euro's Three Crises." *Brookings Papers on Economic Activity* 44: 157–211.