



PORTUGAL

SELECTED ISSUES

September 2018

This Selected Issues paper on Portugal was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on August 21, 2018.

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Price: \$18.00 per printed copy

International Monetary Fund
Washington, D.C.



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August 21, 2018

Approved by
The European Department

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CONTENTS

FINANCIAL CONDITIONS AND GROWTH AT RISK IN PORTUGAL	5
A. Introduction	5
B. Macro-Financial Environment in Portugal	6
C. Measuring Financial Conditions	8
D. Estimating Risks to GDP Growth	11
E. Policy Implications and Conclusion	13
FIGURES	
1. Macro-Financial Developments	7
2. Partitioned Financial Indicators 1999–2018	10
3. Quantile Regressions Coefficients	12
4. Probability Densities of GDP Growth Four and Eight Quarters Ahead	13
TABLE	
1. Partition Groups	8
ANNEX	
I. Data Sources	14
References	15
PRIVATE INVESTMENT	16
A. Introduction	16
B. Investment and Capital: From Crisis to Recovery	17

C. Business Investment: Drivers Supporting the Recovery	19
D. Investment and Medium-Term Growth: Structural Bottlenecks	21
E. Policy Implications	23

FIGURE

1. Structural Reform Gaps	22
---------------------------	----

ANNEX

I. Alternative Specifications	24
-------------------------------	----

References	26
------------	----

TRENDS IN TOTAL PUBLIC INVESTMENT AND CAPITAL STOCK 27**FIGURES**

1. Public Investment: Portugal vs. Other Countries	27
2. Current Spending vs. Capital Spending	28
3. Capital Stock Ratio	29
4. Public-Private Partnerships Investment and Capital Stock	29
5. Public Investment by Function in 2015	30
6. Indicators of Infrastructure Quality and Quantity	31
7. Indicators of Public Investment Efficiency in 2015	32

References	33
------------	----

DELEVERAGING AND PROFIT MARGINS IN PORTUGAL 34

A. Introduction	34
B. Deleveraging in Portugal	35
C. Profit Margins and Unit Labor Costs in Portugal	39
D. Concluding Remarks	44

FIGURES

1. Deleveraging in the Economy	38
2. Stability of Long Run Coefficients: Cumulative Sum (CUSUM) Test	43
3. Stability of Long Run Coefficients: Cumulative Squares (CUSUMSQ) Test	44

TABLE

1. ARDL Bounds Testing Approach to Cointegration	42
--	----

ANNEXES

I. The Determinants of Profit Margins	46
II. Unit Root, Granger Causality, and F- and t-Bound Tests	47

References	50
------------	----

PORTUGAL'S LARGE CURRENT ACCOUNT ADJUSTMENT 51

A. Introduction	51
B. The Current Account Adjustment	52
C. Portugal in Event Study of Episodes of Large Current Account Adjustments	56
D. Fundamental and Policy Drivers of the Current Account	62
E. Conclusions	64

References	65
------------	----

THE EXTERNAL ADJUSTMENT IN PORTUGAL 66

A. Introduction	66
B. Stylized Facts about the External Balance Sheet in Portugal	68
C. External Sustainability Assessment	70
D. Deterministic External Sustainability Analysis	70
E. Probabilistic External Sustainability Analysis	71

FIGURES

1. Net International Investment Position, 2017	66
2. Price Competitiveness Measures	66
3. Output Gap and Unemployment Rates	67
4. NIIP: Decomposition by Financial Instrument	68
5. Balance of Payment Flows, 1987–2017	69
6. Rates of Return Differential Between External Assets and External Liabilities 1999–2016	69
7. Required REER Depreciation for Varying NIIP Targets	70
8. Probability Distribution of REER Adjustment Required to Stabilize the NIIP at Alternative Targets	73

ANNEX

I. Methodology	74
References	76

TAKING STOCK OF REFORMING THE LEGAL AND INSTITUTIONAL FRAMEWORK FOR DEBT ENFORCEMENT AND INSOLVENCY IN PORTUGAL _____ **77**

A. Introduction	77
B. The Recent Reforms	80
C. Market Perceptions and Indicators	88
D. Conclusions	89

BOXES

1. The "Martian Pact"	83
2. Key Differences Between RERE and SIREVE	86

FIGURES

1. Non-Financial Corporations Debt	79
2. Household Debt	79
3. NPL Ratios	80
4. Civil Enforcement Cases Entered and Completed, 2007–2018	81
5. Civil Enforcement Cases Clearance Rate	82
6. Incoming and Resolved PERs, 2012–2017	84
7. Declarations of Insolvency 2007–2017	85
8. Entered, Terminated and Pending Insolvency Cases, 2007–2018, 1 st Instance	85

References	91
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FINANCIAL CONDITIONS AND GROWTH AT RISK IN PORTUGAL¹

A. Introduction

1. **The macro-finance literature and recent experience provide compelling evidence that financial imbalances grow in good times, creating downside risks to economic growth.**

Indeed, when confidence in economic prospects is high and financial conditions benign, households, firms and financial intermediaries tend to take excessive risk, leading to an increase in leverage, maturity mismatches and other balance sheet weaknesses.² In presence of elevated imbalances, a negative shock can force borrowers into default or fire sales, putting pressure on lenders' profits and collateral values, and disrupting financial intermediation. This can result in higher odds of severe and prolonged economic contraction.³ Thus, financial conditions that cause financial vulnerabilities to build up in good times could convey valuable information about downside risks to future GDP growth.

2. A recent strand of empirical research has undertaken to investigate the predictive power of financial conditions for downside risks to economic growth. Adrian, Boyarchenko and Giannone (2016) showed that financial conditions improve the accuracy of predicting economic contractions in the case of the United States. The Chapter 3 of the October 2017 IMF Global Financial Stability Report (GFSR) developed a conceptual framework that links financial sector risks to GDP growth risks through macro-financial linkages. Applying this "Growth-at-Risk" approach (GaR) to a set of major advanced and emerging market economies, the authors found that financial conditions are leading indicators of risks to GDP growth in both advanced and emerging market economies. The estimated impact of financial conditions on growth is stronger at the left tail of the distribution of future GDP growth than on the median and upper percentiles growth rate for advanced economies, suggesting the existence of asymmetries. While rising price of risk⁴ is a powerful indicator of near-term risks of large contractions, growing leverage and higher credit growth signal downside risks to GDP growth over the medium term.

3. This paper applies the GaR methodology developed in the October 2017 GFSR to Portugal. After three years of lackluster economic recovery, GDP growth gained strength in 2017, and staff's baseline scenario assumes that economic prospects will remain positive over the medium term. On the other hand, this strong recovery is taking place in an environment of low interest rates and volatility, and compressed risk premia, which may incentivize borrowers and

¹ Prepared by Mesmin Koulet-Vickot.

² See Brunnermeier and Sannikov (2014) for a discussion on the volatility paradox, in which benign financing conditions (low volatility) hides risks that become apparent when financial conditions tighten.

³ See Claessens, Kose, and Terrones, (2011a, b).

⁴ The price of risk includes variables such as term spreads, credit spreads, equity, and house prices.

lenders to take excessive risks, aggravating the still-elevated leverage and posing risks to financial stability in case of a negative shock. This paper attempts to provide an estimate of the downside risks to future GDP growth, based on the current level of GDP growth and current financial conditions.

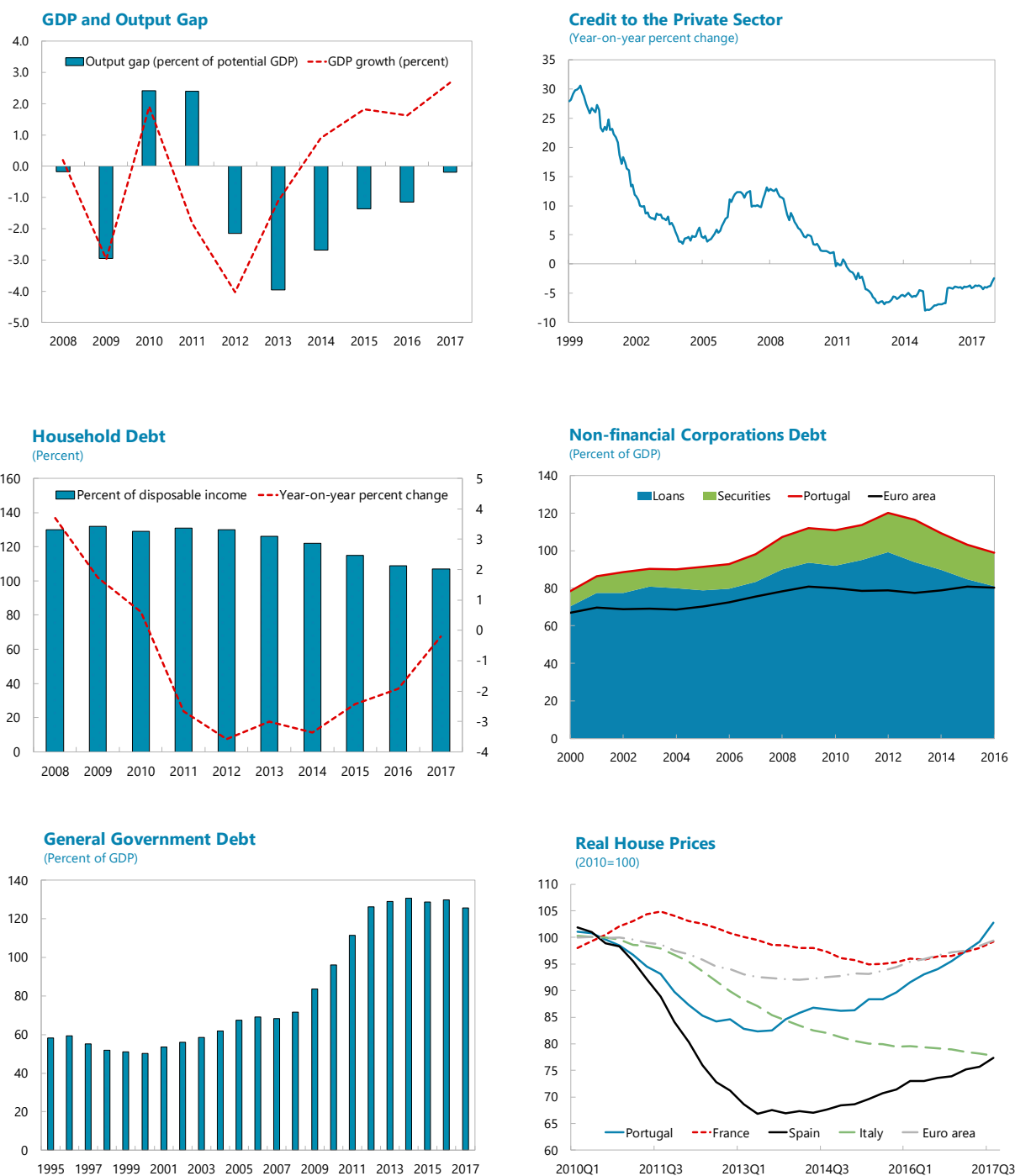
4. The GaR methodology involves three key steps. First, financial conditions indicators are partitioned into a predetermined number of subgroups using a data reduction technique. Second, a model of future output growth is estimated as function of current economic conditions and the partitioned financial conditions indicators using quantile regressions. Finally, the conditional quantile function (or inverse cumulative distribution function) is transformed into a probability density function by fitting a skewed t distribution. This probability density function is then exploited to quantify downside tail risks to future GDP growth.

5. The paper is organized as follows. The next section summarizes the prevailing macro-financial environment in Portugal. The subsequent section describes the methodology for building Portugal's financial conditions measures and discusses the results. The section after provides estimates for downside risk to GDP growth. The last section concludes with policy implications.

B. Macro-Financial Environment in Portugal

6. Portugal's economic activity picked up in 2017, and the gap between the economic and financial cycle is narrowing. After three years of moderate growth, real GDP accelerated to 2.7 percent in 2017, the highest since 2000, and the output gap is closing. Although the credit cycle continues to trail the cyclical recovery, the gap is narrowing driven by a strong increase in new lending to households for consumption and house purchases, as well as to nonfinancial corporates with good risk profiles. The robust growth in new lending has supported aggregate demand and thus the economic recovery, but may have also slowed the deleveraging process.

7. Despite recent progress, financial imbalances remain elevated. While the nonfinancial private sector's debt-to-GDP ratio fell 47 percentage points since 2012, it is still among the highest in the euro area, with total household and corporate debts standing at 74 and 138 percent of GDP at end-2017 (unconsolidated basis), respectively. For its part, public debt remains elevated at 126 percent of GDP. In the banking sector, the still high stock of non-performing loans (13.3 percent of total loans at end-2017) and modest profitability prospects remain concerns. In the housing markets, prices continue to increase (about 20 percent in real terms since 2013 compared to seven percent in the euro area), and there are concerns that the current easy financial conditions could boost mortgages and further drive up prices. In this environment, a sudden repricing of risks could affect financial stability and thus economic growth.

Figure 1. Macro-Financial Developments

Sources: Eurostat, Banco de Portugal, NBB, Haver Analytics, and IMF staff calculations.

C. Measuring Financial Conditions

8. The literature offers two approaches to constructing measures of financial conditions from a wide range of financial indicators. The “univariate” approach summarizes into a single index the salient features of a large set of financial indicators. This approach avoids overfitting issues due to the inclusion in a model of a large number of predictors, but comes at the price of suppressing separate signals provided by different types of financial indicators, which could be relevant at different horizons (for instance asset prices and leverage).⁵ The “partitioning” approach, developed in the October 2017 GFSR, seeks to differentiate information about a variety of horizons conveyed by financial variables, while avoiding overfitting problems. Financial indicators are organized into a few groups based on their economic similarity, and then their information is aggregated at group level, which facilitates the interpretation of the results.

9. Following the October 2017 GFSR, a large set of financial variables is partitioned into three groups (see table 1 below). We use the Linear Discriminant Analysis (LDA), a data-reduction technique, to determine the weights to aggregate the financial variables in each group. LDA is like principal component analysis (PCA) as it seeks for linear combinations of variables which best explain the data, but it diverges from PCA as it attempts to maximize the separability between the classes of data or categories. Here, the categorical variable (Y) is a dummy variable, taking on the value of 1 when future GDP growth at the one-year horizon is below the 20th percentile of historical outcomes, and 0 otherwise.⁶ As such, the weights (loadings) to aggregate financial indicators in each group are determined in a way that maximizes their contribution to discriminating between periods of low GDP growth (below the 20th percentile) and the rest of the time. This approach is suitable from this paper’s perspective as it allows to link financial indicators and GDP growth outcomes.

Table 1. Portugal Partition Groups

Price of Risk	Credit Aggregates	External Conditions
Interbank rate	Credit to GDP	VIX
Real long-term rate	Credit growth to	VSTOXX
Sovereign spread	Household	Exchange rate (US
Term spreads	(quarterly)	dollar to Euro)
P/E of PSE-20	Credit growth to	Oil prices
House price returns	Non-Financial	Real GDP growth
One-year CDS	Corporate (quarterly)	(euro area, excluding Portugal)

Source: IMF staff.

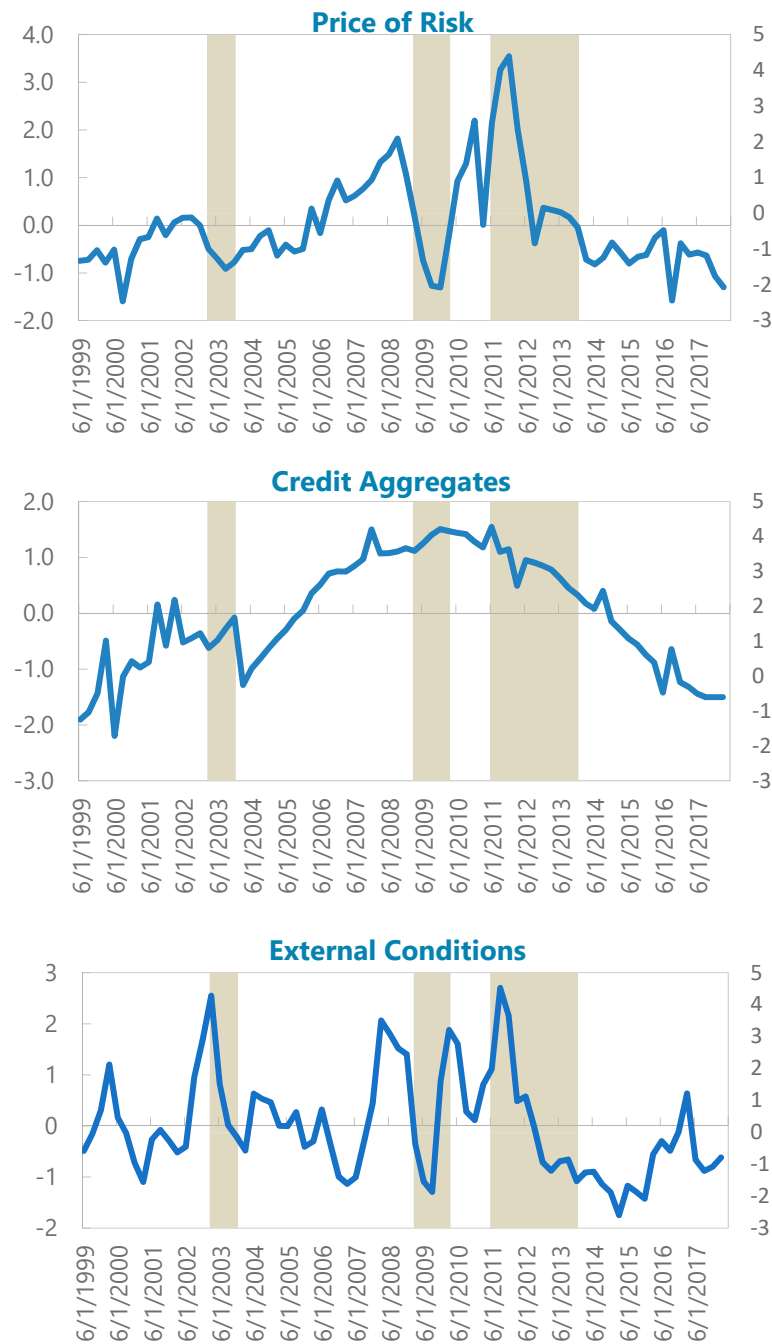
⁵ See the 2017 October GFSR (Chapter 3).

⁶ Details on the LDA approach are discussed in the annex of the October 2017 GFSR. See also Izenman 2013 for a thorough description of the LDA technique.

10. Overall, the dynamics of the price of risk, credit aggregates and external conditions dynamics capture well key global and Portuguese events, and predict well episodes of severe economic weakness (GDP growth below the 20th percentile, see figure 2).⁷ More specifically:

- *Price of risk.* The dynamics of the price of risk closely tracks the impact of global and euro area financial events, including the 2002 financial turbulence following the discoveries of accounting irregularities at large US corporations (Enron, WorldCom), the 2008 global financial crisis, the 2012 euro area crisis, the 2013 taper tantum episode, and the 2015 global bond sell off. As shown in figure 2, these events triggered spikes in the domestic price of risk and predicted well the subsequent economic downturns. Since mid-2013, the price of risk has been low along with the ECB's accommodative monetary policy and with improvements in sovereign spreads as fiscal consolidation took hold.
- *Credit aggregates.* Its evolution reflects well Portugal's monetary experience, notably the launch of the euro zone in 1999, the introduction of euro currency in 2002, and the deleveraging since 2012.
- *External conditions.* Its evolution captures correctly the episode of stress and relaxation in global financial markets described above, which triggered spikes in external financial conditions.

⁷ The data cover 1999:Q1 to 2018:Q1, on a quarterly frequency. The choice of financial variables has been influenced by data availability (see Annex 1).

Figure 2. Partitioned Financial Indicators 1999–2018

Source: IMF Staff calculations.

Note: The grey-shaded areas correspond to periods where GDP growth was below the 20th percentile of historical outcomes.

D. Estimating Risks to GDP Growth

11. The empirical strategy for estimating risks to GDP growth follows the two-step procedure of Adrian et al (2016). In the first step, quantile regressions of Koenker and Bassett (1978) are used to forecast the conditional quantiles of future GDP growth at several time horizons. In the second step, the quantile regression (inverse cumulative distribution function) is transformed into a probability density function using a parametric fit (a skewed t distribution). Once the curve is fitted, the growth-at-risk is estimated for the selected horizons.

Quantile Regressions

12. The recourse to quantile regressions is justified by the possibility of non-linear output responses to financial conditions documented in the literature.⁸ In addition, quantile regressions are robust to non-normal errors and outliers, and invariant to monotonic transformation.⁹

13. Quantile regressions are estimated on the following specification:

$$Y_{t+h,q} = C_{t,q}^h + \gamma_{y,q}^h Y_t + \alpha_{p,q}^h PR_t + \beta_{a,q}^h CA_t + \phi_{f,q}^h EC_t + \epsilon_{t,q}^h$$

where $Y_{t+h,q}$ represents the quantiles (q) of the future distribution of GDP growth (y) h quarters ahead; PR , CA , and EC are the three predictors corresponding to the price of risk, credit aggregates and external conditions derived from the LDA, respectively; $C_{t,q}^h$ and $\epsilon_{t,q}^h$ are the intercept and error term, respectively.

14. Overall, the results from the quantile regressions support the view of a nonlinear relationship between financial conditions and future GDP growth, with the various financial indices being more or less informative depending on the time horizon (see figure 3).

- *Price of risk* is a powerful forecaster for downside risks to GDP growth at horizons of one to eight quarters. The estimated impact of tighter price of risk appears to be mostly stronger at the tails of the GDP growth distribution than around the median, supporting the view of asymmetries in the output response. The price of risk becomes uninformative over longer horizons.
- *Credit aggregates* (leverage and credit growth) signal downside risks to GDP growth at horizons of four to 12 quarters (one to three years). The significant predictor power of credit aggregates at short-term horizon (one year) is unsurprising given that the Portuguese

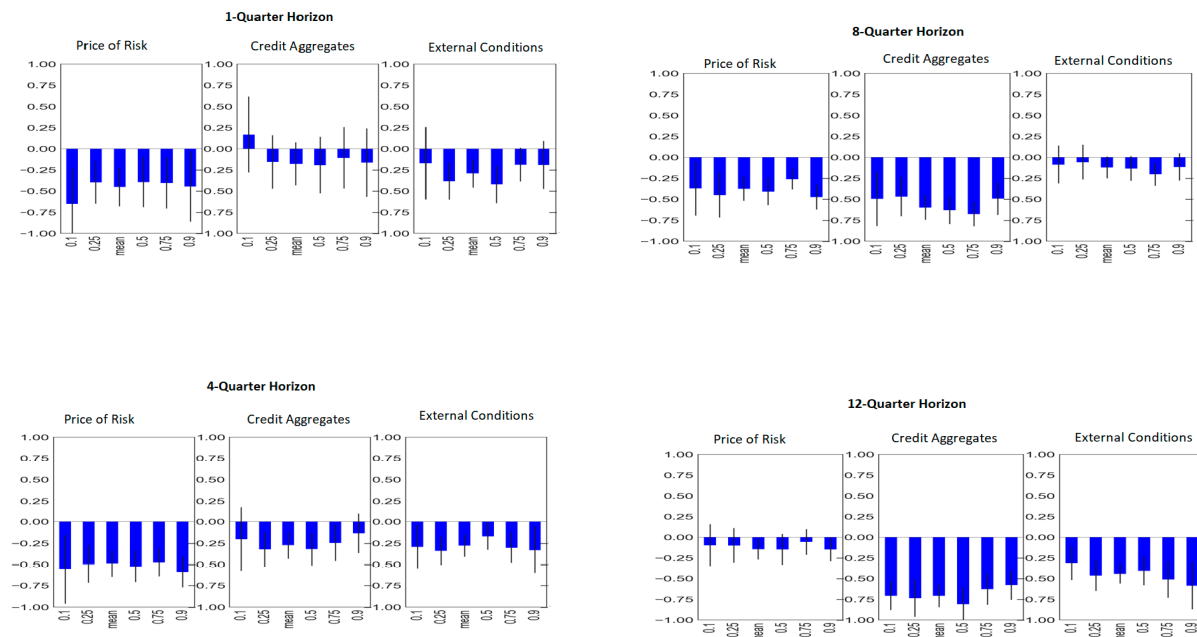
⁸ Standards linear regressions consider the impact of the regressors on the conditional mean of the dependent variable, while quantile regressions investigate the impact of the regressors on various points (quantiles) of the dependent variable's conditional distribution.

⁹ For an introduction to quantile regression, see Koenker, (2005).

economy is already-highly leveraged. That said, rising credit aggregates signal higher downside risks over the medium term (two to three years) than in the short term (one year).

- *External conditions* provide some valuable information about downside risks to growth both over short and medium term. The strongest effect of tighter external conditions is mainly at the three-year horizon and at the right tail of the GDP growth distribution.

Figure 3. Quantile Regressions Coefficients



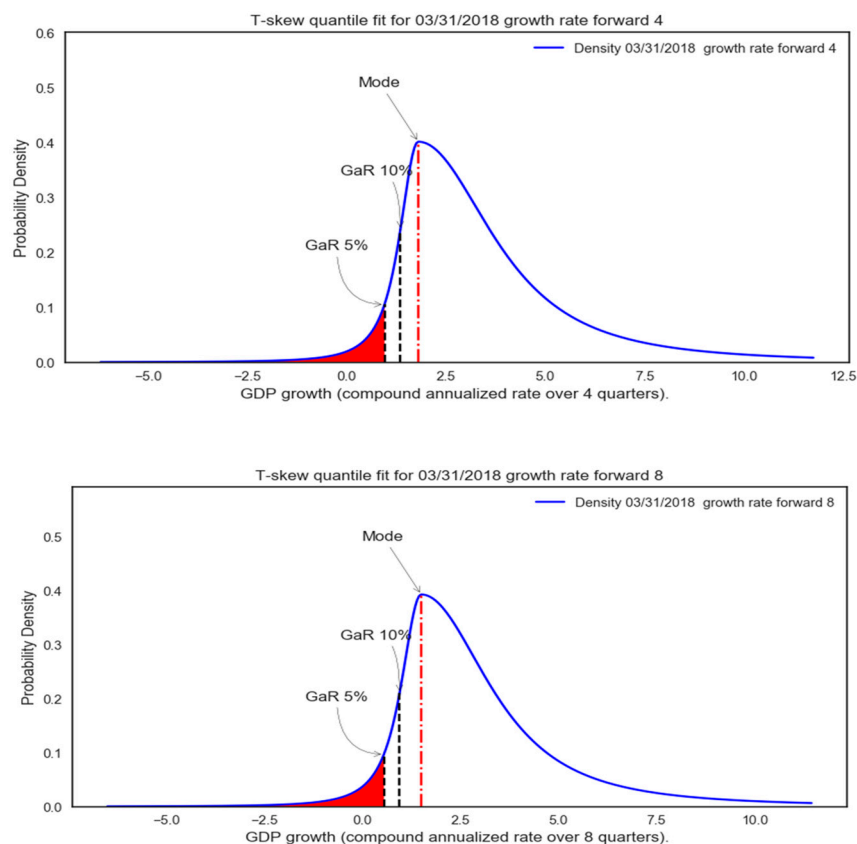
Source: IMF staff calculations.

Note: The vertical lines in the blue bars denote confidence intervals at 10 percent and, when they cross the x-axis, this signals the absence of statistical significance of the predictor.

Estimation of Downside Tail Risk to GDP Growth

15. To estimate the tail risks around the baseline, a skewed t distribution is fitted on the empirical conditional quantile function for each specific time horizon. Further details are discussed in the Adrian *et al* (2016). The distribution is calibrated so that the mode (which is the most likely outcome taken by the distribution) is equal to the staff's baseline scenario. Using the skewed t fitted curve, a probability density function can be derived for future GDP growth at each time horizon.

16. Overall, the GaR model suggests moderate risks around the baseline for Portugal's GDP growth. Based on the financial conditions at 2018:Q1, a severely adverse outcome (given by the 5 percent left tail) is for GDP growth to fall below 1.3 percent one-year ahead, and below 0.9 percent in the two-to-three-year horizons. This is a rather benign risk outlook, given the still-elevated leverage, and reflects the dominating effect of the low price of risk, itself a reflection of supportive monetary policies at the euro area level and tight fiscal policies domestically.

Figure 4. Probability Densities of GDP Growth Four and Eight Quarters Ahead

Source: IMF staff calculations

E. Policy Implications and Conclusion

17. The analysis highlights the importance of the price of risk, leverage and credit growth as leading indicators of risks to GDP growth. The price of risk appears to provide the most powerful signal in the short term, while credit aggregates are the most significant predictor in the medium term. This finding is consistent with the volatility paradox (Brunnermeier and Sannikov, 2014), and is line with other empirical studies (GFSR, 2017).

18. The GaR model suggests contained downside risks to Portugal's growth projections at the current juncture based on financial conditions data, but credit growth should continue to be monitored given still high leverage. The moderate risk to growth identified by the GaR model reflects the impact of low credit spreads and volatility in the financial markets, in their turn reflecting the prevailing policy mix. Still, a repricing of risks and other shocks could be magnified by the still-high leverage, and lead to less favorable growth outcomes. Such context puts a premium on the timely detection of signs of excessive risk taking and the deployment of macroprudential policies.

Annex I. Data Sources

Variables	Description	Source
Interbank rate	Change in three-month Euribor	Bloomberg Finance L.P.; IMF staff
Change in Long-term Real Interest Rate	Percentage point change in the 10-year government bond yield, adjusted for inflation	Bloomberg Finance L.P.; IMF staff
Equity Returns	Log difference of the PSE-20 index	Bloomberg Finance L.P.
Sovereign Spreads	Yield on 10-year government bonds minus the benchmark country's yield on 10-year government bonds	Bloomberg Finance L.P.; IMF staff
House Price Returns	Log difference of the house price index	Bank for International Settlements; IMF staff
CDS	Change in expected default probability of sovereign bond at one year	Bloomberg Finance L.P.; IMF staff
Household debt to GDP	At market value	Bank for International Settlements
Non-financial corporate debt to GDP	At market value	Bank for International Settlements
Government debt to GDP	General government, consolidated data	Eurostat; IMF staff
Credit growth	Change in credit provided by domestic banks, all other sectors of the economy, and nonresidents; quarterly growth	Bank for International Settlements; IMF staff
VIX	Chicago Board Options Exchange Market Volatility Index	Bloomberg Finance L.P.
VSTOXX	EURO STOXX 50 Options Prices	Bloomberg Finance L.P.
Exchange rate	Change in US dollar per Euro	Bloomberg Finance L.P.
Oil prices	Change in Brent prices	Bloomberg Finance L.P.
Real GDP growth	Compound annual growth rate	Haver Analytics; IMF staff
Source: IMF staff.		

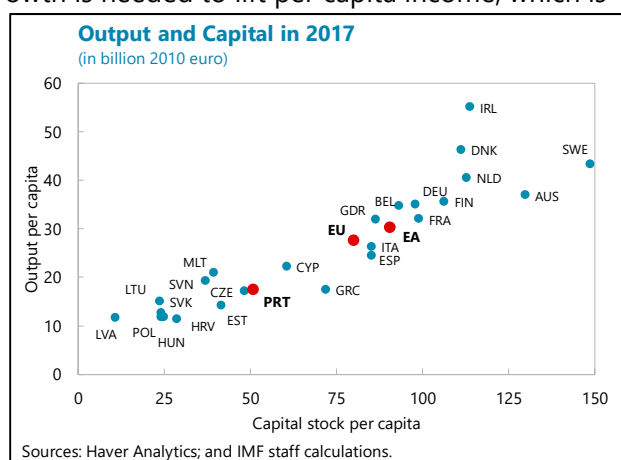
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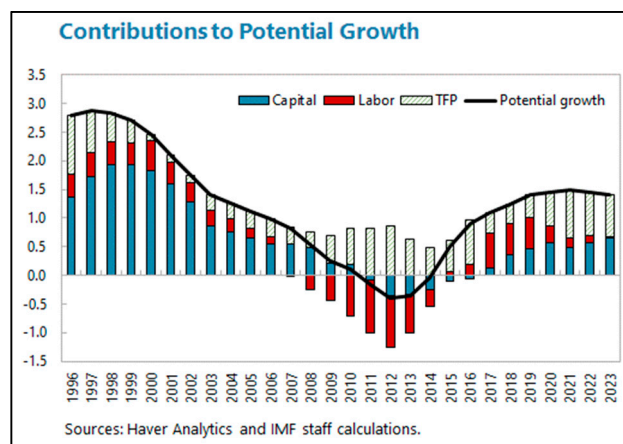
PRIVATE INVESTMENT IN PORTUGAL¹

A. Introduction

1. To accelerate growth and improve living standards, Portugal needs to promote capital accumulation and productivity. The stronger growth is needed to lift per capita income, which is below the EU average, with the gap widening over time, and to reduce debt ratios to safer levels. To achieve higher investment and total factor productivity (TFP) growth rates, Portugal needs to address structural and institutional problems impeding the efficient use of available technologies and resources. The main challenges to investing in Portugal include excessive business regulation, labor market rigidities, inadequate access to finance, and insufficient availability of skilled staff.²



2. Raising investment is crucial for supporting potential growth over the medium-term, given Portugal's adverse demographic trends. Potential growth has improved over recent years, supported by stronger contributions from TFP growth and labor, benefiting from the structural reforms and economic recovery. Going forward, ageing and decreasing population will weigh on labor's contribution, and intensify pressures on social programs, pensions, and health care. As the ratio of workers to total population declines, people will need to adjust their consumption by saving more for retirement. A more efficient labor market and human capital development would mitigate the impact of demographic pressures, and also help to boost investment. Higher investment in turn would also support labor productivity through capital deepening.



3. The paper proceeds as follows. In the next section, we look at investment dynamics over the last two decades, including a decomposition by economic sectors and by economic activity. In the third section, we analyze factors that supported or held back the post-crisis recovery of investment. In the fourth section, we discuss the investment and productivity growth paths required

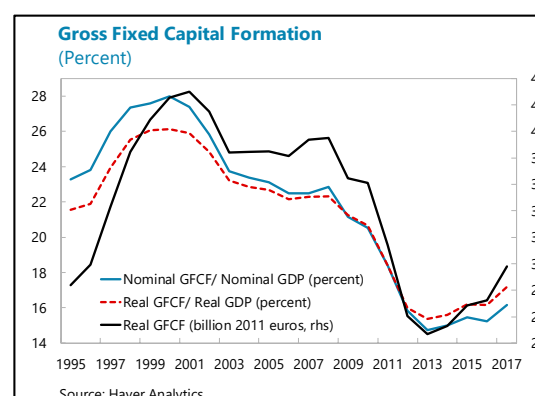
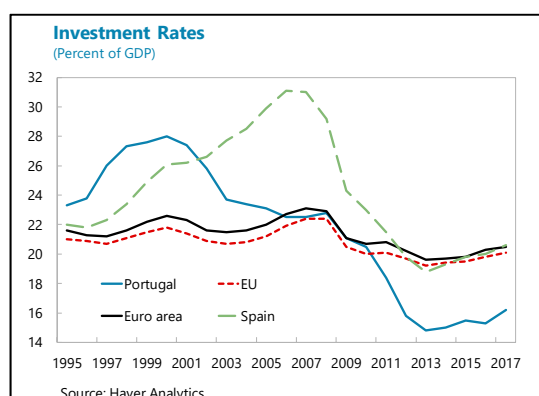
¹ Prepared by Koralai Kirabaeva.

² European Investment Bank (2017) and The World Economic Forum's Global Competitiveness Report 2017–2018.

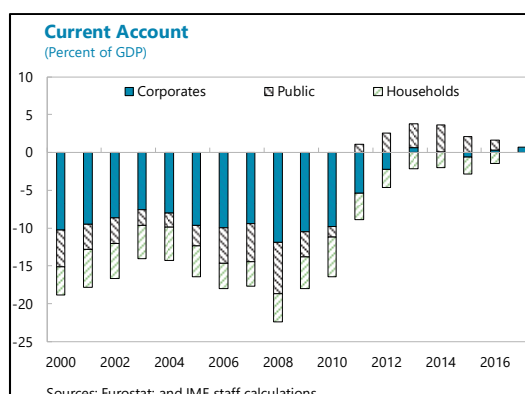
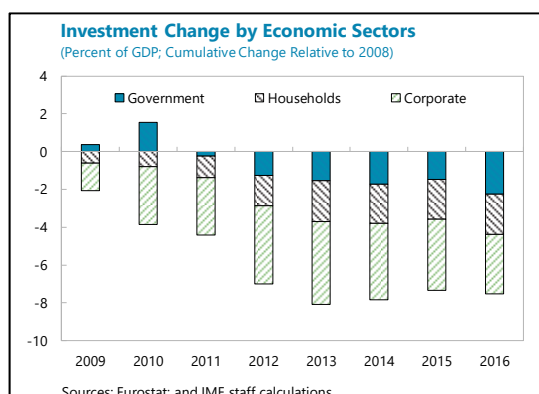
to sustain strong medium-term growth and identify structural bottlenecks to higher and more productive investment. The last section concludes with policy implications.

B. Investment and Capital: From Crisis to Recovery

4. Despite notable recovery over the past few years, the investment rate in Portugal remains among the lowest in EU. After rapid growth in the 1990s, real investment declined to a more moderate level during the years preceding the global financial crisis, despite a growing reliance on external financing. A brief pick-up in total investment in 2007–2008 on the back of higher public investment was followed by a sharp decline in the process of correcting external imbalances. In 2017 investment increased to 16.2 percent of GDP, still below the EU average of 20.1 percent. With gross domestic saving increasing, the recourse to foreign financing diminished substantially in the last decade.

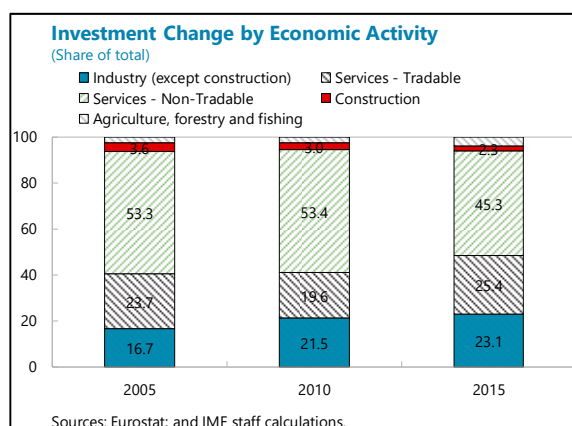
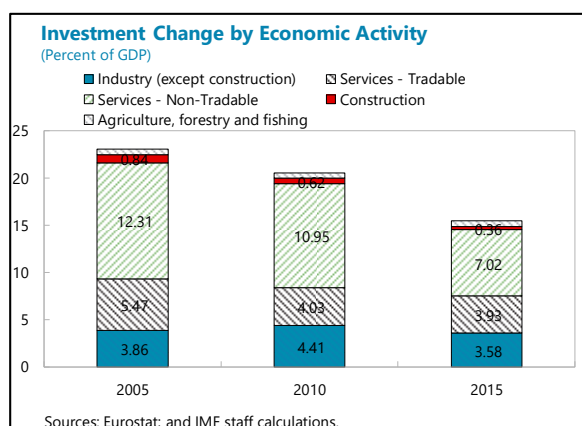


5. From a sectoral perspective, the recovery of investment has been supported primarily by corporate investment, with households' investment remaining mostly flat in recent years. The build-up of external imbalances and the subsequent adjustment were primarily driven by the private sector, notably by non-financial corporates (NFCs). Household investment has declined since 2000, flattening out at around 3.2 percent of GDP in the past few years. Household saving has declined post-crisis to 3.6 percent of GDP in 2017, low by advanced countries standards. The divergent trends of corporate and household saving in Portugal are in line with a shift in the composition of saving away from the household sector and toward the corporate sector at the



global level (Chen, Karabarbounis, and Neiman, 2017).

6. In recent years, the investment composition shifted toward tradable sectors, reflecting the post-crisis structural transformation of the economy. Prior to the crisis, investment was concentrated mostly in non-tradable sectors, particularly, in real estate and construction, financed through external borrowing. While investment has contracted across all sectors as a share of GDP since that time, the adjustment was mainly driven by the non-tradable services and construction sectors, increasing the share of investment accounted for by tradable sectors.



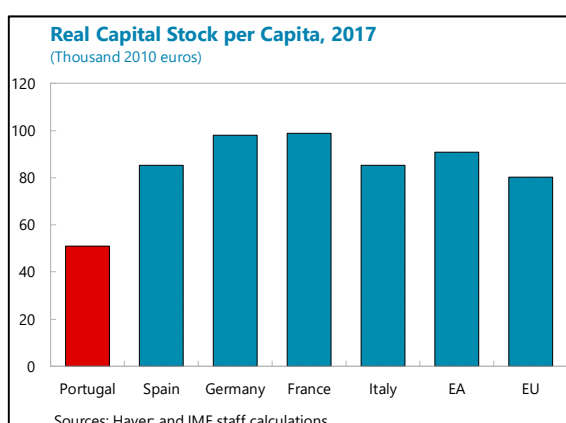
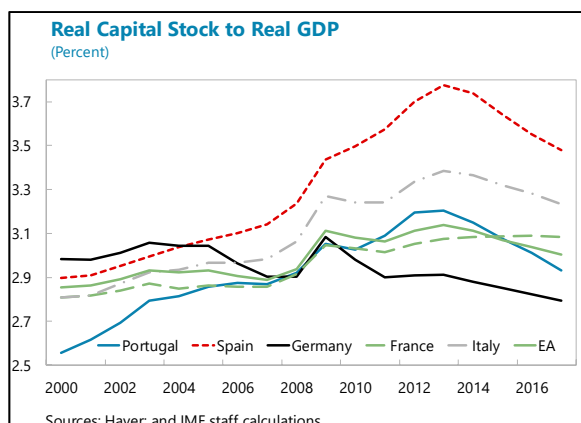
7. R&D investment is low and led mostly by the public-sector. Spending on R&D in 2015–16 stood around 1 ¼ percent GDP, below the pre-crisis peak of 1.6 percent and also below the OECD and EU averages.³ Portugal outperforms the OECD and EU averages in some indicators,⁴ such as “the number of researchers per thousand employed,” and also scores well in “availability of scientists and engineers”, “quality of scientific research institutions”, and “technological readiness”. However, Portugal lags compared to the EU averages on “innovation activity” (although it improved in 2017 compared to 2016⁵) and “facilitating business entry, growth, and exits for start-ups”. R&D and innovation resources are mostly concentrated in non-commercial sectors, weakening technology absorption and diffusion and, as a result, limiting their positive impact on productivity growth.

8. Portugal’s estimated capital stock is below the EU average, both in percent of GDP and per capita, as lower investment during the crisis years took its toll. Lower capital together with stronger employment in recent years resulted in a decline in capital intensity (the amount of fixed capital per worker), adversely affecting labor productivity.

³ Several EU co-funded investment projects are planned for the next four years, focused on R&D and innovation.

⁴ The World Economic Forum’s Global Competitiveness Report 2017–2018.

⁵ European Investment Bank (2017).



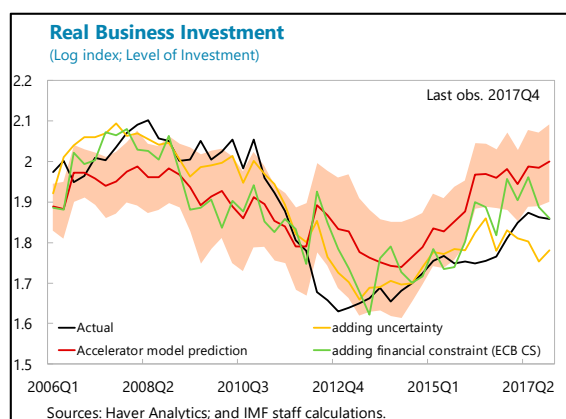
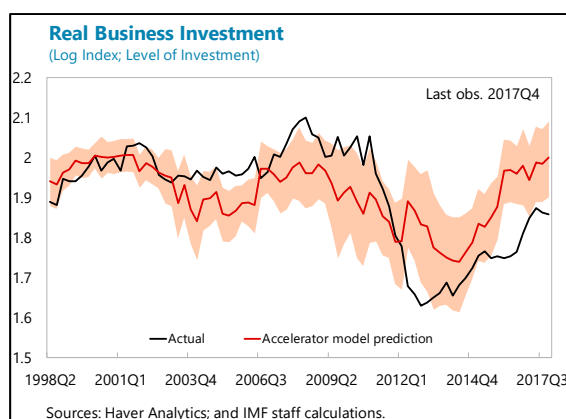
C. Business Investment: Drivers Supporting the Recovery

9. The business investment recovery appears to be weaker than what could be expected based on economic activity.

The literature suggests that a slump in business investment after a crisis is usually a symptom of weak economic activity. The conventional accelerator model of investment assumes that firms adjust their capital stock gradually toward a level that is proportional to output, investing to replace capital that depreciates over time. Therefore, investment is supposed to respond positively to current and lagged changes in output and to the lagged capital stock:

$$I_t = \alpha + \sum_{i=0}^N \beta_i \Delta K_{t-i}^* + \delta K_{t-1},$$

where I_t denotes real business investment and ΔK_t^* denotes the change in the desired capital stock, which is assumed to be proportional to the change in output: $\Delta K_{t-i}^* = \gamma Y_{t-i}$.⁶ Estimating this model with Portuguese data, suggests that investment in Portugal remains below the level that would be predicted given the pace of economic activity.



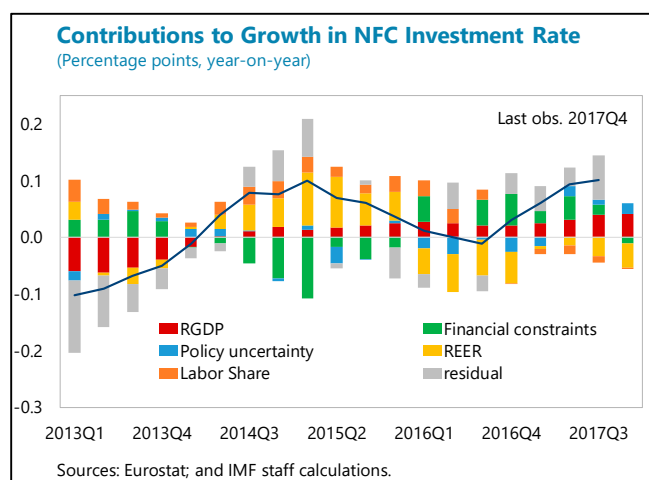
⁶ This is the version applied to selected Euro Area economies in International Monetary Fund, 2015, "Private Investment: What's the holdup?", World Economic Outlook, April 2015, Chapter 4.

10. Financial constraints and policy uncertainty appear to be the most relevant factors holding investment back, especially in economies affected by the crisis.

Adding those two factors⁷ into the accelerator model helps to explain investment dynamics better (IMF, 2015). Financial constraints are measured as the percentage of respondents in the European Commission's Business and Consumer Surveys that identify such constraints as a factor limiting their business production. Uncertainty is measured by the Baker, Bloom, and Davis's (2013) index of policy uncertainty, which is based on newspaper coverage of policy-related economic uncertainty. These factors, added to economic activity in the accelerator model, bring model-predicted investment closer to observed investment. Using alternative measures such as the Composite Indicator of Financial Stress (Braga, Pereira, and Reis, 2014) and survey-based uncertainty measures (Manteu and Serra, 2017), the model tracks investment dynamics better during the crisis and produces similar fit for the post-crisis years (see Figure 1 in Annex I).

11. Investment in Portugal is also hampered by still-high leverage. At end-2017, the nonfinancial corporate sector's debt stood at 137.7 percent of GDP.⁸ Already high-debt contributes to the presence of financing constraints experienced by firms. In addition, the still large stock of bad loans on their books constrains banks' ability to grow their balance sheets and provide substantial new credit for investment. The smaller firms, which are more reliant on bank financing, were found to have a lower investment response to aggregate demand (IMF, 2016a).

12. The reduction in labor costs and the improved competitiveness mitigated the impact of financial constraints by boosting firms' internal financing. The profit margins of NFCs were on a declining path prior to the crisis, with this trend reversing in 2009. The chapter on "Deleveraging and Profit Margins in Portugal" analyzes the determinants of NFC profit margins and finds ULCs to be negatively related to profit margins. Declining labor costs and a weaker REER contributed to the recovery of investment by NFC from 2013.⁹ The impact of lower real ULC and weaker REER is interconnected and is in line with research findings that depreciations support internal financing opportunities, spurring investment (Berg, Dao, Minoiu, and Ostry, 2015).



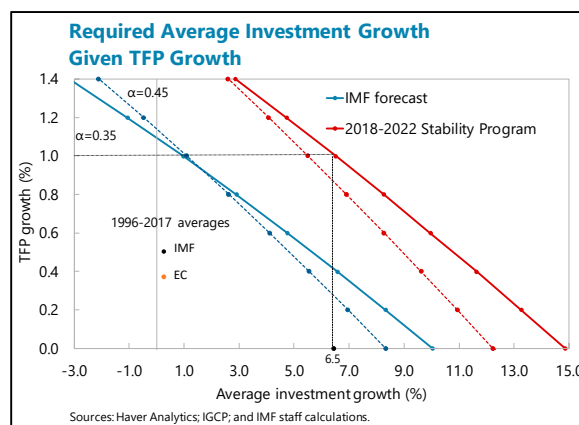
⁷ The most recent EIB Investment Survey identifies these two factors among the main barriers to investment in Portugal (EIBIS, 2017).

⁸ Non-consolidated data.

⁹ The regression estimation results are available in Annex I.

D. Investment and Medium-Term Growth: Structural Bottlenecks

13. Portugal needs higher investment and productivity growth rates to support strong real GDP growth in the medium term. Extending the production function framework developed in IMF 2017a, we derive the average annual TFP growth rates needed to achieve the real GDP growth path envisaged in the 2018 Stability Program, for different investment growth paths, given demographic trends affecting labor's contribution to growth. The implied TFP growth in the Stability Program forecast is ambitious (around 0.9-1.0 percent¹⁰) compared to the historical average of around 0.5 percent. On one hand, the ongoing changes in skills, investment allocation and export orientation may justify expectations of a higher TFP growth going forward. On the other hand, labor productivity has been subdued in recent years, in line with the slowdown in productivity growth in advanced economies. And the increased openness of the economy makes it more vulnerable to external shocks, including "trade wars." To enhance their impact on aggregate productivity, improvements in education and skills need to be accompanied by more efficient labor utilization.¹¹



Investment and GDP Real Growth Forecasts					
	2018	2019	2020	2021	2022
SP 2018					
GDP	2.3	2.3	2.3	2.2	2.1
investment	6.2	7.0	7.1	6.4	5.5
IMF					
GDP	2.3	1.8	1.5	1.4	1.4
investment	7.6	6.3	5.0	4.2	3.4

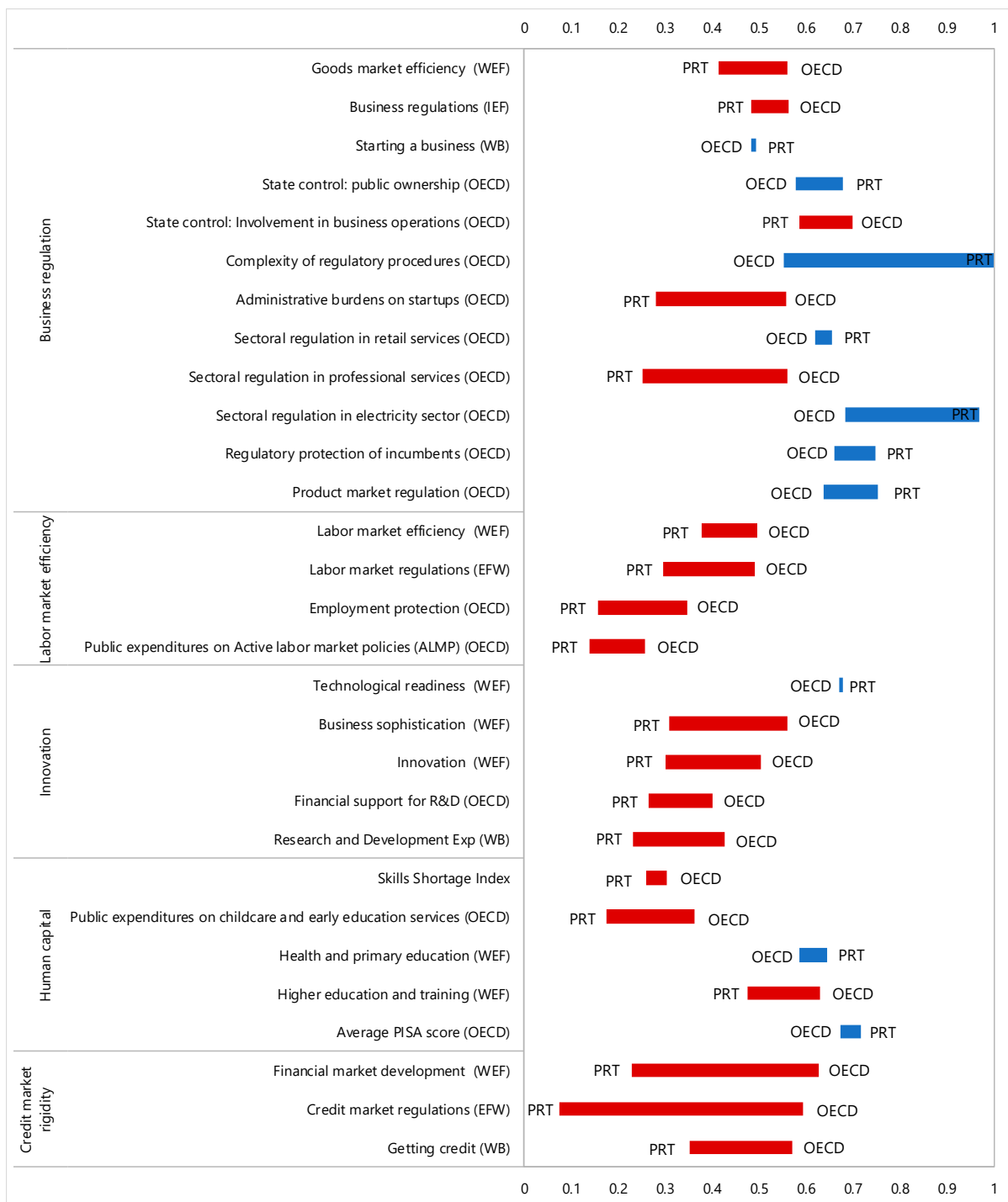
14. According to available surveys, boosting investment and productivity would require addressing a number of structural bottlenecks. The 2017 EIB Survey on Investment identified the following as the main obstacles to investment activities: *uncertainty about the future, business regulations, energy costs, labor market regulations, and availability of skilled staff*. Similarly, the World Economic Forum's Global Competitiveness Report identifies these areas as constraints to competitiveness: *unpredictable regulatory environment, inefficient judicial system, high public debt, labor market rigidities, access to finance, and functioning of banking system*. Figure 1 illustrates these structural gaps and others for Portugal. Some of the indicators are based on expert judgement and survey of hard data, and are subject to uncertainty around point estimates. The rankings reflect relative (and not absolute) performance.

¹⁰ The estimates depend on parameters such as capital's share in income (Alpha). However, for any Alpha in the range of 0.35–0.45, the implied TFP growth in the Stability Program projections is significantly higher than the historical average.

¹¹ Alves (2017) suggests that misaligned incentives and labor market segmentation resulted in labor and skill misallocation, limiting the impact on aggregate productivity growth of the substantial improvements in education achieved so far.

Figure 1. Structural Reform Gaps

The table below shows Portugal's position vis-à-vis OECD countries on a number of structural indicators. All indicators are normalized to take values between 0 (min) and 1 (max), with higher values indicating better outcomes. The blue bars correspond to indicators where Portugal exceeds the OECD average, while red bars correspond to indicators where Portugal falls below the OECD average.



Sources: OECD, World Bank, WEF, IEF, EFW, and IMF staff calculations.

E. Policy Implications

15. Policy efforts should target the improvement of the regulatory environment, stronger competitiveness, and more efficient labor utilization.

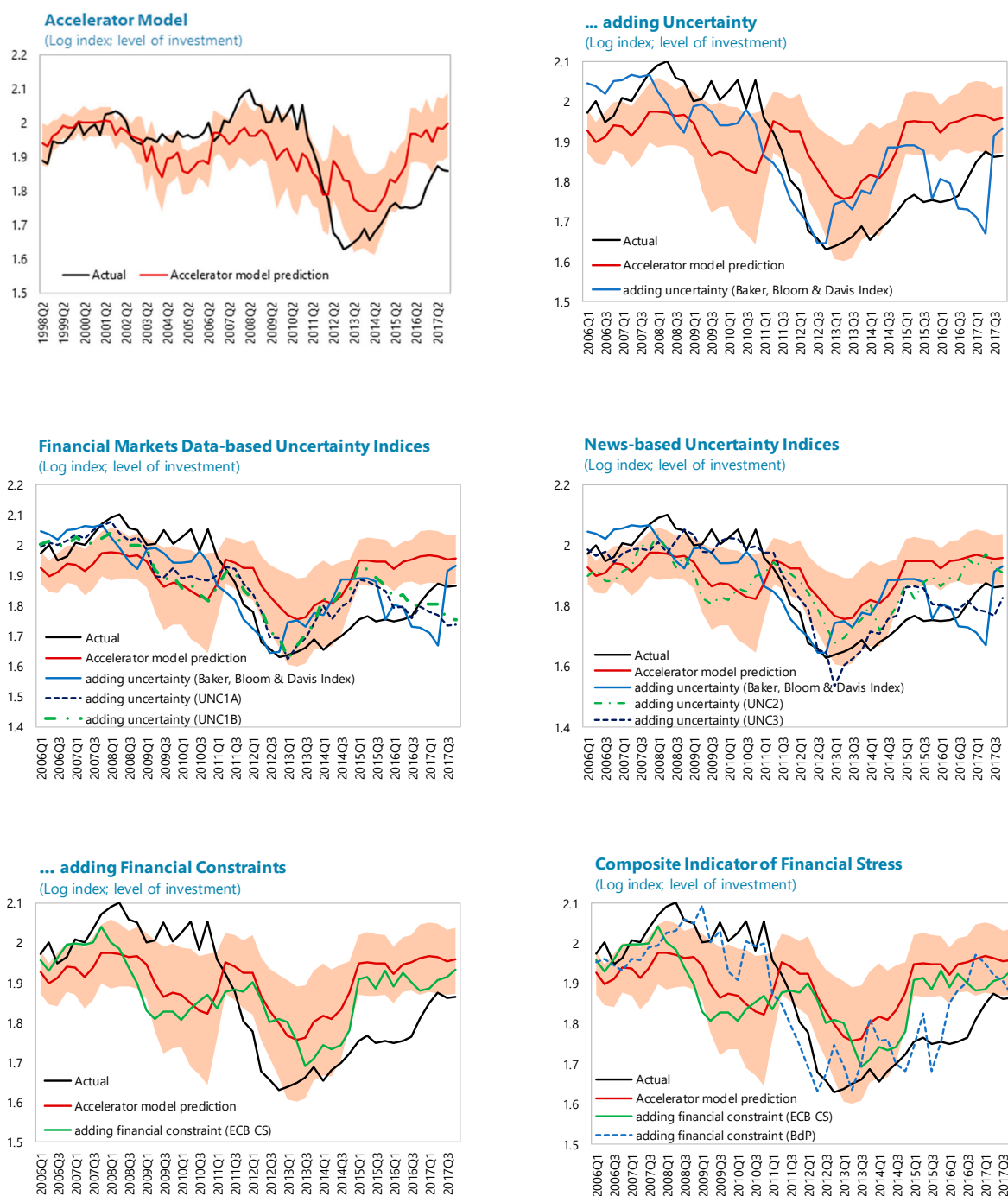
- Business regulation and efficiency of judicial processes.** A stable regulatory and tax environment is important for firms' growth and ability to integrate into global value chains.¹² Several measures have been implemented to reduce the regulatory burden and promote competition in network industries such as energy and transport; however, these sectors continue to be characterized by low levels of competition. High prices in these sectors affect competitiveness in the tradable sector as intermediate inputs produced there are important cost determinants for firms. The efficiency of judicial processes in cases of distressed or unviable debtors has improved, with reduced length of proceedings and case backlogs, but some challenges remain in the administrative courts.¹³
- Labor market segmentation and rigidity.** A flexible labor market is key for the economy's capacity to absorb adverse shocks and facilitate structural change. The regulatory gap between permanent and temporary contracts needs to be reduced further to tackle the high labor market segmentation. Measures that may discourage some forms of job creation, such as surtaxes on some types of contracts, will tend to raise the equilibrium level of unemployment and therefore require increased contributions from investment and productivity growth to deliver any given rate of economic growth. Wage growth should be maintained in line with developments in productivity and adequately reflect differing business conditions across firms.
- Human capital development.** A stronger human capital base would support innovation and requires appropriate investment in higher education and basic scientific research. Despite the significant improvements in indicators of educational attainment observed over time, skill-shortages remain an important obstacle to Portuguese firms' operation. Labor market policies are important for addressing skill shortages and mismatches.
- Investment financing.** The measures should focus on (i) restoring the banking system's intermediary role between savings and investment and (ii) encouraging domestic savings, including through internal capital generation in the corporate sector. Portugal would need higher domestic saving rates to sustain high enough investment rates to growth without hitting external sustainability limits.

¹² Excessive regulation, burdensome licensing regime, changing tax conditions were mentioned as obstacles to firm's growth and competitiveness during meetings with private sector representatives (see also Alves, 2017).

¹³ See the chapter on "Taking Stock of Reforming the legal and Institutional Framework for Debt Enforcement and Insolvency in Portugal".

Annex I. Alternative Specifications

Figure 1. Accelerator with Financial Constraints and Uncertainty



Sources: Consensus Economics; Haver Analytics; Bank of Portugal; and IMF staff estimates.

Table A1. Portugal Regression Estimations

VARIABLES (<i>in logs</i>)	log (NFC gross investment rate, 4Q MA)		
	1	2	3
Real GDP (4Q MA, lagged)	1.497*** (0.373)	0.904*** (0.109)	0.692* (0.353)
Financial constraints	-0.145*** (0.038)		
NFC debt to GDP (4Q MA)		-0.561*** (0.056)	-0.745*** (0.165)
Index of Policy Uncertainty	-0.037 (0.024)	-0.024* (0.012)	-0.087** (0.036)
REER	-2.896*** (0.778)	-0.817** (0.293)	-0.056 (0.925)
RULC	-1.386*** (0.694)		
Time period	2013-2017	2013-2017	2010-2017
Adj. R-squared	0.86	0.95	0.61
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * <0.1			

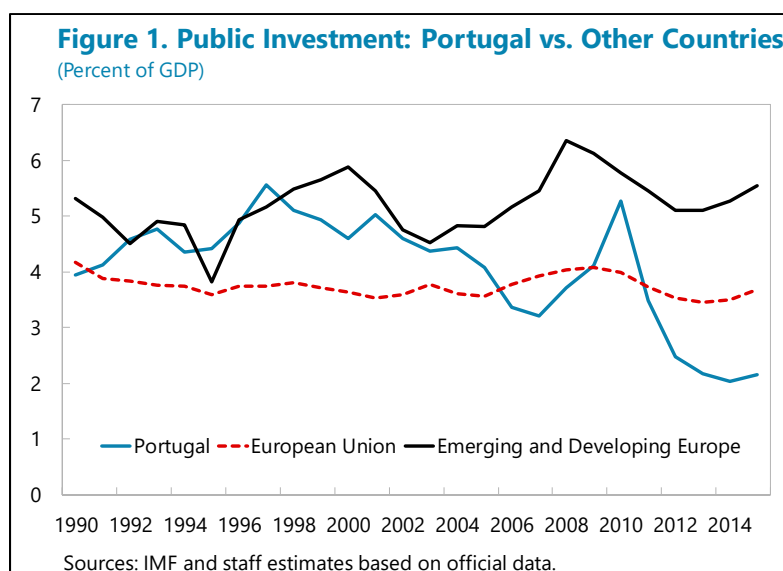
Sources: Consensus Economics; Eurostat; Haver Analytics; and IMF staff estimate.

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TRENDS IN TOTAL PUBLIC INVESTMENT AND CAPITAL STOCK¹

1. **This note reviews recent trends in Portugal's public investment and capital stock.**² The analysis is based on a template developed by the IMF in the context of the Public Investment Management Assessment (PIMA) to benchmark the performance of public investment and capital stock in a country.³ Over the last decades, Portugal saw a reduction in public investment spending as a share of GDP compared to European peers. While declining investment ratios have not caused a significant erosion of Portugal's capital stock (including with respect to regional peers) and public investment efficiency, the analysis shows that there is scope to improve access to infrastructure in some sectors. Going forward, improving public investment efficiency could create additional fiscal space to address existing infrastructure bottlenecks without affecting debt sustainability.



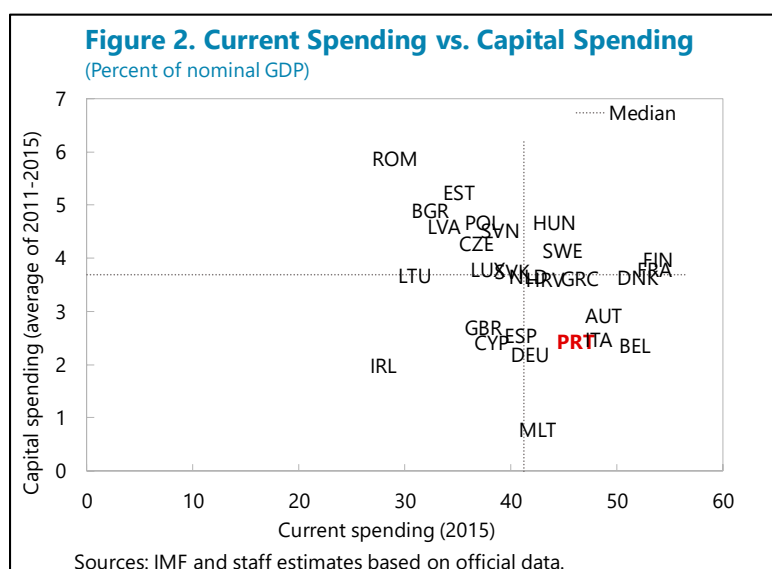
¹ Prepared by Valerio Crispolti.

² Public investment is measured as gross fixed capital formation of the general government (i.e., central plus subnational governments). This approach allows comparison of data across a large number of countries but ignores alternative modalities by which governments support overall investment such as investment grants, loan guarantees, tax concessions, the operations of public financial institutions, public-private partnerships (PPPs), and government-backed saving schemes). In addition, some entities controlled by the public sector—but outside the general government—undertake infrastructure spending that is not recorded as public investment (e.g., state-owned enterprises, parastatals, entities involved in social housing). Similarly, special purpose vehicles linked to PPPs contracts are typically classified as private, even if they are controlled by the public sector. These caveats are particularly relevant in the case of Portugal where a significant portion of infrastructure spending is undertaken outside of the general government perimeter.

³ The PIMA framework was first introduced in the 2015 Board Paper on “Making Public Investment More Efficient,” as part of the IMF’s Infrastructure Policy Support Initiative (IPSI). The PIMA is the IMF’s key tool for assessing infrastructure governance over the full investment cycle and supporting economic institution building in this area.

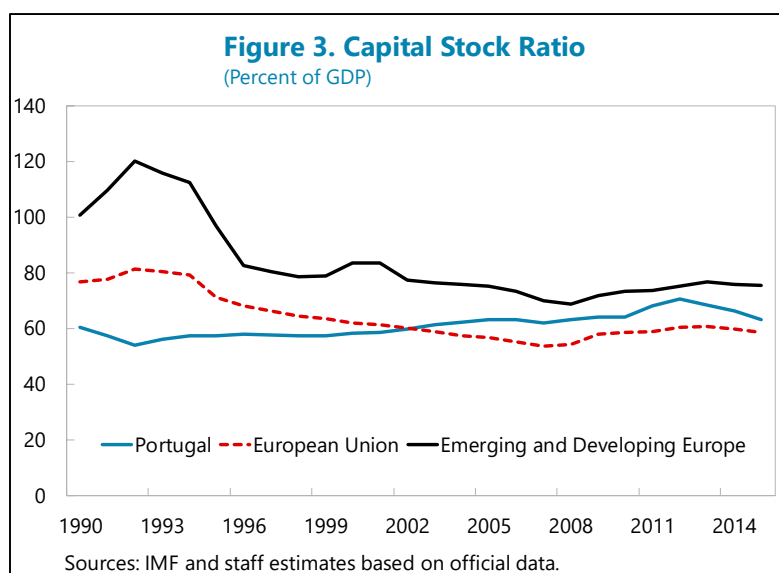
2. Portugal's public investment has decreased markedly over the last two decades as a ratio to GDP. In the 1990s, general government's investment stood at 4.6 percent of GDP on average, declining to 4.2 percent of GDP in the 2000s, and then gradually decreasing below 3 percent of GDP in 2010–2015 (Figure 1). This trend in public investment spending brought Portugal from levels above or in line European standards during the early 1990s to significantly below European averages in 2010–2015. During the financial crisis, the need for fiscal consolidation resulted in a widening of the difference with European partners.

3. In 2015, the share of capital spending to total spending was low compared to peers (Figure 2). In the aftermath of the crisis, Portugal's capital spending-to-GDP ratio was on average 1 percentage point lower than the median level in Europe. By contrast, the current spending ratio was significantly higher than in other European member countries. This indicates an unfavorable composition of public spending, arising in part from large consolidation needs during the crisis and the more rigid nature of current spending.

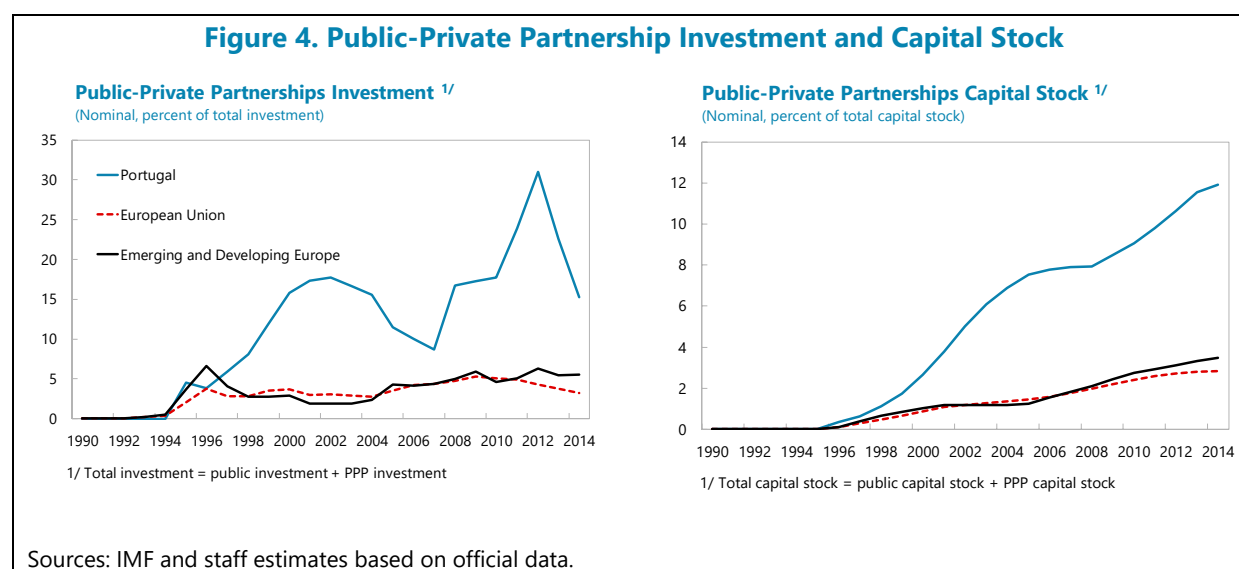


4. Despite declining investment levels, Portugal's public capital stock has remained relatively stable as a share of GDP (Figure 3). Portugal's estimated public capital-to-GDP ratio increased moderately from 60 to 64 percent until 2010.⁴ The ratio peaked at 70 percent during the financial crisis, reflecting the marked decline in nominal GDP, which more than offset the decline in the capital stock. At end-2015, Portugal's estimated capital stock had approximately returned to the 1990 level as a share of GDP. Against this backdrop, Portugal's estimated capital stock remained broadly in line with peers.

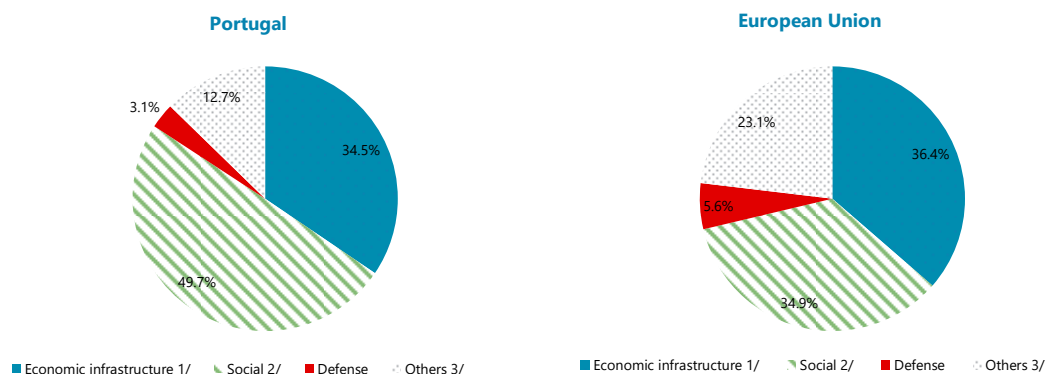
⁴ The public capital stock is estimated using the perpetual inventory method—drawing from the methodology employed by Kamps (2006) and Gupta and others (2014). See Annex I in IMF (2015) for the detailed methodology



5. Investment in public-private partnerships (PPPs) complemented public spending and led to a significant accumulation of capital (Figure 4). Since the mid-90s, Portugal's PPPs investment as share of augmented public investment (i.e., public investment plus PPPs investment) increased significantly, resulting in a marked accumulation of capital stock—above European peers. These trends underscore the important role that entities outside the general government perimeter might play in the case of Portugal compared to European partners.



6. About 80 percent of Portugal's general government capital spending is devoted to economic and social infrastructure (Figure 5). In 2015, social infrastructure (i.e., health, education, and social protection) represented half of total general government capital spending compared to one-third in the EU. At the same time, economic infrastructure (i.e., roads, bridges, buildings) accounted for around one-third of Portugal's central government investment spending in line with EU average.

Figure 5. Public Investment by Function in 2015

Source: IMF and staff estimates based on official data.

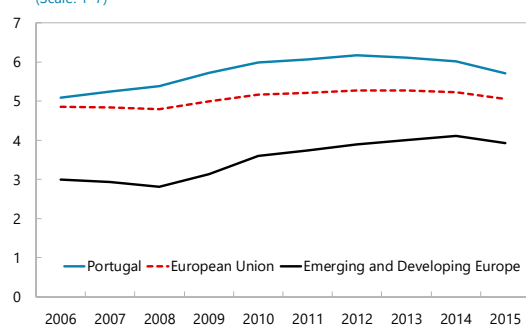
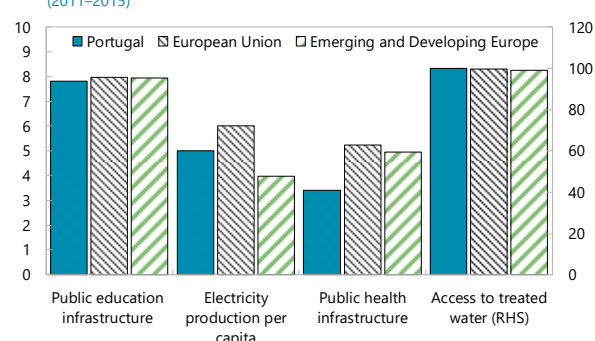
^{1/} Economic infrastructure is proxied by capital spending classified under “economic affairs” and includes public investment for transportation infrastructure, among other components.

^{2/} Social comprises of public investment in education, health, housing, social protection, and recreation and culture.

^{3/} Other includes public investment in general public services, safety and public order, and the environment.

7. Portugal’s indicators of infrastructure quality compare favorably to those for EU peers, but access appears limited in certain areas (Figure 6).⁵ The perceived quality of public infrastructure had been significantly above the average of European peers since 2006, even though the advantage narrowed somewhat after the 2010 financial crisis. At the same time, physical measures of access to infrastructure and service delivery show large variations, with some sectors lagging relative to EU countries. In recent years, Portugal had similar access to education, and treated water and sanitation services compared to other EU members; whereas, its infrastructure indicators in the health, and electricity sectors was below average.

⁵ It should be noted that survey-based indicators of quality of infrastructure do not cover social infrastructure, such as infrastructure services in health, education, or water sectors, which are part of the physical indicators. Thus, quality and physical indicators complement each other, allowing to get a better sense of the overall efficiency of public investment.

Figure 6. Indicators of Infrastructure Quality and Quantity**Perceptions of Infrastructure Quality**
(Scale: 1–7)**Quantitative Measure of Infrastructure 1/**
(2011–2015)

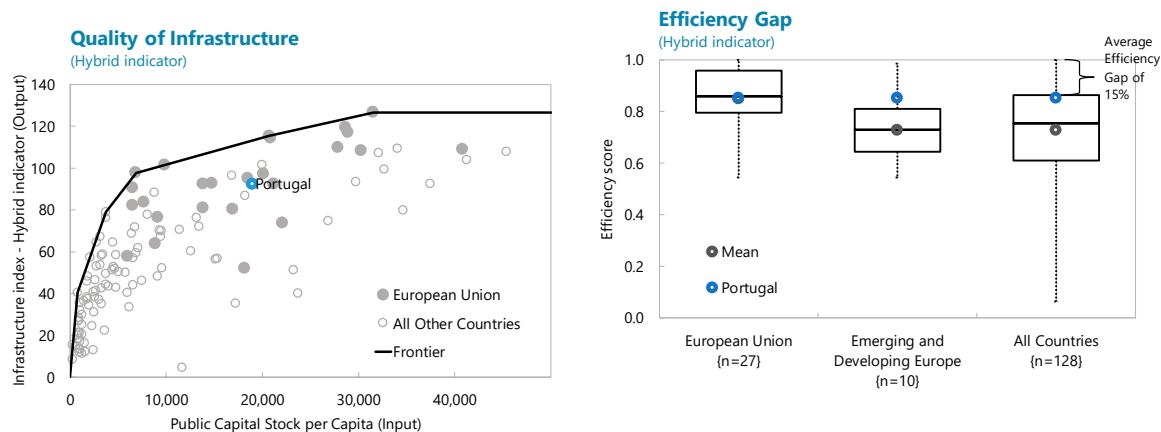
Sources: World Development Indicators, World Economic Forum, and staff estimates.

^{1/}Units vary to fit scale. Left hand axis: Public education infrastructure is measured as secondary teachers per 1,000 persons; Electricity production per capita as thousands of kWh per person; and Public health infrastructure as hospital beds per 1,000 persons. Right hand axis: Access to treated water is measured as percent of population.

8. On average, Portugal's public investment efficiency appears good, although there is room for improvement (Figure 7). A combined indicator of the perception of infrastructure quality, physical access and service delivery (i.e., a hybrid indicator) suggests that public investment was below its potential efficiency level in 2015.⁶ The resulting efficiency gap between Portugal and the most efficient European countries with comparable levels of public capital stock per capita averaged at about 15 percent—which is also approximately the average gap in the European Union. This suggests that less than one-fifth of Portugal's public capital stock either was not of the highest quality or failed to provide sufficient access or service delivery standards. Consequently, there is some scope for improving public sector investment efficiency.

⁶ For more information on how the hybrid indicator is constructed consult IMF (2015)

Figure 7. Indicators of Public Investment Efficiency in 2015



Source: IMF and staff estimates based on official data.

The box shows the median as well as the 25th and 75th percentiles, while the whiskers show the maximum and minimum values. The black square shows the average.

9. Improving Portugal's public investment efficiency would create fiscal space to address infrastructure bottlenecks, without affecting debt sustainability. However, achieving the authorities' infrastructure goals and tackling existing bottlenecks in the implementation of public investment projects will also require addressing key drivers of public sector inefficiencies. In this regard, developing a robust public investment framework and strengthening the institutions will be crucial.

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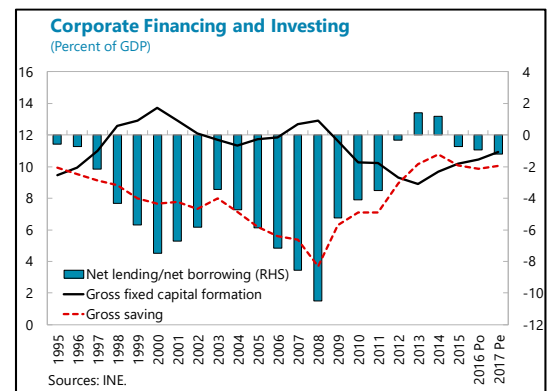
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DELEVERAGING AND PROFIT MARGINS IN PORTUGAL¹

A. Introduction

1. Although they have declined markedly, public and private debt levels in Portugal remain high. The non-financial corporate debt stock (including trade credits and advances) has fallen from its 2012–2013 peak of 213 percent of GDP on an unconsolidated basis to 176 percent of GDP as of September 2017.² While the household debt-to-GDP ratio fell by over 30 percentage points between end-2011 and end-2016, it only declined another 3 percentage points to 87 percent on an unconsolidated basis through September 2017. Finally, public sector debt has only declined from 170 percent of GDP on an unconsolidated basis at end-March 2015 to 159 percent at end-September 2017. These high public and private debt levels make Portugal vulnerable to changes in market conditions and may constrain aggregate demand and growth.

2. Investment growth is key for the evolution of leverage. Investment has been rising lately, but remains low by historical and European standards. Given Portugal's limited fiscal space, private investment should be the driving force behind higher growth over the medium term. The recent growth in private investment has provided an impetus to growth but has been financed through a mix of retained corporate earnings and debt. Gross corporate saving rose significantly during the adjustment period, but has remained broadly unchanged at 10 percent of GDP since 2015.



3. This paper analyzes the deleveraging process in the Portuguese economy and the determinants of profit margins and corporate savings. The first part of the paper uses an accounting approach to decompose changes in the leverage ratio—such as debt-to-GDP ratio—into contributions from changes in various determinants of debt and the effect of changes in nominal GDP itself—the latter being a familiar denominator effect of significant importance. The second part of the paper uses econometric analysis to discuss some of the determinants of profit margins in the corporate sector, including unit labor costs. Profitability is naturally important in the discussion of leverage, as internal resources have been a key source of funding for investments in Portugal. This will contribute to understanding how these resources are determined over the short and the long term using a macroeconomic perspective.

¹ Prepared by Andre Oliveira Santos.

² The difference between consolidated and unconsolidated figures is that claims within a sector are netted out on a consolidated basis while they are not on an unconsolidated basis. As a result, unconsolidated data will be higher than consolidated data.

B. Deleveraging in Portugal

Background

4. Deleveraging in Portugal has slowed since end-2016 as a result of benign financial and economic conditions. New loans to households and corporates rose sharply in 2017 on the back of low interest rates and improving consumer and business confidence. This has contributed to strengthen the economic recovery while reducing the pace of deleveraging. In 2017, the decline in the household debt-to-GDP ratio was 2.6 percentage points lower on an unconsolidated basis than a year earlier. In the case of nonfinancial corporates, the decline in the debt-to-GDP ratio was reduced to one third of its pace the previous year on an unconsolidated basis. Keeping leverage on a continued downward trajectory may require additional policy actions to stimulate household and corporate saving, and to further lessen the debt bias arising from tax laws.

5. The slowdown in deleveraging is not unique to Portugal. The empirical evidence related to deleveraging across the world since the 2007 financial crisis is mixed. Buttiglione, Lane, Reichlin, and Reinhart (2014) indicated that a legacy from the financial and European crises for the peripheral European countries was large debt levels in all sectors (public, non-financial corporations, and household) and high external debt. Moreover, Dobbs, Lund, Woetzel, and Mutaftchieva (2015) showed that since the beginning of the crisis, more countries have added debt than deleveraged. Finally, IMF (2016) reported that the gap between a sustainable debt level—consistent with asset changes net of valuation effects—and its actual levels in the household sector varied across countries. The gap was large and even growing in Australia and Canada. However, no gap was observed in Germany and Japan, and gaps shrunk relative to the pre-crisis period in Spain and the United States. IMF (2016) also indicated that nonfinancial corporations had expanded their leverage relative to the pre-crisis period in more than half the sample countries.

Methodology

6. The methodology used in this paper to analyze changes in leverage ratios—such as debt-to-GDP ratios—relies on the financial national accounts (or “flows of funds”). From the key balance sheet identity, the financial net worth (*FNW*) of an entity (such as a sectoral aggregate) is defined as the difference between outstanding financial assets (*FA*) and financial liabilities (*FL*):

$$FNW = FA - FL. \quad (1)$$

According to the national accounts framework, transactions and other non-transactional changes in assets and liabilities are reflected in changes in financial net worth (ΔFNW). Net lending (*NL*) is the result of above-the-line transactions such as tax collection, payment of salaries and wages, investment, while other changes (*OC*) include price effects, non-performing loan write-downs, and other factors that increase or reduce outstanding financial assets and/or liabilities:

$$\Delta FNW = NL + OC. \quad (2)$$

Given that changes in outstanding liabilities (ΔFL) consist of debt, equity, or other liability changes, equations (1) and (2) can be used to show that debt changes (ΔD) can be expressed as changes in financial assets (ΔFA) net of changes in equity (ΔE), other liabilities (ΔOL), net lending (NL), and other changes (OC):

$$\Delta D = \Delta FA - \Delta E - \Delta OL - NL - OC. \quad (3)$$

Dividing both sides of equation (3) by the debt level (D) yields the contribution of different components to debt changes:

$$\frac{\Delta D}{D} = \frac{\Delta FA}{D} - \frac{\Delta E}{D} - \frac{\Delta OL}{D} - \frac{NL}{D} - \frac{OC}{D}. \quad (4)$$

7. To assess deleveraging across the economy, debt levels can be compared to different metrics. The simplest metric is the gross domestic product (GDP), widely used to assess debt sustainability.³ Differentiating the debt-to-GDP ratio and using (4) yields an expression with two parts on the right side of the equation:

$$\Delta\left(\frac{D}{Y}\right) = \frac{D}{Y} \left(\frac{\Delta FA}{D} - \frac{\Delta E}{D} - \frac{\Delta OL}{D} - \frac{NL}{D} - \frac{OC}{D} \right) - \frac{D}{Y} \frac{\Delta Y}{Y}. \quad (5)$$

The first part consists of the contribution of the different components to debt changes adjusted by the debt-to-GDP ratio, while the second part captures the effect of GDP changes also adjusted by the debt-to-GDP ratio. In the following section we use this decomposition to examine the evolution of leverage in different sectors of the Portuguese economy.

Deleveraging

8. The Portuguese economy has experienced different degrees of deleveraging across different sectors. Figure 1 plots the deleveraging decomposition in equation (5) for the various sectors of the economy on a cumulative basis; that is, percentage point changes in the debt-to-GDP ratio and its components are added to previous years' changes, yielding a cumulative figure over 2012:Q1–2017:Q3.

9. Portuguese households reduced their leverage—proxied by the household debt-to-GDP ratio—by 6 percentage points during 2012:Q1–2013:Q2 on an unconsolidated basis. Their (cumulative) saving efforts, largely represented by rising net lending, amounted to 5 percentage points of the ratio over the same period. Since then, the leverage reduction has been restricted to an additional percentage point as of end-2017:Q3. The small reduction in leverage is more than fully explained by an expansion (adjusted by the debt-to-GDP ratio) in nominal

³ Another metric could consider equity. The debt-to-equity ratio provides information on how much debt as a percentage of shareholders' equity has been used to finance a company's assets. Differentiating the debt-to-equity ratio also yields an equation with two similar parts:

$$\Delta\left(\frac{D}{E}\right) = \frac{D}{E} \left(\frac{\Delta FA}{D} - \frac{\Delta E}{D} - \frac{\Delta OL}{D} - \frac{NL}{D} - \frac{OC}{D} \right) - \frac{D}{E} \frac{\Delta E}{E},$$

which can also be interpreted in the same way as equation (5).

GDP, saving (net lending), and non-transactional changes in financial assets and liabilities during 2015:Q1–2017:Q3. One reason deleveraging has been less than the sum of those factors is that households also have expanded significantly their holdings of financial assets.

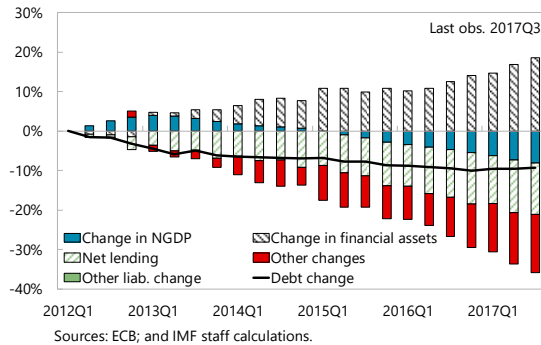
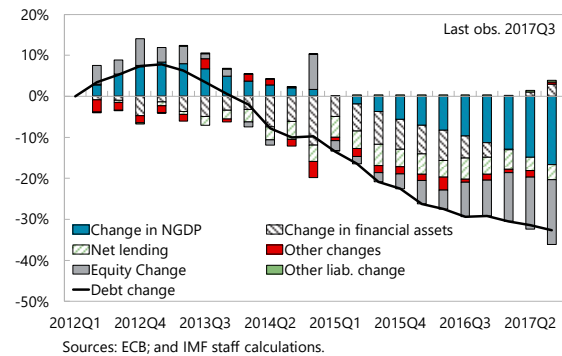
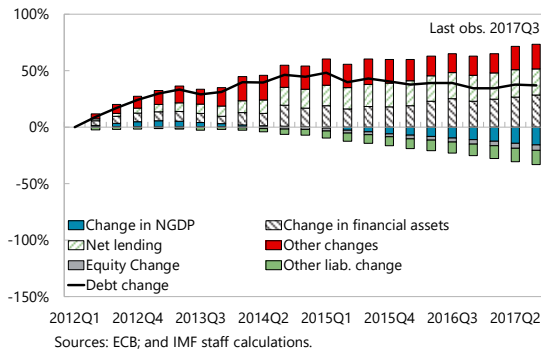
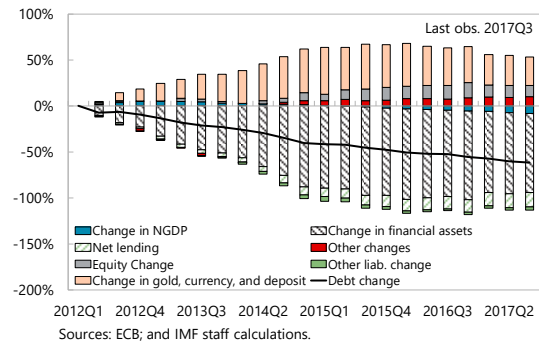
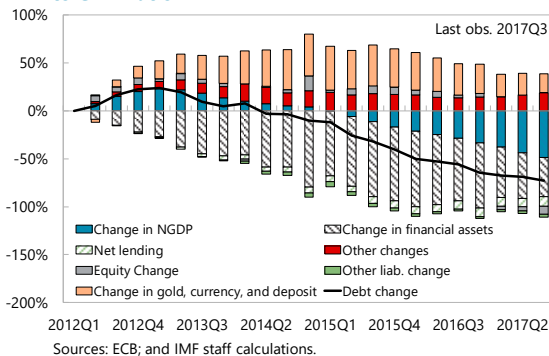
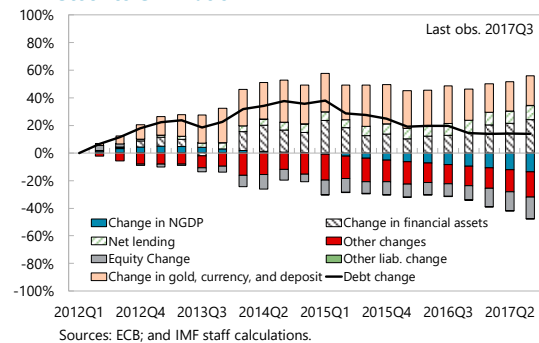
10. Portuguese corporates have made progress in reducing their leverage. The bulk of the 33 percentage-point decrease in the leverage ratio by *non-financial* corporates on an unconsolidated basis has been explained in about equal parts by a rise in nominal GDP and an increase in equity (adjusted by the debt-to-GDP ratio). It thus appears that the reduction in the debt bias arising from tax laws since the beginning of the Portuguese adjustment program has encouraged capital augmentations in Portuguese non-financial corporates. Meanwhile, Portuguese *financial* corporates, including banks, have experienced a strong decline (61 percentage points) in their leverage as a ratio to GDP. This has been mostly accompanied by a large drop (86 percentage points, adjusted by the debt-to-GDP ratio) in financial assets. In other words, financial corporates have been shrinking their balance sheets, and a major part of this process has been the contraction in bank credit, which is only ending now.

11. For the public sector, the buildup in leverage from the response to the European crisis is gradually reverting. The leverage ratio expanded by 48 percentage points during 2012:Q1–2015:Q1. Since then, the reduction in leverage has amounted to 11 percentage points as of end-2017:Q3. This reduction has been supported by an expansion in nominal GDP which reduced the ratio by 16 percentage-point, with other factors broadly offsetting one another. As the government reaches its Stability and Growth Pact Medium-Term Objective of a positive overall fiscal balance (negative net lending), its pace of deleveraging is expected to firm up.

12. The decline in leverage in the Portuguese economy has been significant. Reflecting mostly deleveraging in both financial and non-financial corporates, the drop in the Portuguese economy's leverage amounted to 97 percentage points on an unconsolidated basis during 2013:Q3–2017:Q3. The fall in financial assets and the expansion in nominal GDP contributed to a decline of 41 percentage points and 49 percentage points, respectively, in the leverage ratio. However, the decline in the nonresidents' holdings of Portuguese debt on a *consolidated* basis amounted to only 24 percentage points during 2015:Q1–2017:Q3. The deleveraging on a consolidated basis has been driven mostly by a 13 percentage-point (of the ratio) expansion in nominal GDP and a five-percentage point rise in nonresidents' equity.

13. Overall, deleveraging has been significantly helped by rising nominal GDP since 2015:Q1. The crisis-period contraction in nominal GDP had contributed to growing leverage during 2012:Q1–2014:Q4. The strong recovery in nominal GDP since 2013 has favorably contributed to deleveraging. In some cases, it has become, perhaps, the more important driver of deleveraging, especially for non-financial corporates. Only in the household and public sectors has net lending⁴ contributed to deleveraging on a permanent basis.

⁴ Net lending, it must be remembered, includes capital spending such as investment in machinery as a negative item.

Figure 1. Deleveraging in the Economy**Households: Cumulative Change in the Debt Stock to GDP Ratio****Non-financial Corporates: Cumulative Change in the Debt Stock to GDP Ratio****Government: Cumulative Change in the Debt Stock to GDP Ratio****Financial Corporations: Cumulative Change in the Debt Stock to GDP Ratio****Total Economy: Cumulative Change in the Debt Stock to GDP Ratio****Rest of the World: Cumulative Change in the Debt Stock to GDP Ratio**

C. Profit Margins and Unit Labor Costs in Portugal

14. Since 2012:Q1, net lending in Portuguese non-financial corporates has contributed three percentage points to a decline in the leverage ratio. This was only feasible because gross savings were above gross capital formation during most of 2012:Q1–2017:Q1. This highlights the importance of profit margins and gross savings on the ability of firms to make investments and pay back debt or acquire financial assets. The operating surplus or profits from business operations are added to and/or subtracted from other income and transfers to yield gross savings, which are the internal financing resources for investment, debt repayments, or acquisition of financial assets.

15. Analyses of the profitability in the Portuguese corporate sector have focused mostly on its financial determinants. Serrasqueiro (2009) indicated that sales' growth and size have a positive effect on profitability of NFCs while debt and liquidity have a negative and an insignificant impact, respectively. Nunes and Serrasqueiro (2015) noted that size, age, liquidity, long-term debt, and R&D expenditures are positive determinants of profitability in the knowledge-intensive business sector while operational risk is a negative determinant.⁵ Peltonen, Skala, and Rivera (2008) suggested that, while controlling for a number of factor (productivity, size, domestic competition, labor density, employment protection legislation, and product-market regulation), the effect of imports from emerging markets on the profitability of EU manufacturing firms was mostly negative, with the exception of Latin American imports which had a positive effect on profitability. Of the controlling factors, only productivity and size were statistically significantly different from zero, with a positive and negative effect on profitability, respectively. Canas (2015) suggested that profit margins (proxied by return on equity) in the tradable sector have recovered after 2012 partly on the back of wage cost reductions and a decline in relative prices in nontradable sectors.

16. This paper estimates a similar macro-model as in Finkel and Tuttle (1971), which studied the effect of changes in real unit labor costs (*RULC_t*) on profit margins (*PM_t*). Labor costs are an important element influencing corporate net lending, affecting corporate savings and thus the internal financing for new private investment. This highlights the usefulness of assessing the impact of changes in unit labor costs on corporate savings and investment by focusing on the determinants of profit margins from a macro perspective. Finkel and Tuttle (1971) analyzed the determinants of profit margins in a macro-empirical model that included: (i) unit labor costs as an important variable cost for firms, with a direct negative effect on profit margins; (ii) capacity utilization as a proxy for economic conditions, with a positive effect on profit margins; (iv) foreign competition in export markets, with a negative effect on profit margins; and (iii) inflation (GNP deflator) as a proxy for general macroeconomic conditions, with

⁵ Carvalho, Serrasqueiro, and Nunes (2013) similarly indicated that size, age, liquidity, long-term debt, and government subsidies have a positive impact on the profitability of healthy Portuguese SMEs while risk and growth have a negative and an insignificant impact, respectively.

a positive effect on profit margins, as it raises firms' ability to pass through cost increases.⁶ The variation of this model used in this chapter includes not only regressors such as real unit labor costs, capacity utilization (CAP_t), foreign competition ($OPEN_t$), and the inflation rate ($INFL_t$) as in Finkel and Tuttle (1971), but also additional terms (generically represented by ADD_t in the expression below) to capture the effect on profit margins of the real effective exchange rate ($REER_t$), debt ($DEBT_t$), and real oil prices ($ROIL_t$) (Annex I outlines all variables in more detail).

$$\log PM_t = \alpha_0 + \alpha_1 \log RULC_t + \alpha_2 \log CAP_t + \alpha_3 \log OPEN_t + \alpha_4 \log INFL_t + \alpha_5 \log ADD_t \quad (6)$$

Except for the inflation rate, all the determinants are in log terms, with the estimated coefficients providing elasticities. Excluding the negative effect of unit labor costs and real oil prices on profit margins, it is difficult to say *a priori* whether the other determinants should have either a positive or negative effect on profit margins. For instance, capacity utilization can be an indicator of strong demand, but its increase could lead to higher marginal costs and a decline in profit margins. Similarly, foreign competition could put pressure on profits, but it could also be accompanied by investment and an increase in productivity, with a positive effect on profit margins. A depreciation of the real effective exchange rate could make the tradable sector more profitable while an increase in leverage could have a positive impact on profit margins, if related to productive investments and if the corporate sector is not overindebted.

17. This chapter estimates the model for Portugal using the Autoregressive Distributed Lag (ARDL) bounds testing approach to cointegration by Pesaran and Shin (1999). Unit root tests indicate that profit margins and their determinants appear to be nonstationary variables in levels and stationary in first differences. Except for inflation and foreign competition, Granger causality tests show that profit margins do not have predictive power in forecasting the various determinants—in particular, real unit labor costs. Finally, the ARDL bounds testing approach to cointegration does not reject the long-run relationships between profit margins and their determinants. The relevant technical discussions and tests are found in Annex II.

18. Except for the estimated elasticity for foreign competition, the interpretation of the remaining elasticities in the cointegrating vector does not differ from the paper by Finkel and Tuttle (1971). Table 1, Panel A, which reports the coefficient estimates for the determinants of profit margins in the cointegrating vector, indicates that, except for real oil prices, most coefficients are statistically different from zero. It also suggests that: (i) a one-percent rise in unit labor costs lowers profit margins by about one percent in the long run; (ii) one-percentage point higher capacity utilization increases profit margins by about 1.4 percent; (iii) a one-percent intensification in the foreign competition, by requiring firms to be more efficient and productive over the long term, raises profit margins by about 0.4 percent; (iv) and a

⁶ In an era of price stability, inflation would be less an indicator of economic conditions than, perhaps, of demand-supply conditions. If prices rise as a result of demand pressures, profits would increase, at least, over the short term. However, if price rises as a result of supply shocks and firms are not able to pass in full their costs to their customers, then profit margins would decline.

one-percentage point higher inflation rate raises profit margins by 0.02 percent, reflecting better economic conditions and a higher demand for goods and services. Moreover, Table 1, Panel A also indicates that: (i) a one-percent depreciation of the real effective exchange rate improves profit margins by 0.3 percent as a result of changes in relative prices favoring the tradable sector; (ii) a one-percentage point higher leverage ratio lowers profit margins by 0.1 percent, as overleveraged firms have large debt service obligations; and (iv) one-percentage point higher real oil prices reduce profit margins by only 0.04 percent.

19. Except for the effect of higher real unit labor costs on profit margins, changes in the determinants have different short-term effects on profit margins from those in the long term. Table 1, Panel B, shows the estimates for the short-run effects of the determinants on profit margins in the error correction model. Increases in real unit labor costs have similar impact on profit margins both in the short and the long run. However, a rise in the capacity utilization affects profit margins negatively over the short term, perhaps as a result of higher marginal costs associated with higher capacity utilization. Similarly, a depreciation of the real effective exchange rate could give rise to lower profit margins as imported machinery and inputs become more expensive and the corporate sector takes time to adjust to new relative prices. Finally, inflation lowers profit margins, possibly indicating that the corporate sector is unable to pass higher costs in full to other sectors. The coefficient of the error correction model is at least as low as -0.7, indicating that any deviation in profit margins from their long-run equilibrium level would be reduced by about 70 percent per year.

20. Finally, the long-run relationship between profit margins and their determinants is stable. Figure 2 and 3 plot the cumulative sum (CUSUM) statistic and the cumulative sum of square (CUSUMSQ) statistic, respectively, and their five-percent critical bounds. Both statistics validate the long-run relationship between profit margins and their determinants and their stability as both statistics remain within the five-percent critical bounds.

Table 1. Portugal: ARDL Bounds Testing Approach to Cointegration

Panel A. ARDL long-run coefficients 1/

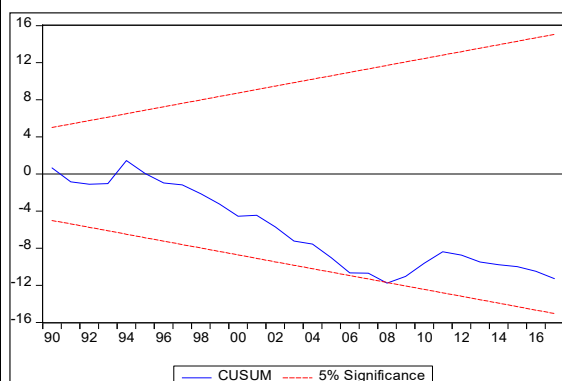
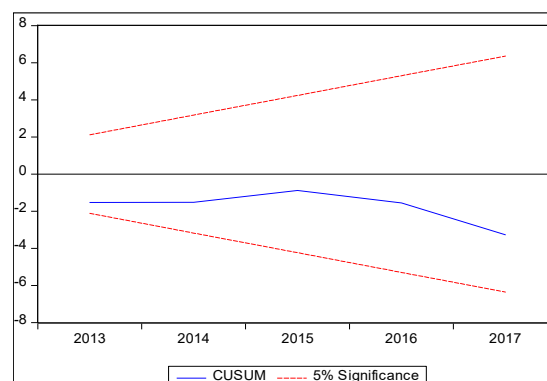
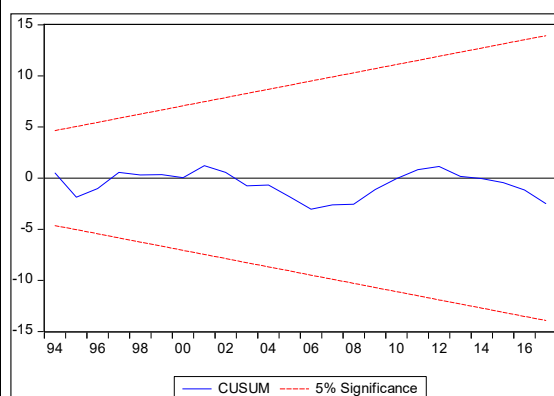
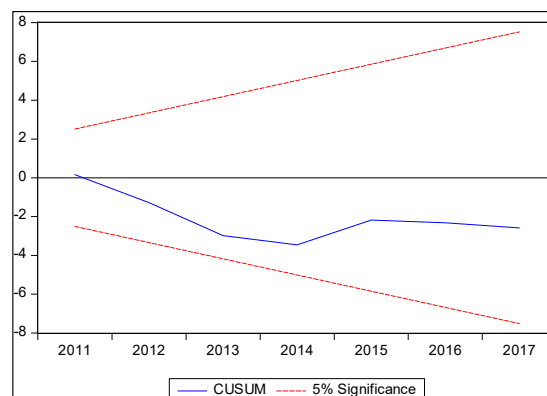
Variable	Basic Model (BM)	BM plus REER _t	BM plus DEBT _t	BM plus ROIL _t
Log(RULC _t)	-1.11 (0.00)	-0.86 (0.00)	-0.96 (0.00)	-1.17 (0.00)
Log(CAP _t)	1.54 (0.00)	1.53 (0.00)	1.34 (0.00)	1.68 (0.00)
Log(OPEN _t)	0.31 (0.01)	0.35 (0.00)	0.45 (0.00)	0.26 (0.08)
INFL _t	0.02 (0.00)	0.02 (0.00)	0.02 (0.00)	0.02 (0.00)
Log(REER _t)		-0.29 (0.02)		
Log(DEBT _t)			-0.11 (0.02)	
Log(ROIL _t)				-0.04 (0.06)

Panel B. Error correction model regression (ECM) coefficients 1/

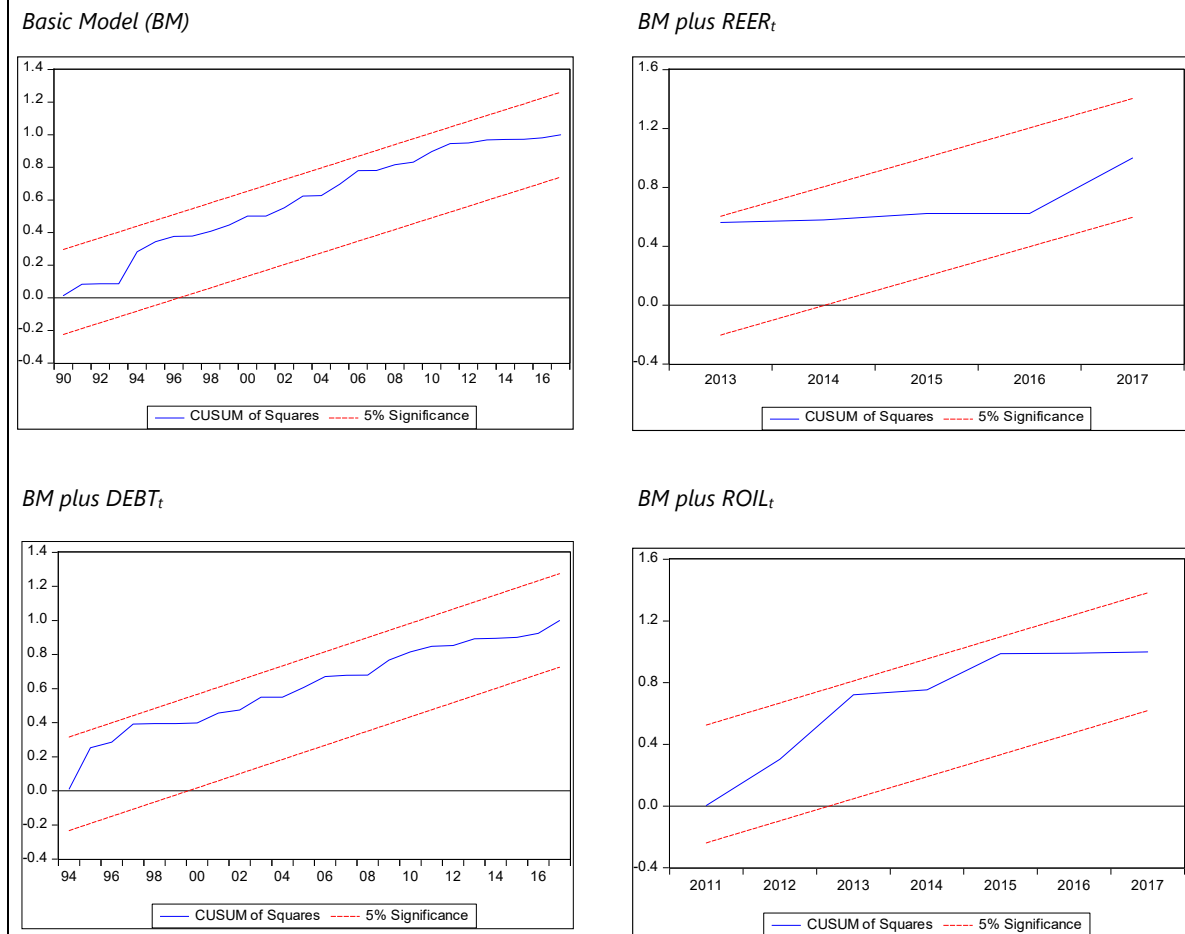
Variable	Basic Model (BM)	BM plus REER _t	BM plus DEBT _t	BM plus ROIL _t
DLog(RULC _t)	-1.93 (0.00)	-1.85 (0.00)	-1.87 (0.00)	-1.97 (0.00)
DLog(RULC _{t-1})	-1.14 (0.00)	-1.19 (0.00)	-1.86 (0.00)	-1.44 (0.00)
DLog(CAP _t)	-0.50 (0.11)	-0.46 (0.11)	-1.26 (0.00)	-0.59 (0.06)
DLog(CAP _{t-1})	-0.89 (0.01)	-1.38 (0.00)	-1.79 (0.00)	-1.03 (0.00)
DLog(CAP _{t-2})			-0.81 (0.01)	
DINFL _t	0.00 (0.92)	0.00 (0.15)	0.00 (0.18)	0.00 (0.42)
DINFL _{t-1}	-0.01 (0.02)	-0.01 (0.01)	-0.01 (0.00)	-0.01 (0.00)
DINFL _{t-2}			-0.01 (0.00)	
DLog(REER _t)		0.16 (0.41)		
D11		0.11 (0.02)		
D12		0.04 (0.36)		
D81-82				0.05 (0.30)
D10-14				0.09 (0.01)
ECM _{t-1}	-0.70 (0.00)	-0.88 (0.00)	-0.86 (0.00)	-0.91 (0.00)

Source: INE, Banco de Portugal, OECD, and Brithish Petroleum.

1/ P-values between parenthesis.

Figure 2. Stability of Long Run Coefficients: Cumulative Sum (CUSUM) Test*Basic Model (BM)**BM plus REER_t**BM plus DEBT_t**BM plus ROIL_t*

Sources: INE, Banco de Portugal, OECD, British Petroleum, and staff calculations.

Figure 3. Stability of Long Run Coefficients: Cumulative Squares (CUSUMSQ) Test

Source: INE, Banco de Portugal, OECD, British Petroleum, and staff calculations.

D. Concluding Remarks

21. Deleveraging in Portugal has been greatly supported by growth, although other drivers have also been important, especially in the non-financial corporate sector. Further deleveraging will help reduce the vulnerability of the Portuguese economy to changes in market conditions. As shown in section 2, different sectors have experienced different degrees of deleveraging. Except for financial corporates, common to all sectors is the major role played by higher nominal GDP in lowering leverage in recent years. Deleveraging in the nonfinancial private sector is of particular interest because economic growth could be impaired if non-financial corporates cannot increase their investments, but increasing investment could result in higher leverage. This tension can be resolved with stronger internal capital generation. In fact, internal resources have been a major source of funding for investments in the last several years, but they could decline if labor costs were to increase too fast.

22. Unit labor costs are in fact an important determinant of profit margins and corporate savings. Overall, econometric estimates in this paper point to a negative relationship between unit labor costs and profit margins over the short and long terms. This is as expected, as labor is a major variable cost in the production of goods and services by non-financial corporates in Portugal. An expansion in the capacity utilization has a negative effect on profit margins over the short term but a positive one over the long term as the additional capacity utilized comes at a higher marginal cost over the short term. An intensification of foreign competition requires firms to be more efficient and productive, increasing profit margins over the long term, although only on a marginal basis over the short term. A higher inflation rate has a negligible negative effect on profit margins over the short term and a positive one over the long term, reflecting the negative impact of supply shocks over the short term and higher demand for goods and services over the long term. A depreciation of the real effective exchange rate is associated with a decline in profit margins over the short term but with their improvement over the long term as a result of higher import prices over the short term and favorable relative prices for the tradable sector. Higher leverage lowers profit margins given the heavy debt service associated with overleveraged firms. Finally, higher real oil prices have a marginal negative effect on profit margins both on the short and long term.

Annex I. The Determinants of Profit Margins

1. This annex lists the variables used in unit root and Granger causality tests and the ARDL estimations and their respective sources. Unit root and Granger causality tests make use all available data to maximize the tests' power. The data sample is limited to the period 1977–2017 in the ARDL estimations.

- Profit margin (PM_t). Proxied by the ratio of operating surplus in the (nonfinancial and financial) corporate sector to GDP. For the period 1995–2017, the source is Instituto Nacional de Estatística. The data sample for period 1961–1994 is obtained by subtracting the economy operating surplus from Banco de Portugal's historical series by the operating surplus in the household, nonprofit organization, and public sectors and then using the percentage changes to obtain a consistent retroactive series. For the public sector, the operating surplus is the capital depreciation estimated in Pina and Aubyn (2005) and inflated to nominal values with the investment deflator.
- Real unit labor cost ($RULC_t$). The data sample ranges from 1961 to 2017 and the source is Haver.
- Capacity utilization (CAP_t). Data sample ranges from 1977 to 2017 and the source is Federal Reserve Economic Data (each annual data point is the average over the four quarters in the year).
- Foreign competition (FC_t). Proxied by the sum of exports and imports of goods and services to GDP. The data sample ranges from 1961 to 2017 and the source is Banco de Portugal, including the historical series.
- Inflation ($INFL_t$). Changes in the consumer price index. The source is Haver and the data sample ranges from 1961 to 2017.
- Real effective exchange rate ($REER_t$). The exchange rate is adjusted by unit labor costs and the source is OECD. The data sample ranges from 1970 to 2017.
- Debt ($DEBT_t$). Proxied by bank loans to the corporate sector. The source is Banco de Portugal. The data sample ranges from 1961 to 2017. The subperiod 1961–1978 is obtained from the historical series adjusted by 0.9 percent, which is the ratio of loans to nonfinancial corporates to total loans to nonfinancial corporates and households as of 1979 as the break between loans to nonfinancial corporates and households is not available.
- Real oil prices ($ROIL_t$). Proxied by British Petroleum real oil prices. Data ranges from 1961 to 2017.

Annex II. Unit Root, Granger Causality, and F- and t-Bound Tests

1. In the case of non-stationary variables, there exists no spurious relationship in equation (6) only if profit margins and their determinants are cointegrated. As a result, all variables in equation (6) need to be tested for non-stationarity and cointegration. Due to its poor size and power properties in small-sample data sets, the standard augmented Dicky-Fuller (ADF) test for non-stationarity tends to reject the null hypothesis of a nonstationary process when it is true (type I error) and not to reject it when it is false (type II error). The small-sample bias in the ADF test can be overcome with the Dicky-Fuller generalized least square (DF-GLS) de-trending test developed by Elliott, Rothenberg, and Stock (1996). Finally, cointegration between profit margins and their determinants can be tested with the Autoregressive Distributed Lag (ARDL) bounds testing approach to cointegration by Pesaran and Shin (1999)—and further developed in Pesaran, Shin, and Smith (2001). The approach is flexible enough to include variables that are integrated of order one ($I(1)$) and zero ($I(0)$) in the cointegrating equation.

2. Unit root tests indicate that profit margins and their determinants appear to be non-stationary processes at their levels and stationary at their first differences. Given the lower power of unit root tests in small samples, the unit root tests use data ranging, in general, from 1961 to 2017, with some variables having larger sample size than others (see Annex I for a data description). Table 1, Panel A reports the results of DF-GLS tests for profit margins and their determinants with a lag selection based on the modified Akaike information criterion and model specifications containing either a trend and an intercept, or only an intercept.¹ The null hypothesis of non-stationary profit margins with a specification containing only an intercept is rejected at the five-percent significance level but not at the one-percent significance level while the null hypothesis of a non-stationary inflation rate with a specification containing a trend and an intercept is rejected at five-percent significance level but not at a one-percent significance level. Table 1, Panel B shows the results of DF-GLS tests for the first differences in profit margins and their determinants with a lag selection also based on the modified Akaike information criterion and model specifications containing only an intercept. It indicates that, except for the first differences in real oil prices, the null hypothesis of non-stationary first differences in profit margins and their determinants is rejected at all significance levels. For real oil prices, the null hypothesis of non-stationarity is rejected at a five-percent significance level but not at the one-percent significance level.

¹ If the null hypothesis of a non-stationary determinant is not rejected with a model specification containing a trend and a constant, then the more restrictive model specification containing only a constant is used in the test.

Table A1. Portugal: Unit Root and Granger Causality Tests

Panel A. Results of DF-GLS tests for non-stationary levels

Variable	Trend and Intercept			Intercept		
	t-Statistic	5% Critical Value	Lag 1/	t-statistic	5% critical value	Lag 1/
Log(PM _t)	-2.6186	-3.7548	2	-2.5397	-1.9470	2
Log(RULC _t)	-1.9622	-3.1772	2	-0.8825	-1.9470	2
Log(CAP _t)	-2.3253	-3.1900	0	-2.1282	-1.9493	0
Log(OPEN _t)	-1.1173	-3.1836	4	-0.8773	-1.9477	4
INFL _t	-3.2457	-3.1708	0	-0.1773	-1.9468	0
Log(REER _t)	-2.2536	-3.1900	2	-1.0747	-1.9483	2
Log(DEBT _t)	-2.1004	-3.1740	1	-1.8380	-1.9469	1
Log(ROIL _t)	-1.8529	-3.1708	0	-1.1520	-1.9468	0

Panel B. Results of DF-GLS tests for non-stationary first differences

Variable	Intercept		
	t-Statistic	5% Critical Value	Lag 1/
DLog(PM _t)	-6.0446	-1.9469	0
DLog(RULC _t)	-3.9121	-1.9469	0
DLog(CAP _t)	-5.8784	-1.9496	0
DLog(OPEN _t)	-5.2214	-1.9481	0
DINFL _t	-3.7422	-1.9471	2
DLog(REER _t)	-3.9301	-1.9481	0
DLog(DEBT _t)	-3.2134	-1.9469	0
DLog(ROIL _t)	-1.9850	-1.9475	5

Panel C. Results of Granger causality tests

Log(PM _t) does not Granger cause the following variables:	Log(RULC _t)	Log(CAP _t)	Log(OPEN _t)	Log(REER _t)	Log(DEBT _t)	Log(ROIL _t)
F-statistic	0.52	0.49	3.61	0.96	0.55	2.09
	(0.72)	(0.74)	(0.01)	(0.44)	(0.70)	(0.10)

Source: INE, Banco de Portugal, OECD, and British Petroleum.

1/ Modified Akaike information criterion.

3. Profit margins and their determinants in the Portuguese corporate sector could be cointegrated and have a long-term relationship. The data set ranges from 1977 to 2017, a period during which Portugal joined the euro area (1998) and the financial and European crises took place. Table 1, Panel C contains pairwise Granger causality tests with the null hypothesis that profit margins do not Granger cause the various determinants. Except for inflation and foreign competition, the null hypothesis that profit margins do not Granger cause the many determinants cannot be rejected at a five-percent significance level. The ARDL bounds testing approach to cointegration by Pesaran and Shin (1999) circumvents endogeneity and simultaneity by assuming all variables are endogenous and by requiring additional lags of the dependent and independent to remove autocorrelation in the residuals. Moreover, dummy variables are included to account for the periods of financial crisis in Portugal and of high oil prices. The specifications are selected based on the criteria of no autocorrelation in the residuals, normally distributed residuals, and stability of coefficients. Table 2 displays the results of F- and t-bound tests with a lag selection based on the Schwarz information criterion (SIC). The null hypothesis of no cointegration between profit margins and their determinants is rejected at a five-percent significance level for all specifications as the critical Wald-F statistic is larger than both the lower I0 and the higher I1 bounds.

Table 2. Portugal: F- and t-Bound Tests

	Basic Model (BM)	BM plus REER _t	BM plus DEBT _t	BM plus ROIL _t
F-statistic	8.56	8.80	13.16	4.82
Sample size	39	39	38	39
Size test	Asymptotic	Asymptotic	Asymptotic	Asymptotic
I0 bound	2.26	2.14	2.14	2.14
I1 bound	3.48	3.34	3.34	3.34
t-statistic	-4.24	-5.08	-5.64	-4.37
I0 bound	-2.24	-1.95	-1.95	-1.95
I1 bound	-3.89	-3.83	-3.83	-3.83

Source: INE, Banco de Portugal, OECD, and Brithish Petroleum.

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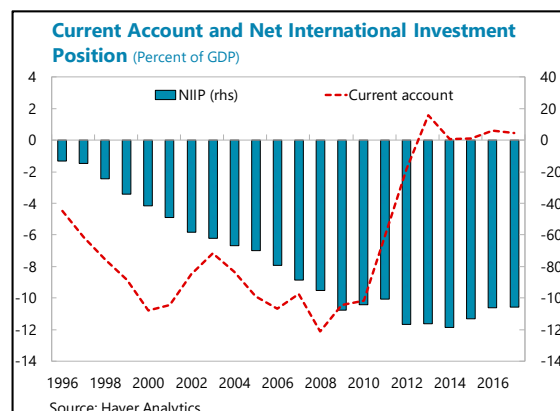
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PORTUGAL'S LARGE CURRENT ACCOUNT ADJUSTMENT¹

A. Introduction

1. From 2008 through 2013, Portugal underwent a very large current account adjustment from a deficit of 12 percent of GDP to a surplus of 1½.

This followed an extended period of large and widening current account deficits starting in the mid-1990s, during which the Net International Investment Position (NIIP) deteriorated substantially. Between 2013 and 2017, the current account has stayed slightly positive. The deterioration of the Net International Investment Position (NIIP) stopped and even started to reverse, although liabilities still exceed assets by more than 100 percent of GDP in 2017.



2. This paper sets out to assess this large current account adjustment using three different approaches:

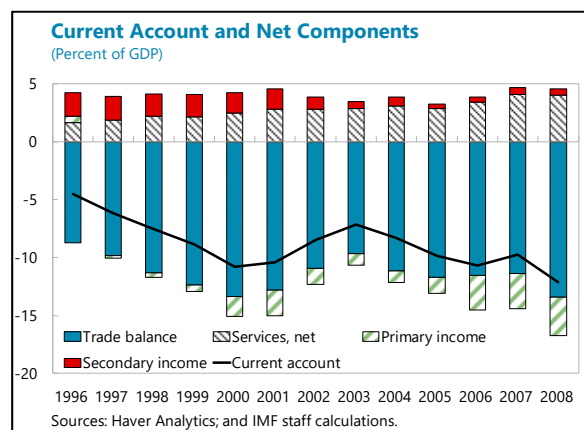
- i. Describing the main characteristics of the current account adjustment during and after the Global Financial Crisis (GFC) from several perspectives (for example, changes in cost competitiveness, export market shares, and the saving-investment balance).
- ii. Comparing the widening and subsequent adjustment of the current account deficit to other episodes of large current account adjustments, by applying a simple event study methodology.
- iii. Using the results from the IMF's External Balance Assessment (EBA) approach to attribute the changes in the current account to various fundamental and policy factors, to get a sense of how sustainable the adjustment will be.

3. The paper is organized in line with these three elements of analysis of the current account adjustment. The next section will describe the adjustment from different angles and section C discusses the event study. Section D will present the results from the EBA analysis and Section E concludes.

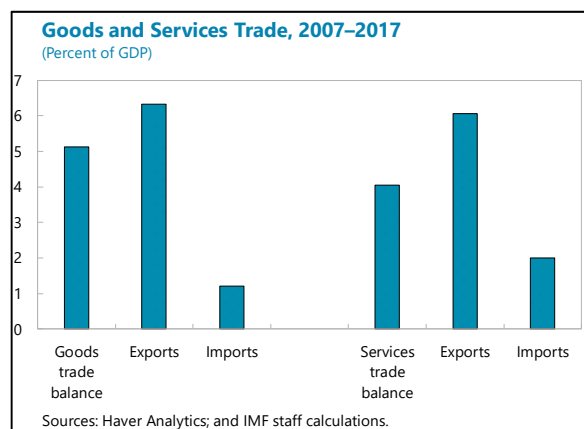
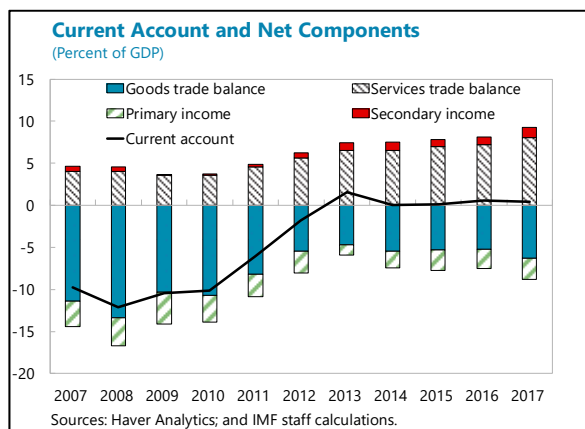
¹ Prepared by Erik Lundback.

B. The Current Account Adjustment

4. The widening of the current account deficit from the mid-1990s was driven by a rapid decline in the goods trade balance. The current account went from near balance in 1995 to a deficit of about 11 percent only five years later in 2000, when the goods trade deficit reached 13 percent of GDP. Domestic demand played a role, as suggested by the fact that real GDP growth averaged about 4 percent during 1996–2000; after 2000 the economy went into a recession, and the current account improved substantially. Then, as the economy recovered, the current account and trade balances widened again. In addition, contributing to the widening and sustained deficit in the goods and services balance were external trade shocks such as increased competition from Asia and Central and Eastern Europe.² The deterioration of the current account also coincided with an acceleration in the growth of credit to households and non-financial corporations. Credit to the private sector as a share of GDP went from being below the euro area average in 1995, to being much higher just a few years later.³



5. The adjustment in the current account balance that started in 2008 was led by trade. The goods and services balances, and the primary and secondary income balances all improved. However, it was trade in goods and services that accounted for the lion share in the overall improvement. By 2017, the goods trade balance had improved by about 5 percentage points of GDP and the services balance by about 4 percentage points.

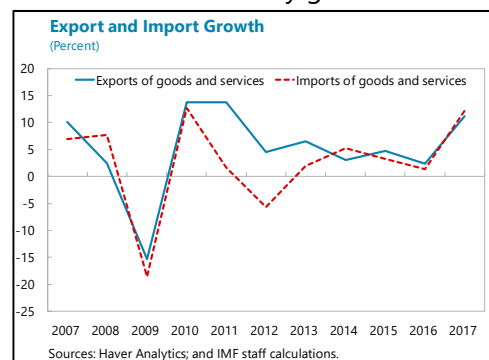


² See Banco de Portugal (2016) and Amador, Cabral, and Opromolla (2009).

³ See IMF (2000), the 2000 Portugal IMF Article IV Consultation Staff Report, and IMF Staff Country Report No. 00/15.

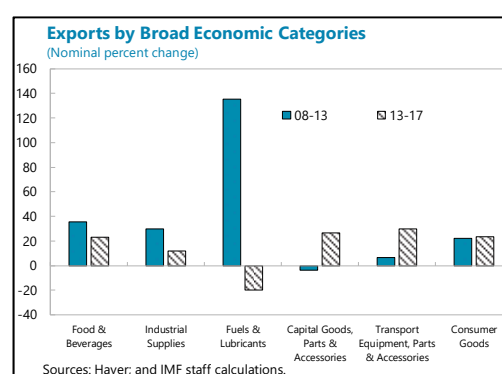
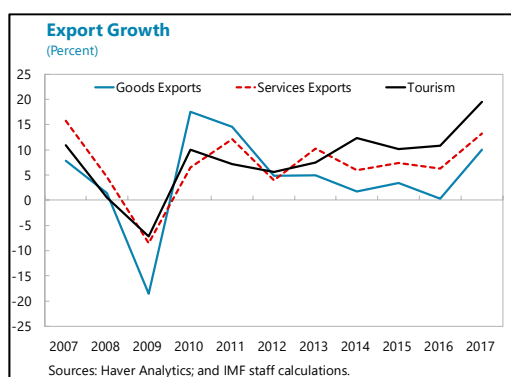
6. The rapid strengthening of the trade balance occurred as import growth fell and export growth held up.

Exports of goods and services continued to steadily grow as a share of GDP, increasing by about 12 percentage points of GDP from 2008 through 2017—that is, growing by about 4½ percent on average per year. Imports, on the other hand, saw significant deceleration and even compression, in particular during 2010–2013, when the most substantial improvement in the trade and current account balance took place. Imports of goods and services as a share of GDP only returned to their pre-crisis level in 2017.



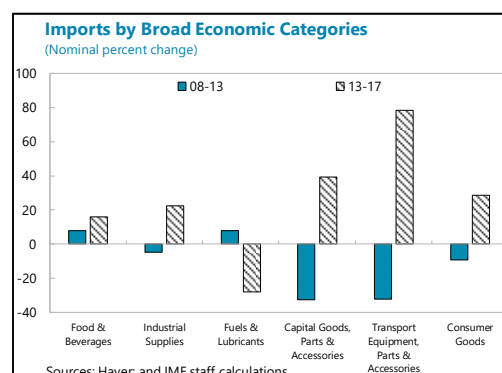
7. Export growth has been strong after the crisis, with especially strong services exports led by a booming tourist sector.

The initial shock as the global financial crisis (GFC) took hold caused a sharp drop in goods exports, but was followed by a strong rebound as the crisis ebbed. Services exports have outperformed goods exports. A vibrant tourism industry, accounting for about half of all services exports, and 18 percent of total exports, has delivered very fast export growth.⁴ Goods exports growth has also been quite strong, in particularly in 2017, and it has been broad based, except for fuels.



8. Import compression was led by goods, as services imports account for a relatively modest share of total imports (18 percent).

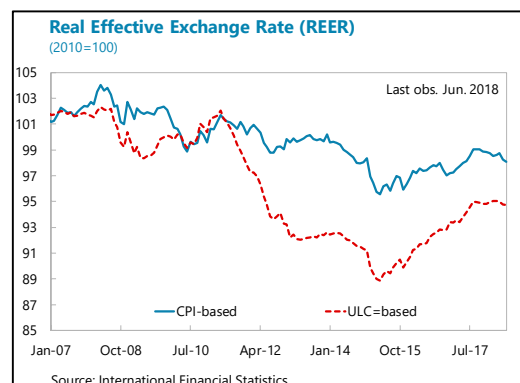
The import compression was the strongest for goods related to capital investment, and transport equipment. As the economy has rebounded, this is also where imports growth has been the strongest, which reflects a pickup in investment, and also that vehicle plant production is accelerating.



⁴ The share of tourism in all services exports is calculated as the share of Travel exports in the balance of payments data.

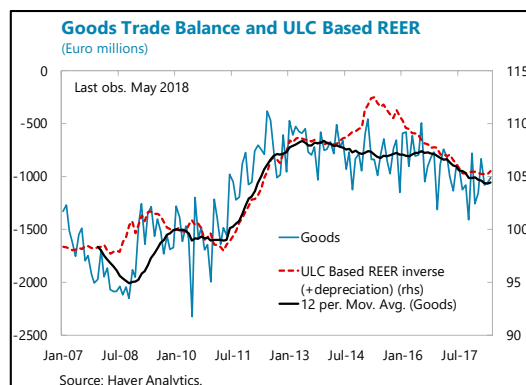
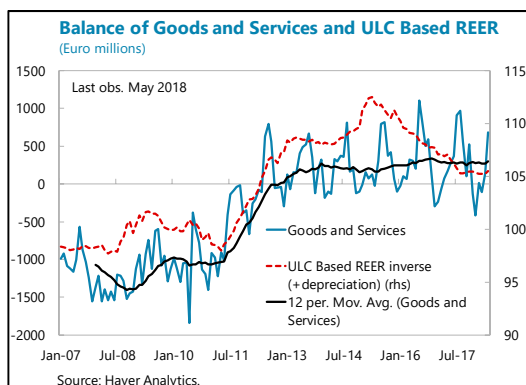
9. As the GFC unfolded, Portugal experienced a marked depreciation of the real effective exchange rate (REER), which has partially reversed in recent years. The

depreciation was more pronounced in the unit labor cost (ULC) based REER, which, after having undergone a steady appreciation starting in the early 2000, declined by about 13 percent, and is currently still well below its pre-crisis level. The depreciation of the CPI-based REER was more moderate, at about 8½ percent, with this indicator staying well above the level before the current account widening commenced in the mid-1990s.

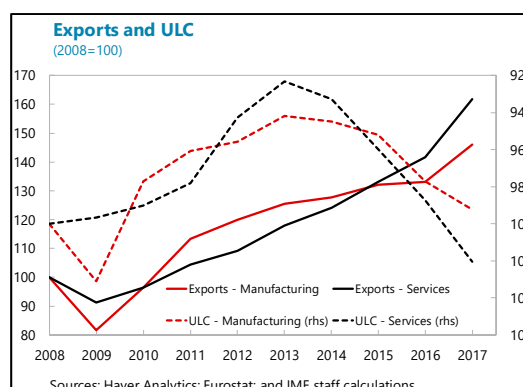
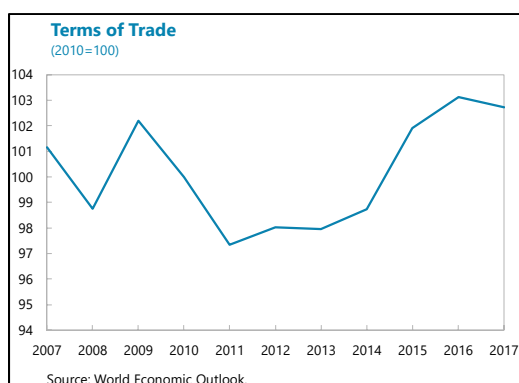


With the recent appreciation, it is not much below levels in the years immediately before the GFC.

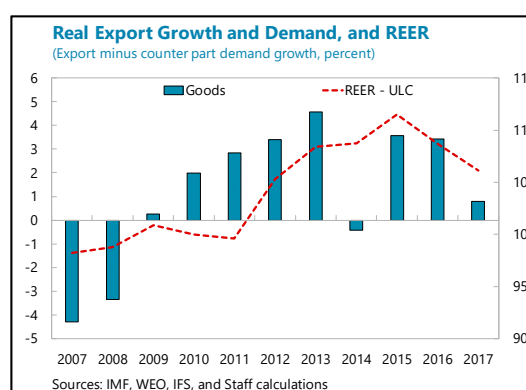
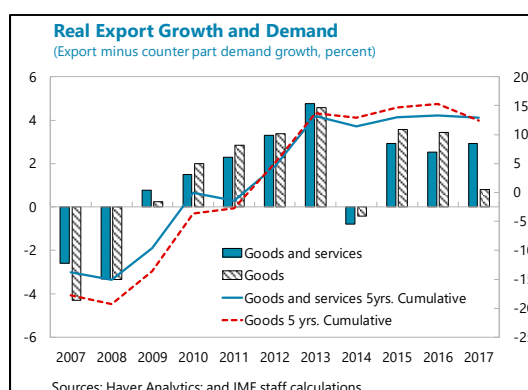
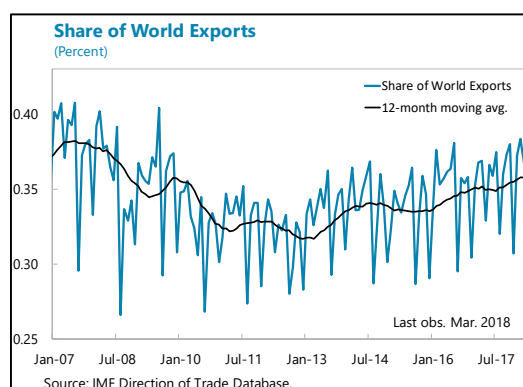
10. The improvement in the trade balance exhibits a striking co-movement with the REER depreciation; nevertheless, caution is warranted in discussing causality, and non-cost factors need to be considered as well. As displayed in the charts below, the very rapid strengthening of the trade balance coincides very closely with the depreciation of the ULC based REER (both for goods and service, and for goods alone). A similar, but not as close co-movement can be observed between the CPI based REER and the trade balance. However, more recently the ULC based REER has tended to appreciate somewhat without a corresponding deterioration in the overall trade balance. This can largely be explained by a continued boom in tourism—in fact, the goods trade balance has now started to deteriorate in line with the REER appreciation. A similar pattern can be seen for exports, where the services export momentum continues very strongly, while goods exports show some dampening. Although the cause and effect are inherently difficult to judge, preserving cost competitiveness will likely be important for the trade balance and current account to avoid erosion. At the same time, non-cost competitiveness was an important contributor to the improvement in the trade balance,⁵ helping explain why export growth has been strong recently despite increasing ULCs. A positive sign going forward is also that the terms of trade have improved significantly in the last several years, after dipping in the years following the GFC.



⁵ See e.g. Banco de Portugal (2016).

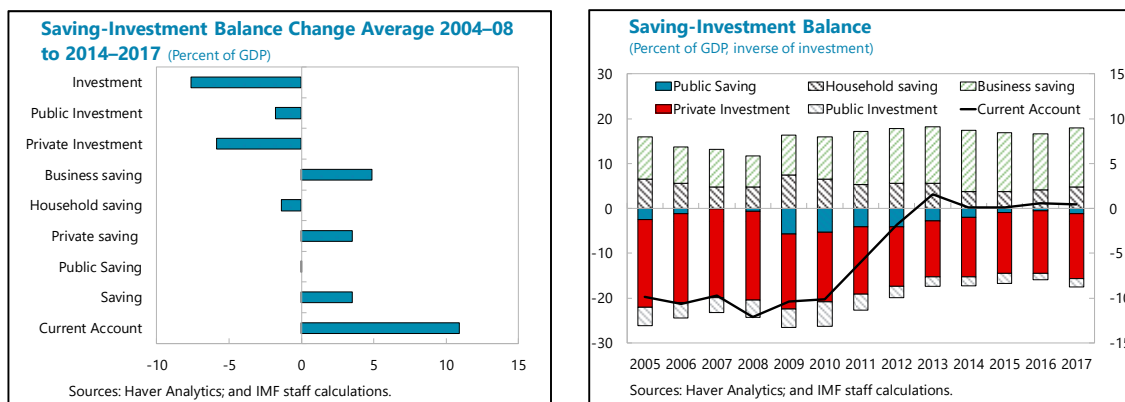


11. Market share developments have been positive on balance. The share of Portugal's goods exports in global goods exports was declining for an extended period, reaching a low during the euro crisis. However, as the economy stabilized, Portugal's share in global goods exports started to rise. Also, Portugal's real exports have been growing faster than real import demand in trading partners, weighted by their share in total exports since 2009, in contrast to the previous period.⁶ The most significant acceleration in relative export growth occurred at the same time as the largest adjustment of the trade and current account balances took place. This applies to both goods and services, with a slight difference in that the export growth advantage relative to import demand for goods went down in 2017, while for overall exports there was no major change in the trend. It is not possible to judge whether this shift will continue as the ULC based REER has appreciated somewhat, but it is an interesting difference between goods and service exports.



⁶ Based on World Economic Outlook data. Import demand calculated as averages of percent changes of data for individual trading partners weighted by their share in total exports or imports, as applicable, of reporting country. The relative importance of trading partners reflects trade in goods only; complete information on bilateral trade in services is not generally available. Banco de Portugal (2018) also documents increasing goods and services market shares since 2009 using somewhat different data.

12. From a macroeconomic balance perspective, lower investment and higher business saving were both important drivers of the current account adjustment. Comparing the situation in the period before the GFC (2004–2008) to the one after the euro crisis (2014–2017), investment, as a share of GDP, dropped by more than 7½ percentage points, of which almost six percentage points were private investment. At the same time business saving increased by about 4½ percentage points of GDP. These movements reflect a substantially increased economic and financial uncertainty, lower labor costs, and lower access to credit to finance operations and investments. Household saving, in contrast, declined by almost 1½ percentage points of GDP. General government saving went up by less than ½ percentage points of GDP after recovering from a sharp drop in 2009, although the modest improvement masks a stronger underlying fiscal effort. Since investments in Portugal as a share of GDP are low and will likely need to increase to support medium- and long-term economic growth, saving would need to increase to avoid excessive recourse to foreign financing and for the current account not to turn into a significant deficit.



C. Portugal in Event Study of Episodes of Large Current Account Adjustments

Even Study Construction

13. To assess Portugal's current count adjustment, it is interesting to compare it with similar episodes in other countries. To this end an event study was conducted. As a first step, other episodes of large current account adjustments were identified. The criteria were:

- i. The adjustment in the current account was at least 5 percentage points of GDP.
- ii. The adjustment started from a deficit of at least 5 percent of GDP.
- iii. This deficit was a local minimum for +/- 5 years.

The precise criteria were set to get a reasonable number of events in the last 30 years, while still only considering relatively large adjustments of sizeable current account deficits.⁷ This resulted in

⁷ The period for identifying events was limited to 30 years owing to data availability considerations.

20 events selected from the history of 45 advanced and higher income emerging market economies.⁸

Variables Used in the Event Study	
Budget balance (Percent of GDP)	Labor productivity (growth)
Consumption (Percent of GDP)	Public debt (Percent of GDP)
Current account (Percent of GDP)	Nominal effective exchange rate (index)
Trade openness (sum of imports and exports as percent of GDP)	Real effective exchange rate CPI based (index)
Credit to private sector (Percent of GDP)	Real effective exchange rate ULC based (index)
Employment growth	Real GDP growth
Gross net disposable income per capita in constant prices (growth)	Real GDP per capita growth
Gross net disposable income per capita in US\$ (growth)	Real domestic interest rate (Percent)
Investment (Percent of GDP)	Real US interest rate (Percent)
Private investment (Percent of GDP)	Saving (Percent of GDP)
Public investment (Percent of GDP)	Private saving (Percent of GDP)
Residential private investment (Percent of GDP)	Public saving (Percent of GDP)
Potential GDP growth	Terms of trade (index)
Output gap (Percent of potential GDP)	Unemployment rate (Percent)
Old age dependency ratio (Percent)	Unit labor costs (growth)

14. Then, using annual data, a set of macro-financial variables were collected for each event (see Table). The data collected span five years before the adjustment started and nine years after. The reason for choosing nine years following the turning point was to roughly match the duration so far of adjustment in Portugal (i.e., through 2017). The median and quartile ranges were then calculated for the variables during the events and displayed in charts as discussed below.⁹ In parallel, the corresponding series for Portugal 2003–2017 are displayed for comparison. Not all series are shown and discussed, but a selection was made based on where some interesting observations could be made.

Results

15. A few broad conclusions emerge from the comparison of the adjustment in Portugal with other episodes of large adjustments:

- The pattern of the current account balance was similar, although in Portugal the deterioration in the run-up to the adjustment was less pronounced. In both Portugal and during other events, export as a share of GDP has been increasing during the adjustment; but swings in import were generally stronger in other countries than they were in Portugal.
- Portugal experienced less of an economic boom before the adjustment started than the median comparator, including modest growth and rising unemployment, while its growth had

⁸ The countries in the event study are: Australia, Austria, Belgium, Bulgaria, Canada, Chile, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong SAR, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Malaysia, Malta, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russia, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Taiwan, Turkey, United Kingdom, United States, and Uruguay.

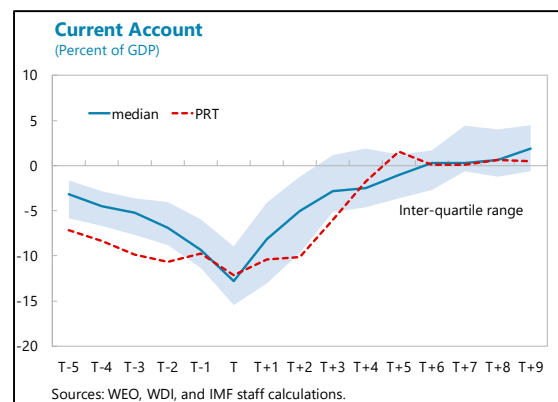
⁹ The comparator events were also split into sub-groups and when looking only at euro area countries the conclusions remains broadly the same.

a bigger initial dip as adjustment started. More recently, though, growth in Portugal has picked up and employment growth has been strong, even if labor productivity has been declining, unlike in the median event.

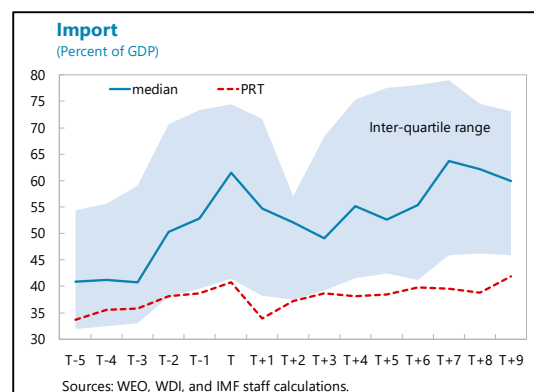
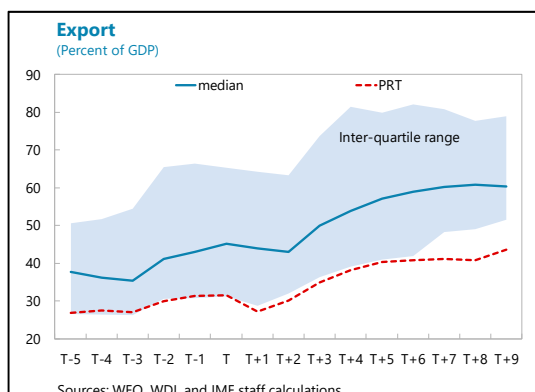
- A positive sign going forward is that Portugal's terms of trade have improved in the last several years, following a steady decline already before the adjustment started, while for the other countries the terms of trade have no clear trends.
- REER developments have been similar in Portugal and other events, although the depreciation was stronger than average in Portugal.
- Changes in credit to the economy have been more dramatic in Portugal compared to the other countries. In particular, the drop coinciding with the current account adjustment was larger.
- In other countries, the increase in credit in the run-up to the adjustment coincided with an increase in private investment, which was not seen in Portugal. Both Portugal and other event countries have seen some recovery in investment following the adjustment, even if the level remains comparatively low in Portugal.
- Private saving increased in Portugal as in other events, but are still low in Portugal and has declined somewhat more recently, unlike in the median event.

16. The current account deterioration was generally faster in the comparator countries in the years before adjustment.

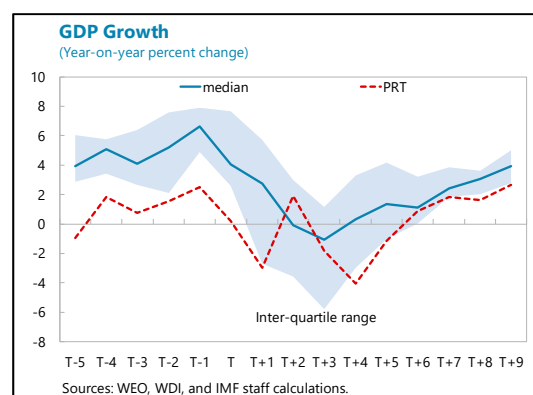
On average the current account deficit widened by 8 percent of GDP in the five years prior to the turning point, to about 12 percent of GDP, while in Portugal it widened five percent also to around 12 percent of GDP. The median event shows a quite rapid adjustment the first 3–4 years, until the current account balance was close to 0, which is a pattern similar to Portugal, although the start in the latter was somewhat slower (or delayed). It may also be noted that while Portugal's current account balance has been quite flat after the initial adjustment, in other episodes it has on average remained on a slightly improving trend. Looking at export and import, the main drivers of the current account, Portugal's growth in export as a share of GDP has been quite similar to the median event, with a fairly steady increase since the adjustments started, even if the increase for the whole sample period has been smaller. There is more of a difference displayed for imports, where in other event countries there was generally a much stronger increase before the adjustment started, and also a more pronounced



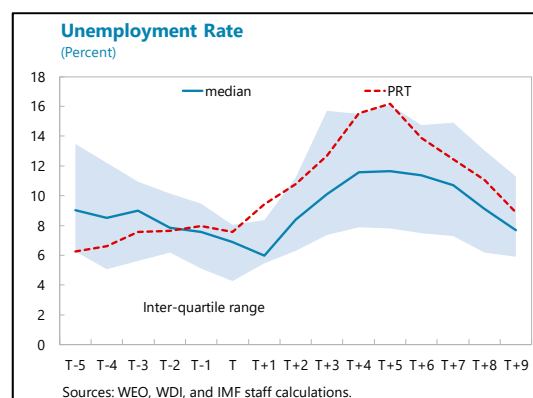
drop and rebound pattern thereafter. In Portugal, movements in imports look more moderate, with some uptick most recently.



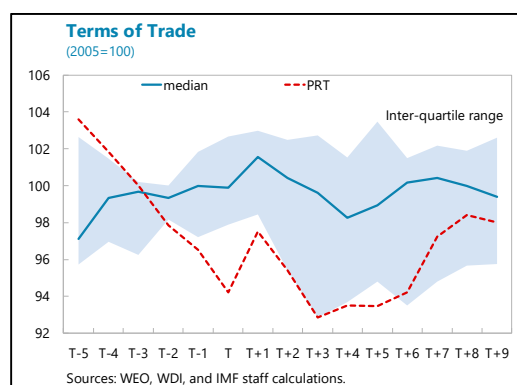
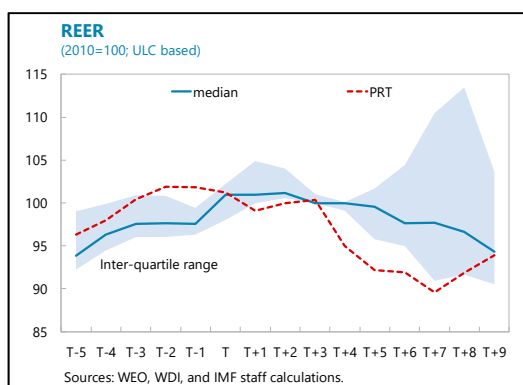
17. Interestingly, while real GDP growth was muted in Portugal in the run-up to the adjustment, in the comparator episodes countries tended to experience stronger growth with significant output gaps. Growth in Portugal in 2003–2008 averaged only 1 percent even though the output gap closed and turned positive. Then, subsequently, the dip in real GDP growth was much deeper than in the median adjustment episode, though the lower quartile fell even lower. Overall, growth has disappointed in Portugal relative to comparator episodes, and, except in 2017, growth was lower than in its trade weighted counterparty countries. Productivity developments have also been somewhat concerning for Portugal. While the adjustment episodes coincided with a turnaround from declining to rising productivity growth, Portugal has seen, if anything, declining labor productivity in the last few years. This raises some questions about the sustainability of higher real GDP growth and continued competitiveness.



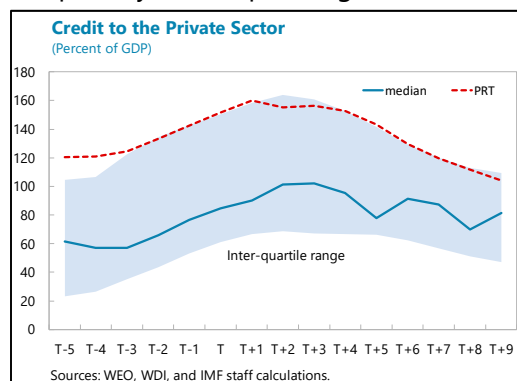
18. Portugal also saw larger variations in unemployment than comparators did during the adjustment episodes. In other episodes unemployment was on a downward path before the turning point, and nine years later it was back close to the previous low-point. This contrasts with Portugal, where unemployment was increasing already before the turning point, and then shot up further following the crisis, before starting to decline while remaining well above previous levels. However, it should be emphasized that employment growth has been rebounding and strong in the last few years in Portugal.



19. The depreciation in the ULC-based REER was sharper in Portugal's adjustment, but developments vary widely across countries, especially in the post-adjustment period. In the period before the adjustment, the REER appreciated both in Portugal and other countries, which was followed by a period of depreciation coinciding with the adjustment phase. However, in Portugal, this was more pronounced with a sharp and quick depreciation. Notably, in the period after most of the adjustment took place, the trend in the REER varies considerably among comparator countries. In some cases, the depreciation continues, while in other there is an appreciating rebound, as in Portugal.¹⁰ As noted before, terms-of-trade developments are a positive factor for Portugal. The event sample shows no distinct pattern, while Portugal has seen a terms-of-trade improvement in the last several years, after a steady decline before the adjustment.



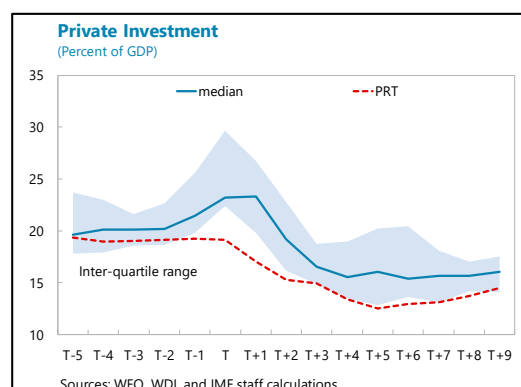
20. Changes in credit to the economy have been more pronounced in Portugal than in the other episodes. In both Portugal and other countries, credit to GDP was on an upward trend before the current account adjustment started, which then was followed by a contraction. This was similar in Portugal, but both the increase before, and especially the drop during the crisis and adjustment was much larger. Furthermore, in Portugal, the decline continues, despite being well below pre-crisis levels, while in the median country, credit started to increase again in the eighth year. Compared to 2008, credit to GDP is down by 47 percent of GDP, while the median decline was about 12½ percent. These differences should be in part related to Portugal's banking system being deeper than those of most comparator countries.



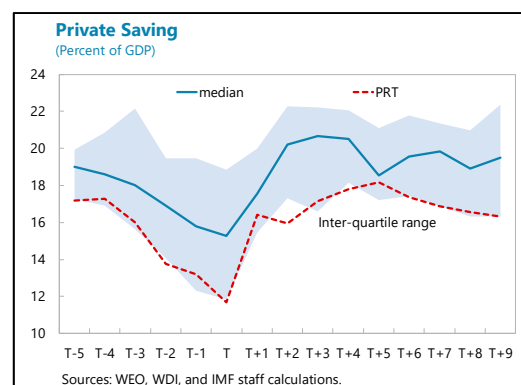
21. In other episodes, the increase in credit prior to the adjustment coincided with an increase in private investment, while in Portugal there was no such boom in investment. As credit was growing, private investment, as a share of GDP, was essentially flat in Portugal in 2003–2008, (and on downward trends since 1998). In contrast, the median country saw an increase of about 3½ percentage points of GDP during the same period. This boom in investment was

¹⁰ Developments were similar for the CPI based REER, but less distinct.

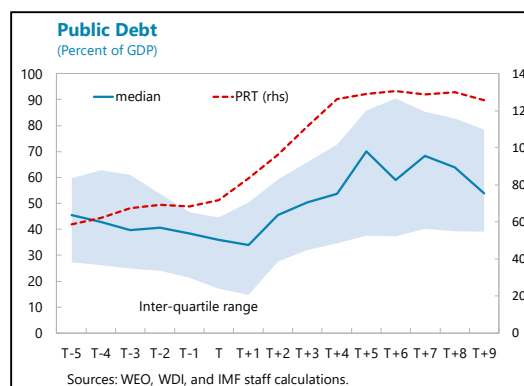
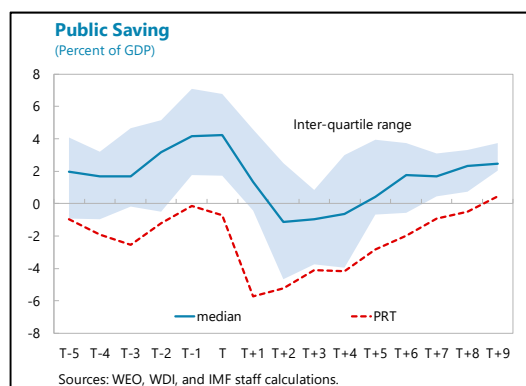
subsequently followed by a substantial drop as the current account adjusted, and this was similar in Portugal, though the drop was somewhat smaller. Both Portugal and other event countries has seen some recent recovery in investment of similar magnitude. Nevertheless, since the current adjustment started, private investment ratios are down by about 5½ percentage points for the median comparator and by about 4½ in percentage points in Portugal. It may be noted that private investment in Portugal is still low compared to other countries.



22. In both Portugal and other sample countries, overall saving was down before and moved up during adjustment, but at a lower level in Portugal, which recently has seen declining private saving. In Portugal, private saving decreased by 5½ percentage points of GDP in the five years before the trough of the current account (more steeply than in the median event), and had strong rebound during the adjustment. But as the economy and the current account stabilized, private saving started to trend down again around year T+5, that is, earlier than in other adjustment episodes. This is different



from the other countries, and so private saving in Portugal is now farther from the median than it was at the T- 5 year. Public saving, on the other hand looks favorable for Portugal in relative terms. There is a clear improvement compared to the pre-adjustment period, while in other countries public saving is still lower than at T-5.¹¹ To some extent this reflects necessity as public debt in Portugal is substantially higher, with a large increase after the crisis started and the current account adjustment began, and so continued public saving is needed.

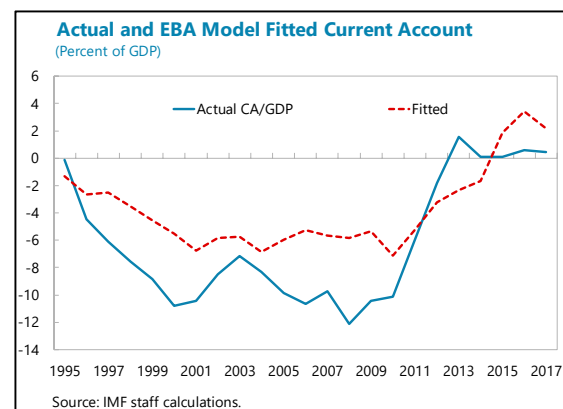


¹¹ The same applies to the general government budget balance.

D. Fundamental and Policy Drivers of the Current Account

23. Another way to look at the widening and adjustment of the current account is to econometrically identify some of its underlying drivers. The results would in principle have important implications. If the adjustment was mostly due to large negative output or credit gaps, imbalances could potentially start to build again as the economy normalizes. If, instead, the adjustment reflects more permanent changes, a more balanced and favorable evolution of the current account could be expected.

24. The results presented here are based on the IMF’s annual multi-country External Balance Assessment (EBA) of current accounts and exchange rates.¹² The EBA, which is a major part of the IMF’s annual *External Sector Report* (ESR), aims to assess the influence of policy variables (including “policy gaps”) and other fundamentals on the external current account, as an aid in the assessment of possible gaps between the actual current account and that which would be expected on the basis of a country’s fundamentals and desirable policy settings. The EBA is now a standard model for analyzing current account balances and “gaps,” and the basic model with various modifications has often been applied outside the ESR, as in Cheung, Furceri and Rusticelli (2010), Tressel and Wang (2014), and Moral-Benito and Viani (2017). The EBA methodology has been modified twice since the first version in 2013, and the results here are from the methodology used in the IMF’s 2018 ESR, which also includes a technical background note explaining the latest revisions to the methodology.

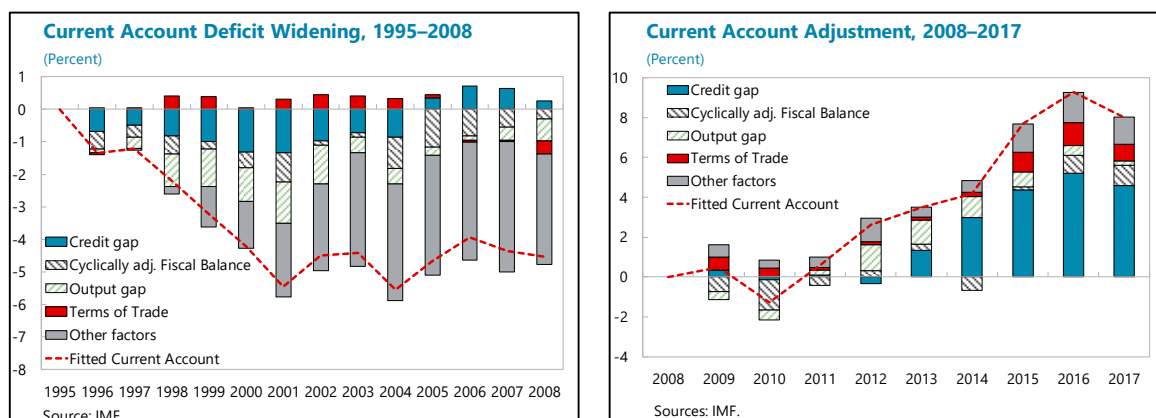


- The model can explain less than 40 percent of the large widening of the current account in the pre-adjustment period, while the fit for the more recent period is better, explaining almost 2/3 of the adjustment. The model predictions suggest Portugal should have a stronger current account than it actually had for most of the last two decades, including the most recent years. Still, the broader contour of the developments is captured by the model, which has been fitted to a larger set of countries, and a decomposition between various key fundamental and policy factors should provide some insights.
- Variables that are closely related to the state of demand include the output gap, the commodity terms of trade, and the credit gap (the difference between observed private sector credit-to-GDP ratio and its trend). The cyclically adjusted fiscal balance is also of interest in its role in explaining current account variations as a key policy variable. Other factors include financial risk, productivity per worker, net financial assets of the economy, demographics, oil and gas trade balance, growth forecast, governance and institutional quality, public health

¹² See the 2013 IMF Working Paper, WP/13/272 [The External Balance Assess \(EBA\) Methodology](#).

spending, reserves, and reserve currency status—many of which are slow moving or even permanent.

- The output and credit gap contributed about half of the explained part of widening of the current account through 2000, each with about the same importance. In the period after that, but before the current account adjustment started, the current account balance did not have a clear longer-term trend, and other factors account for most of the variation in the fitted current account. This is consistent with the initial widening coinciding with a real GDP growth acceleration and increasing private sector credit as discussed above.
- Turning to the more recent period, the output gap, the commodity terms of trade, and especially credit gap have been important for the current account adjustment, accounting for about 70 percent of the variation of the *fitted* current account. The change in the credit gap accounts for as much 57 percent of the explained adjustment in the current account. There has also been a role for fiscal policy contributing to the widening around the time of the global financial crisis, and to the adjustment in the post crisis period.¹³



- One must be careful in drawing strong conclusions, including about cause and effect, but these results are clearly consistent with a view that the evolution of credit has played a central role in the changes in the current account balance. At the same time, it must be noted that it is not at all a given that it should now be expected for credit growth to forcefully bounce back and substantially widen the current account as the credit gap closes from below, so to speak. The credit gap is simply a measure of the deviation from past trends, which includes a period of rapid credit growth when imbalances were built. Portugal has since been in a significant deleveraging phase, and the improvement in public and private balance sheets could to a large extent be permanent provided prudent macro and financial policies continue to be in place. This would contribute to preserving a large part of the gains in the current account of the post crisis period.

¹³ The previous EBA model gives qualitatively similar results, with a lower but still significant contribution from credit during the adjustment period.

E. Conclusions

25. Portugal has gone through a remarkable current account adjustment, turning a double-digit deficit into a surplus in just a few years. The adjustment was quite dramatic, occurring in the context of a global economic crisis, forcing Portugal to make large and quick adjustments of built-up macro-financial imbalances. The question is then to what extent these adjustments can be expected to be lasting, with Portugal's external current account staying near balance or in surplus, or if a period of a current account deterioration may start.

- There are several *positive factors*, including that the current account has stayed positive, even as the economy is recovering and gaining momentum; terms of trade improvements; strong real export growth exceeding import demand in partners countries during the recovery; a thriving tourism industry growing very rapidly; a recent rise in investments; and much strengthened public savings. And deleveraging should be expected to continue, at least in the public sector. The recovery of demand and credit growth projected by staff is likely in the coming years to reduce or eliminate the current account surplus, but it is difficult to see these factors causing a major reversal in the current account balance.
- There are also *challenges and potential concerns*, including a still highly negative NIIP requiring sustained current account surpluses. The adjustment appears to have been supported, to some extent, by a significant REER depreciation, and cost competitiveness gains need to be preserved; private saving is low and has declined recently; investment is still low in an international context, and as credit growth has been declining, it will be important to make sure that gains in deleveraging will be sustained and that the expected recovery in credit is balanced and productive.

In sum, the adjustment in the current account seems to be structural in many ways, but for the improvement to last, structural, fiscal, and financial policies need to be strong to support saving, moderate credit growth with financial stability, and competitiveness.

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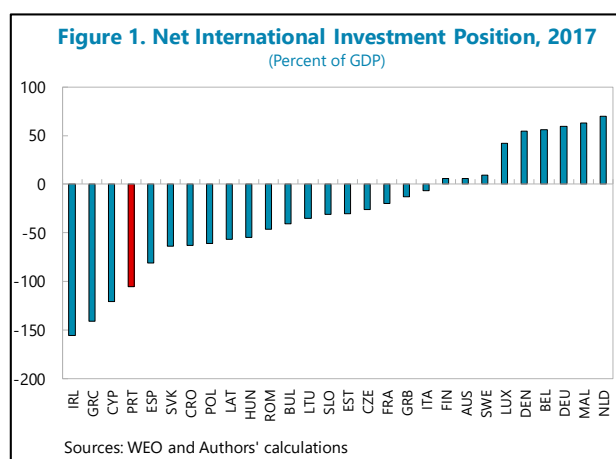
THE EXTERNAL ADJUSTMENT IN PORTUGAL¹

Portugal is in the process of a considerable adjustment to improve competitiveness, reallocate resources from the non-tradable to the tradable sector, and lower its high debt to the rest of the world. Despite the recent emergence of current account surpluses, the external balance sheet remains in deeply negative territory. Using a new probabilistic framework to assess external sustainability, this chapter argues that further relative price adjustment is likely to be needed to put external liabilities on a firmly declining path. Under monetary union, the external adjustment will require inter alia more progress on improving price and non-price competitiveness, raising productivity, and increasing growth potential.

A. Introduction

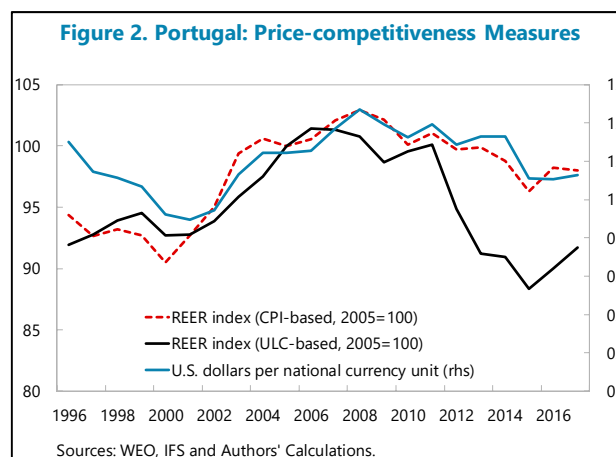
1. Following accession to the euro area, Portugal's net international investment position deteriorated sharply.

At the start of the Economic and Monetary Union (EMU), Portugal's net international investment position (NIIP) was -34 percent of GDP; by end 2017 it stood at -106 percent. This dramatic decline in the NIIP puts Portugal's net external indebtedness at the fourth largest in the European Union (Figure 1).



2. The global financial crisis exposed the vulnerabilities of Portugal's deep external indebtedness, and uncovered other structural weaknesses.

The decline in the NIIP since 1999 was driven predominantly by the external borrowing of Portuguese financial institutions, which was largely channeled to finance domestic demand. In the years since joining the EMU, unit labor costs had also risen significantly amid structurally rigid product and labor markets (IMF, 2015). Concerns about these structural weaknesses intensified during the market turmoil of 2010–2012, when the deeply negative NIIP conflated with Portugal's large public debt, its weak growth prospects and the banking crisis in Europe, to raise Portugal's borrowing costs to euro-era highs.

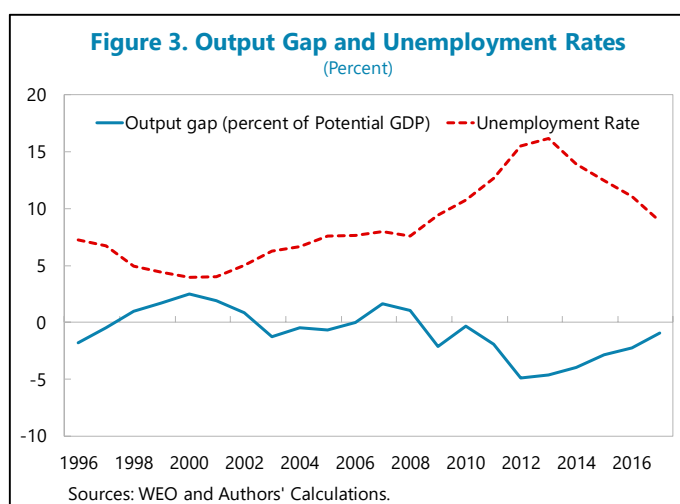


3. An external adjustment is underway, but the challenge ahead is large in view of the

¹ Prepared by Mitali Das and Yevgeniya Korniyenko.

starting position. Since 2011, a significant relative price adjustment has been achieved largely through a decline in ULCs (Figure 2), contributing to the achievement of trade surpluses after many years of large deficits. However, the ULC improvements reflect, to some extent, wage declines and labor shedding (IMF, 2015). Other price-based measures of competitiveness indicate only modest gains since the global financial crisis. As of 2017, the NIIP remains very high and exposes the economy to abrupt changes in financial market sentiment, an increase in the risk premium and the reversal of capital flows. Notably, the European Commission has identified Portugal's NIIP as one of the drivers of its macroeconomic imbalances.² At negative 106 percent of GDP, the NIIP remains significantly beyond the Commission's country-specific prudential threshold of -48 percent.³ To bring the NIIP to a safer level in a reasonable time, larger and persistent current account surpluses will most likely be needed.

4. In the context of a currency union, adjustment to the external balance will require progress on a broad mix of reforms. While a large current account adjustment has taken place since 2010—helping to move the economy towards external balance—it has coincided with a considerable deviation from internal balance. The latter has been epitomized by the rise in unemployment and the widening of the output gap, which have more recently been unwinding (Figure 3). In this context, two inter-related relative price adjustments



that draw on a broad range of reforms will be central to the continuing external adjustment:

- (a) Lower domestic versus foreign tradable prices to boost the trade balance: this price adjustment can be achieved *inter alia* by lowering relative production costs (including wage moderation), and continuing to improve non-price competitiveness, e.g., by upgrading labor skills and adopting more efficient technologies (European Commission, 2017).
- (b) Lower non-tradable relative to tradable prices to facilitate a reallocation of resources from the non-tradable to the tradable sector. This adjustment can come from a further reduction of ULCs in tradables to raise their relative profitability (e.g. labor market reforms that remove downward wage rigidity, and product market reforms that support innovation), or

² See European Commission (2017) and the country-specific report for Portugal (including an in-depth review on the prevention and correction of macroeconomic imbalances) in European Commission (2018).

³ The country-specific prudential threshold for the NIIP is derived from a univariate signaling approach that identifies the NIIP level at which an external crisis is likely to begin. The threshold widens with increasing income per capita. See also European Commission (2017) and Zoppe and Copland (2017).

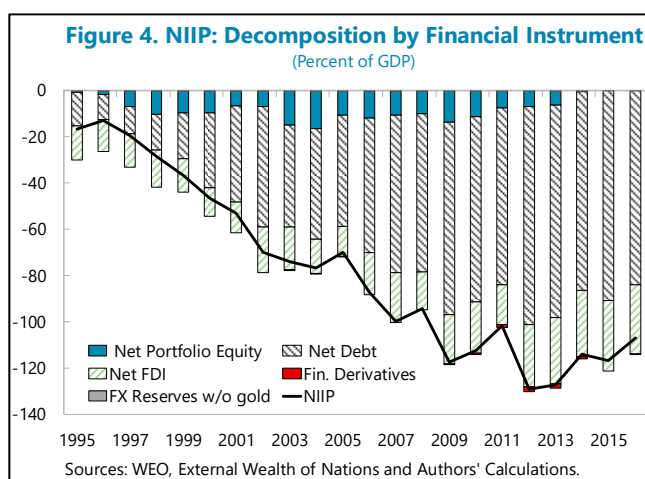
from lower non-tradable prices, which in turn can raise the profitability of tradables that use intermediate non-tradable inputs.

Over the medium term, full employment can be restored as production is realigned towards tradables, and the change in relative prices induces the required expenditure switching from imports towards domestic goods. Further adjustment of relative prices would need to be derived from sizable productivity gains. Such productivity improvements are essential to avoid a reemergence of trade deficits as the output gap closes and turns positive. Moving up the value chain of export products will help ensure that competitiveness gains achieved through relative price adjustments are sustained.

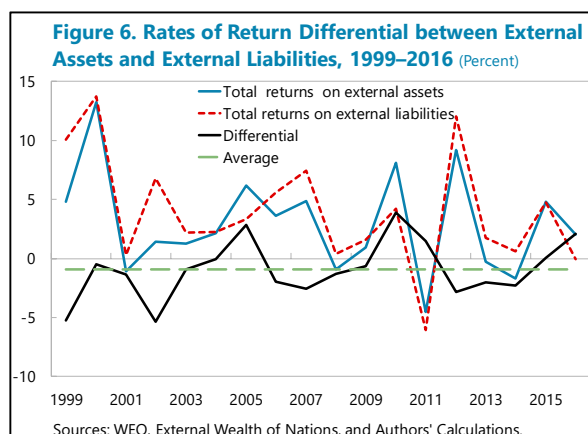
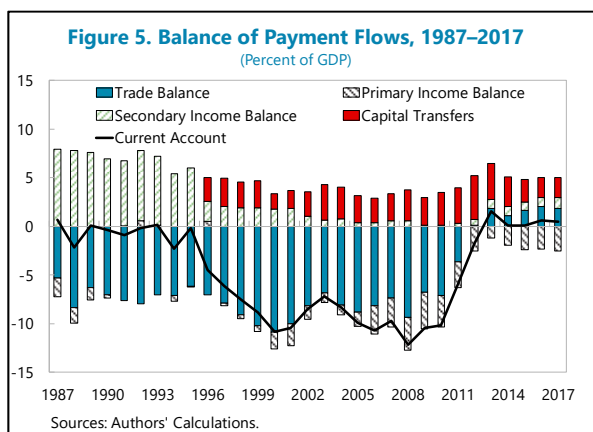
5. This chapter undertakes an analytical assessment of external sustainability in Portugal. Drawing on a new framework to assess external sustainability (Blanchard and Das 2017), this chapter estimates the real effective exchange rate (REER) depreciation required to lower the NIIP to a range of indicative thresholds. When stocks of external assets and liabilities are large, as they are in Portugal, even small changes in the rates of return on these holdings can create large valuation changes, and strong stabilizing or destabilizing dynamics on the NIIP. Unlike standard approaches, this framework considers that external adjustment can occur both through adjustments in future net exports, as well as this “financial channel” that gives a role for valuation changes to shape NIIP dynamics. The output of this exercise is a probabilistic assessment—the probability that a REER depreciation is required to attain the desired level of the NIIP—which accounts for the uncertainty of forecasts used in evaluating the external budget constraint (see Annex I, Section A).

B. Stylized Facts about the External Balance Sheet in Portugal

6. Reflecting the highly leveraged positions of Portuguese banks and non-financial corporates, the NIIP has a high concentration of debt liabilities. The domestic demand boom preceding the global financial crisis was intermediated by external borrowing by Portuguese financial institutions, which were concentrated in loans and other debt instruments. The predominance of debt liabilities has implications for the evolution of the NIIP since, unlike equity liabilities whose value declines with a downturn, debt and debt service payments tend to remain largely fixed. While inward FDI has recently started to increase, it still plays a relatively small role in the external balance sheet (Figure 4).



7. Servicing the large stock of net external liabilities has led to a steady drain through the investment income account and hindered the external adjustment. Before the crisis, the current account balance in Portugal was determined largely by the trade balance, which was - 9.4 percent of GDP in 2008 (Figure 5). Meanwhile, interest payments on accumulated liabilities rose steadily, reaching a peak of 4 percent of GDP in 2008. Since 2012, however, even as the trade balance has moved into a small surplus, net income flows on the negative NIIP have remained large and negative, hindering improvement in the current account balance, although they are partially offset by current transfers. Capital transfers have been stable, helping the external adjustment.



8. Since euro accession, Portugal has paid a modest risk premium on its external liabilities relative to the return it has earned on external assets. The total rate of return is the sum of the dividend yield and capital gain. While the total return Portugal has earned on its foreign assets and paid on its liabilities is volatile year to year, on average the differential has been mildly negative, averaging -0.9 percent between 1999 and 2016 (Figure 6).⁴ The path of future return differentials can have material implications for external adjustment: all else equal, if a positive return differential is sustained, it will speed the reduction of the NIIP to GDP ratio to a lower level; a persistent negative return differential will, however, exert destabilizing dynamics, delaying the stabilization of the NIIP.

9. A structural shift in local currency denomination of external liabilities has lowered, though not eliminated, the exposure to currency risk. After the inception of the EMU, in addition to redenomination of all liabilities previously denominated in eurozone currencies, the share of both external assets and external liabilities denominated in other foreign currencies declined, lowering currency risk.⁵ This implies that valuation changes will largely arise from

⁴ The differential is measured as the return on assets less the return on liabilities.

⁵ The share of external assets in foreign currency is 11 percent; the share of external liabilities in foreign currency is 1 percent. The data are from Benetrix et. al. (2015) and are through 2012. Other independent sources suggest that the currency composition of Portugal's external balance sheet remains largely unchanged since then.

changes in asset prices, and much less so from movements of the currency.

C. External Sustainability Assessment

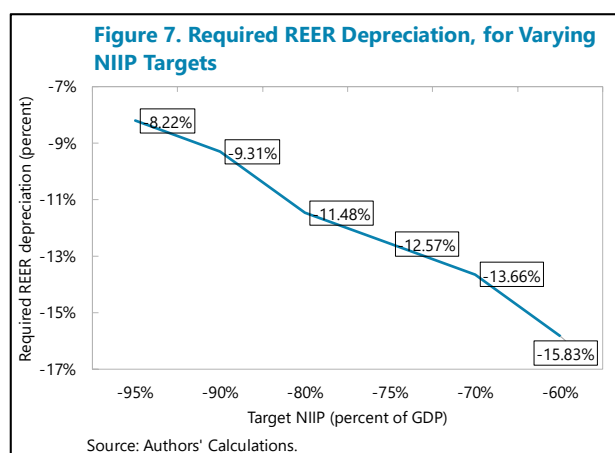
10. A successful external adjustment will require that the NIIP is lowered from its current level. Echoing the European Commission's recommendations to lower the NIIP to a prudential threshold, the analysis below considers several thresholds ranging from an upper bound of -95 percent to a lower bound of -60 percent, and computes the REER adjustment consistent with attaining that level.⁶ The long projections and key equations underlying the analysis are in the Annex I, Section A.

11. The structural changes required to support the external adjustment are likely to take place over a long horizon. Policies to address the restructuring of corporate debt, lower public debt and address the structural rigidities in labor and product markets are on the right path, but will require some time to realize their full impact. The practical implication is that the analysis must provide for a sufficiently long horizon to conduct a sustainability assessment. We thus extend the 5- year forecasts in the World Economic Outlook (WEO) to 15 years. For example, in the WEO (Annex I, Table A1), the sum of the trade balance and current transfers in ratio to GDP are projected to progressively decline by 2023; the long projections extend these forecasts under a balanced growth assumption, resulting in a steady-state trade deficit of -1.3 percent of GDP in 2033. Projections over such long horizons are subject to an unusual degree of uncertainty, and their results should therefore be interpreted with caution. They are more indicators of relevant economic forces and trends, and their implications, than they are "forecasts" properly speaking—and this word should be understood this way.

D. Deterministic External Sustainability Analysis

12. In the deterministic case, a real effective exchange rate (REER) depreciation of between 8 and 16 percent is required to stabilize the NIIP at lower levels. This approach produces one path of forecasts, assuming economic relations hold with certainty. The key results of the deterministic assessment are as follows:

- With an adjustment horizon of 15 years, a REER depreciation of about 8 percent will stabilize the NIIP at -95 percent of GDP (about 10 percentage points lower than its current level); a



⁶ The choice of 15 years balances a horizon long enough to effect deep structural changes without being too long to compromise the plausibility of the exercise.

NIIP target of -75 percent would entail a 12 percent REER depreciation; while stabilizing the NIIP at -60 percent of GDP will require a nearly 16 percent decline of the REER (Figure 7).

- As the target level becomes more ambitious, the present value of forecasted net exports becomes progressively less adequate to stabilize the NIIP, requiring larger real effective depreciation to generate the trade surpluses (and offset a small drag from the net investment income flows) to satisfy the external budget constraint.

E. Probabilistic External Sustainability Analysis

13. The probabilistic assessment of sustainability takes account of the uncertainty of future real and financial shocks. The sustainability of the NIIP is fundamentally a probabilistic question, as forecasts of growth, net exports, gross positions and the rates of returns used in assessing sustainability are random variables. Following the approach in Blanchard and Das, we use the historical outturns of these variables in Portugal to construct their joint distribution, draw shocks from this distribution, and compute the required REER adjustment to stabilize the NIIP at the varying targets shown above under a variety of realizations of those shocks. This way we can derive an estimate of the probability that a REER depreciation may be required to reach a given target NIIP in the chosen 15-year horizon.

14. Shocks to relative prices may arise from asymmetric price adjustments in the tradable versus the nontradable sector. As there are two deflators—the CPI and ULC—conventionally used in constructing the REER, we consider joint distributions of shocks corresponding to each of these (Annex I, Table A2), and assess sustainability using results from both. Two observations are relevant:

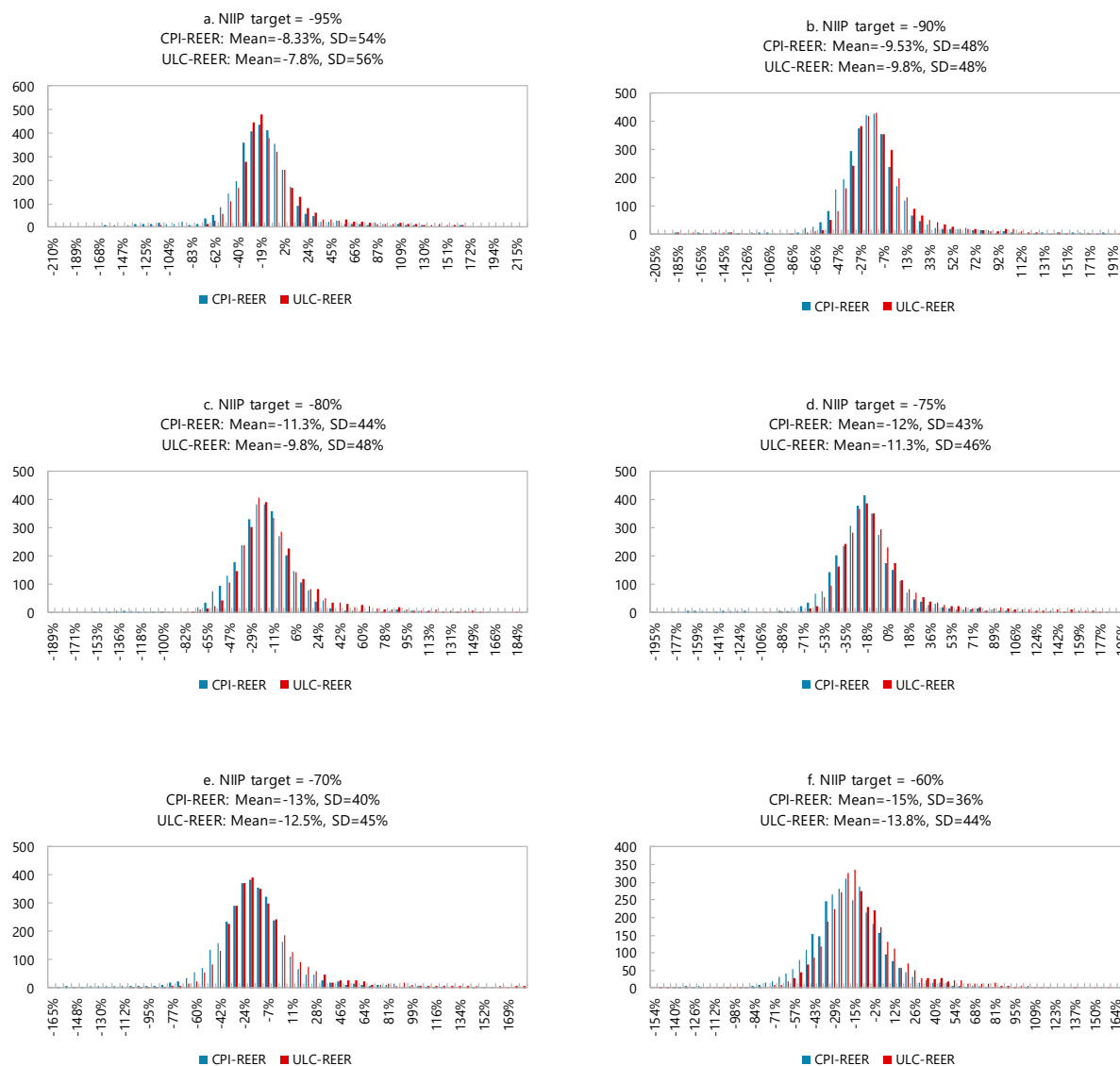
- The correlations of the real and financial variable shocks with CPI-REER shocks differ from their correlation with ULC-REER shocks, indicating that it is important to explore whether these differences affect the assessment.⁷
- For example, trade shocks are negatively correlated with ULC-REER shocks but positively with CPI-REER shocks. To the extent that prices are more flexible in the tradable sector, this is what one would expect. Take, for example, a labor productivity shock that lowers ULCs. This shock will trigger expenditure switching via a price adjustment in tradables; as nontradable prices are less flexible, however, there will be a delayed adjustment in the CPI deflator, with a correspondingly low shock in the external balance.

⁷ While the correlations of the ULC-REER and CPI-REER VAR shocks with the real and financial shocks are different in sign (last row in the correlation matrices of Annex I, Table A2), the remaining correlations correspond closely in sign and to some extent, even in magnitude. Thus, the overall difference in the probability calculations due to using the entire correlation matrix of VAR shocks from the ULC-REER versus CPI-REER are not large.

15. Taking into account the uncertainty of forecasts, the probability that the REER needs to depreciate to some extent to stabilize the NIIP at lower levels is estimated between 55 and 67 percent. Our findings are as follows:

- As the target NIIP becomes more ambitious, the distributions of both the ULC- and CPI-REERs required to stabilize the NIIP become centered around higher negative numbers (larger depreciations) and have lower dispersion (Figure 8). This implies that the probability that the REER must depreciate to stabilize the NIIP rises as the target NIIP becomes increasingly more ambitious.
- While the moments of the distributions are numerically similar whether using the ULC or CPI-REER, the average depreciations required to stabilize the NIIP are modestly smaller with the ULC-REER than with the CPI-REER for all NIIP target levels analyzed.
- For the CPI-REER: the probability that the REER must depreciate is about 55 percent when the target NIIP is -95 percent of GDP in 15 years, rises to 61 percent for a target NIIP of -80 percent, and to 66.7 percent if the NIIP target is set at -60 percent of GDP. In the case of the ULC-REER, the corresponding probabilities that the REER must depreciate are lower: 50 percent, 58 percent and 62 percent, respectively.
- Financial account shocks are significantly larger than current account shocks in Portugal (Figure 5; Annex I, Table A2). For example, using the CPI-REER shocks: given a gross asset position of 176 percent of GDP, a simultaneous one-standard deviation shock to the return on assets (10.3 percent) and returns on liabilities (7.4 percent) can move the NIIP by 5.1 percent of GDP, overwhelming the impact from a one standard deviation shock to trade (of 1.6 percent). The probabilistic results take into account the possibility that in some states of the world, future returns differentials will be positive and thus speed the stabilization of the NIIP to GDP ratio, reducing the need for exchange rate depreciation.

Figure 8. Probability Distribution of REER Adjustment Required to Stabilize the NIIP at Alternative Targets



Sources: WEO; OECD; and Staff calculations.

Annex I. Methodology

A. Description of the External Sustainability Assessment Approach.

External debt accumulation is given by:

$$D_{t+1} = (1 + r_{Lt})D_t + [NX_t + (r_{At} - r_{Lt})A_t] \quad (1)$$

where D_t is net external liabilities at the beginning of t , NX_t is net exports (inclusive of services, current transfers, and capital transfers) in t , r_{Lt} and r_{At} are rates of return on liabilities and assets respectively, and A_t denotes gross assets. The net international investment position (NIIP) is conventionally written as assets minus liabilities, implying that D is the negation of NIIP. Solving forward recursively, imposing the no-Ponzi game condition and writing in ratios to GDP gives:

$$d_t \leq \sum_{j=0}^n \prod_{i=0}^j \frac{1+g_{t+i}}{1+r_{Lt+i}} [nx_{t+j} + (r_{At+j} - r_{Lt+j})a_{t+j}] \quad (2)$$

where d_t denotes the ratio of NIIP to GDP, nx_t denotes the ratio of net exports to GDP, and g_t denotes the rate of growth of GDP and a_t denotes the ratio of external assets to GDP.

Sustainability requires that D be less than or equal to the present value of net exports to GDP plus interest differential times the ratio of gross assets to GDP (a_t).¹ Suppose debt must be stabilized at d^* . Modifying equation (9) of Blanchard and Das (2017), gives:

$$d_t - d^* \left(\prod_{i=0}^n \frac{1+g_{t+i}}{1+r_{Lt+i}} \right) \leq \sum_{j=0}^n \left(\prod_{i=0}^j \frac{1+g_{t+i}}{1+r_{Lt+i}} \right) [nx_{t+j} + (r_{At+j} - r_{Lt+j})a_{t+j}] \quad (3)$$

Let e^* be the real effective exchange rate that satisfies equation (3). The exchange rate adjustment required for debt to be sustainable is (e^*-e).

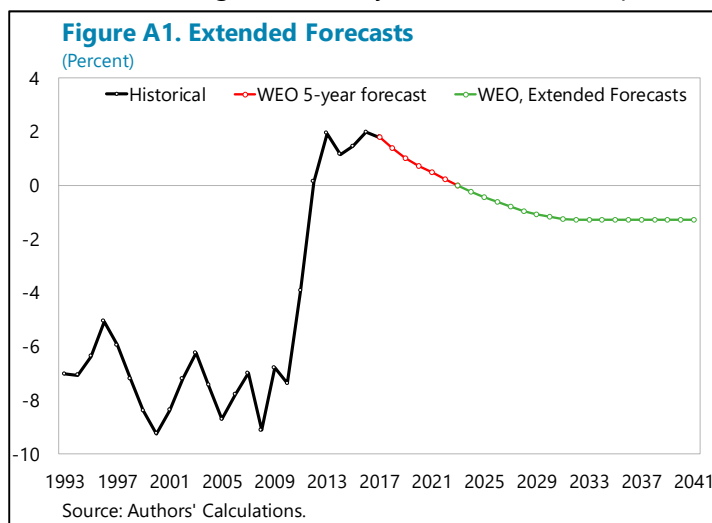
B. WEO Forecasts and Extended Forecasts for Portugal:

Table A1. Data and Forecasts for Portugal, 2018–2023
(In percent)

	2017	2018	2019	2020	2021	2022	2023
NIIP / GDP	-106	-100	-95	-92	-89	-86	-84
Assets / GDP	176	175	175	174	173	174	174
Liabilities / GDP	282	275	270	266	262	260	258
Trade balance + Current Transfers /GDP		2.7	2.4	2.2	1.9	1.6	1.4
Capital account /GDP		1.3	1.4	1.2	1.2	1.2	1.1
Real GDP growth		2.4	1.8	1.5	1.2	1.2	1.2
Real yield on assets		1.4	1.3	1.3	1.2	1.2	1.0
Real yield on liabilities		1.5	1.4	1.4	1.3	1.3	1.3

Source: World Economic Outlook (March 2018) and authors' calculations.

The forecasts are extended from 2023 to 2033 by assuming that the steady-state is characterized by balanced growth. That is, WEO forecasts are extrapolated requiring growth rates of exports, imports, nominal output and components of the balance of payments to converge to the 2023 WEO forecast growth rate of potential output. Under this extrapolation, net exports plus current transfers in percent of GDP converge to a steady-state ratio of -1.3 percent (Figure A1).



C. VAR Analysis for Probabilistic External Sustainability Assessment

The VAR is estimated using data from 1982–2017 and assumed to be of order 1. The correlation matrix for the innovations is in Table A2. The trade elasticity to REER in the analysis is -0.23.

Table 2. Correlation Matrices of the VAR Innovations

CPI-based REER, (diagonal elements are standard deviations)

	nx	g	r _L	r _A	a	REER
nx	0.014					
g	-0.72	0.016				
r _L	-0.13	0.14	0.07			
r _A	-0.18	0.13	0.92	0.08		
a	-0.37	0.19	0.07	0.21	0.10	
REER	0.16	-0.2	-0.25	-0.36	-0.42	0.02

ULC-based REER, (diagonal elements are standard deviations)

	nx	g	r _L	r _A	a	REER
nx	0.015					
g	-0.61	0.014				
r _L	-0.03	0.26	0.07			
r _A	-0.13	0.39	0.92	0.06		
a	-0.58	0.58	0.04	0.12	0.08	
REER	-0.53	0.28	0.09	0.18	0.48	0.03

Sources: WEO; IFS; Banco de Portugal; and Authors' calculations.

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TAKING STOCK OF REFORMING THE LEGAL AND INSTITUTIONAL FRAMEWORK FOR DEBT ENFORCEMENT AND INSOLVENCY IN PORTUGAL¹

A. Introduction

1. During and after the 2011–14 Fund-supported program, the authorities have implemented ambitious reforms in the legal and institutional framework for insolvency and debt enforcement (IMF, 2013; Pompe and Bergthaler, 2015). The objective was to increase the efficiency of the legal and institutional framework for debt enforcement and insolvency and to increase debt recovery and resolve non-performing loans (NPLs) to restore financial stability. In this regard, it was also recognized that notable inefficiencies in the judicial organization and process undermined the effective enforcement of civil and commercial claims, weakened property rights, and hampered recovery and sustained economic growth (Pompe and Bergthaler, 2015).²

2. As a result of these efforts, in recent years, official data show a significant improvement in terms of the speed with which cases are resolved (disposition times)³ and their turn-over (clearance rates).⁴ Also, the data point to significant increase in recovery rates for debt enforcement and insolvency cases (Correia and others, 2015; 2016; 2018a; and 2018b).⁵ These developments may have also helped in the deleveraging process and reduced NPLs (see 2018 Article IV Consultation report and Figures 1, 2, and 3).

3. Various comparative indicators reflect these positive developments. The 2018 Euler Hermes Global Ranking—which measures ease of debt collection based on a technical analysis—ranks Portugal eighth of 54 countries surveyed with a significant improvement in the period from 2014 and 2018 (see Euler Hermes, 2018). The report finds that Portugal performs better than many of its European peers and that court procedures in Portugal are at par with Finland, a traditional good performer (see Euler Hermes, 2018). These positive findings are confirmed by the 2018 World Bank Doing Business Report, which registers a notable improvement in Portugal's ranking in both the 'resolving insolvency' and 'enforcement of contract' categories between 2013 and 2018 (World

¹ Prepared by Wolfgang Bergthaler and Sebastiaan Pompe.

² The author would like to thank the authorities; in particular, staff from the Ministry of Justice, the Banco de Portugal, the High Council of the Judiciary (the *Conselho Superior da Magistratura*), and the Ministry of Economy and other stakeholders such as the Chamber of Solicitors for their engagement, discussions, and provision of data.

³ The disposition time is the period of time it takes from filing the case to its resolution in months.

⁴ The clearance rate is the relationship between completed cases and new cases within a period in percentage. A clearance rate below 100 percent means that cases are left undecided and thus a backlog may accumulate over time.

⁵ High Council of the Judiciary.

Bank, 2013 and 2018a).⁶ The latest issue of the report positions the country in the top 15 countries surveyed (World Bank, 2018a).⁷ The 2018 regional Doing Business Report on enforcing contracts finds that Portuguese courts are homogenous in performance, and “all outperform the EU average on cost and quality” (World Bank, 2018b).⁸

4. Despite these improvements in institutional performance and efficiency gains, as well as these positive assessments, some challenges persist. As further stated in the 2018 Article IV Consultation report, debt levels and NPLs continue to be elevated, even if these are now declining (See Figures 1, 2, and 3). Also, some authoritative reports from a few years ago pointed to persistent inefficiencies, which are difficult to reconcile with the positive institutional performance data (ECB, 2016; Jaeger and Martins, 2016).⁹ A number of comparative indicators also remain negative. The 2018 European Commission Justice Scoreboard finds that Portugal is a comparatively poor performer in enforcement of civil and commercial claims in the first instance (19th out of 25 countries surveyed; EC, 2018a). Also, Portugal continues to show up in the lower third of countries when compared to European peers in terms of processing time and towards the bottom in terms of pending civil and commercial cases (OECD, 2017; EC, 2018a), although these rankings should be used with caution, as they do not always reflect recent improvements.¹⁰ Indicators on the performance of claims enforcement in Portugal also do not give a uniform message on the efficiency of claims enforcement. The 2017 Intrum Justitia Late Payments Report finds that for business-to-business credit, Portugal is the worst performer on late payments (worst credit risk) of the 29 countries reviewed (Intrum Justitia, 2017). Since late payments are directly linked to effectiveness and efficiency of enforcement systems, presumably therefore the score must be the result of weaknesses in enforcement. Similarly, the Global Competitiveness Report—which is based on a survey by experts—ranks Portugal as 42nd. The assessment ranks the efficiency of the legal framework in Portugal in settling disputes at 121 out of 137 countries, close towards the bottom of the list. Once again, these indices must be used with caution; nonetheless, they raise issues that deserve study.

5. It seems appropriate to explore more deeply the apparent gap between institutional official performance data, authoritative reports, and indicators in assessing the legal and institutional framework for debt enforcement and insolvency. The authorities recognize certain

⁶ It is recognized that due to methodological changes, 2014 and 2015 data from the World Bank’s Doing Business cannot be compared.

⁷ Nevertheless, it’s worth keeping in mind that the World Bank Doing Business indicators are not based on actual case data but on standardized test cases.

⁸ The granular studies of individual courts in the World Bank report concludes that all Portuguese courts covered are faster than the European average, with the exception of Lisbon and Porto. According to the World Bank report, except for those two courts, Portugal would be in the top 15 performers worldwide (World Bank, 2018b).

⁹ In a 2015 Fund staff survey of businesses, the effectiveness of the judicial system was identified as a key area in need of further reforms (Jaeger and Martins, 2016). In a 2016 ECB report, the judicial system was considered as one of the main obstacles to NPL resolution in Portugal. For instance, a 2016 Reuters article also describes negative perceptions about the inefficiency and slowness of the judiciary (See: <https://www.reuters.com/article/us-portugal-judiciary-insight-idUSKBN13H0GI>).

¹⁰ While the EC Justice Scoreboard generally uses 2016 data, the most relevant charts show only 2010 data for Portugal. The OECD report uses 2014 data.

challenges in the legal and institutional framework for debt enforcement and insolvency but point to the official data as evidence that the reforms have worked well. The authorities further note that perception indices, because they are not grounded in facts, could be slow to reflect actual improvements and should be used with special caution.

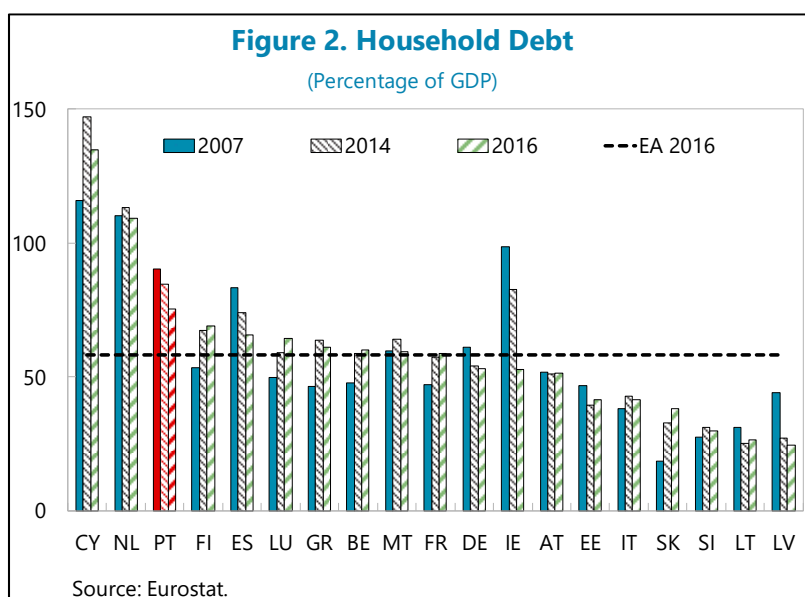
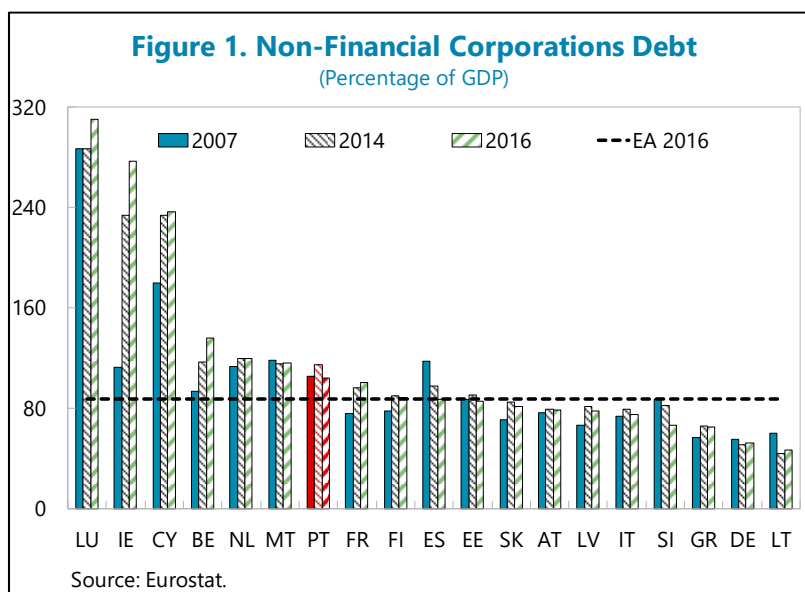


Figure 3. NPL Ratios (Percent of total loans)					
Time	15-Dec	16-Jun	16-Dec	17-Jun	17-Dec
Total	17.5	17.9	17.2	15.5	13.3
Corporate	28.3	30.3	29.5	27.5	25.2
Household	9.4	9.2	8.7	8.1	7.1
Source: Banco de Portugal, 2018, <i>Financial Stability Report</i> June 2018.					

6. Accordingly, this paper analyzes more closely the implementation of the reforms since the last review (Pompe and Bergthaler 2015), and their market impact. The first part considers the key building blocks of the reforms, notably the debt enforcement system, the out-of-court debt restructuring regimes, the insolvency system, and the related institutional framework (the judiciary, enforcement agents and insolvency administrators). The second part analyzes market impact and some broader indicators. The paper closes with a few recommendations for future engagement and improvement.

B. The Recent Reforms

7. The reforms undertaken by the authorities since the Fund-supported program involved several elements. These included changes in the in-court processing of cases and in the enforcement of cases after the court decision is issued (i.e., the actual recovery of debts against the assets of the debtor), reforms in procedures (debt enforcement), and in insolvency (in-court and out-of-court processes), and other areas. These will be reviewed in turn, with a focus on actual outcomes.

Debt Enforcement

8. Portugal currently has an efficient enforcement system. The basic building blocks for this system was in place even before the crisis, and are based on an electronic processing of a fairly wide range of claim types. The bottlenecks identified in 2011 were in an inefficient court administration (resulting in a significant backlog of cases despite the electronic infrastructure) and, more importantly, in the enforcement stage of the enforceable titles. The reforms were in part directed towards a more efficient allocation of resources within the courts (and a targeted reduction of the backlogs), but for the larger part were oriented towards enhancing the efficiency of the enforcement process after a court decision is issued (Pompe and Bergthaler, 2015).

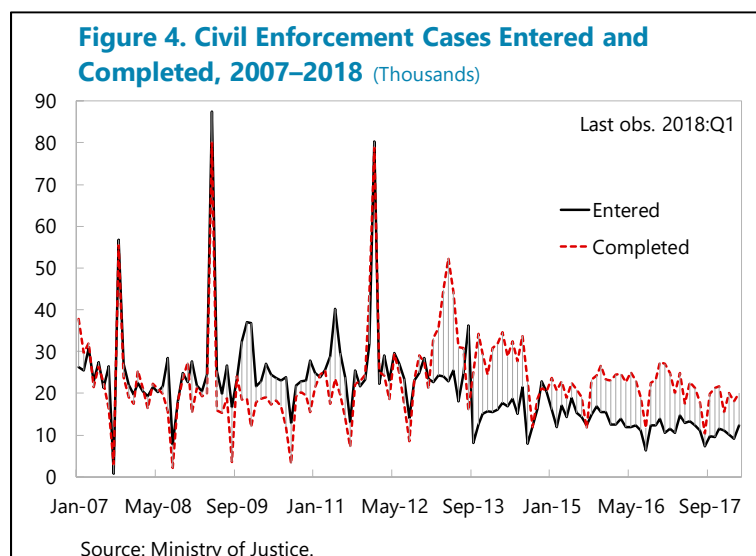
9. The debt enforcement process typically involves two steps: first, the creditor needs an enforceable title (such as a court decision), and second, s/he needs to enforce that title on the debtor's assets to recover the debt. In Portugal, the first step typically involves a judicial process. The second step is administered by private enforcement agents which are at certain points supervised by judges.

10. In Portugal, enforcement titles for the large majority of civil and commercial claims can be rapidly generated through a computer based system called the *injunção* procedure

(order for payment) without the intervention of a judge or the ordinary civil courts.¹¹ In 2017, about 133,563 *injunção* cases were filed, representing a very large share of the civil and commercial cases filed annually in Portugal.¹² The *injunção* process is an automated electronic process that generates an enforceable title without a judicial process unless the debtor objects, which then starts the normal judicial process. In practice, very few of these electronically generated titles are objected to. Therefore, the payment order process is an efficient and cost effective procedural tool to receive an enforceable title as it does not require attendance in person, or any personal interaction.

11. Overall, pending civil and commercial cases have decreased significantly.¹³ The number of pending civil cases has continued to decrease to about 172,000 pending cases (at end-2017), with clearance rates typically exceeding 100 percent and disposition times at a 10-year low (16 months).¹⁴

12. More generally, for enforcement cases there has been a large shift since 2013 (Coutinho Pereira and Wemans, 2016). The number of completed enforcement cases (see red line in Figure 4) has consistently exceeded cases entering the system (whose number has been declining since the crisis years), the processing time steadily declined, and clearance rate has consistently exceeded 100 percent since 2016 (see light gray lines in Figure 5). Overall, the data suggest that the Portuguese courts have made very significant efficiency gains, and that the pre- crisis problem has been resolved.



¹¹ Other EU countries have comparable order for payment systems, such as Austria, Germany, Poland, Lithuania, but in these countries, judges retain a supervisory role.

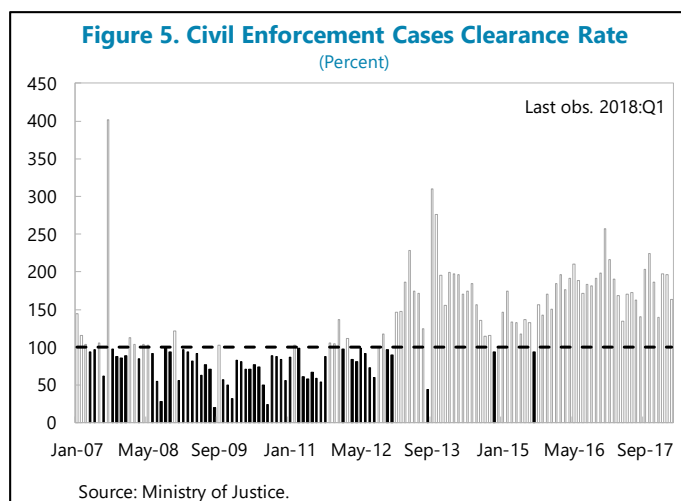
¹² The number of *injunções* has also decreased from a peak of 207,037 in 2014 in the aftermath of the crisis.

¹³ The inefficiencies in Portugal arose out of resource allocations in resolving older cases which had accumulated over time. Also, in case the decision has not voluntarily been fulfilled and an enforcement case is initiated, the enforcement case is counted as a new case which remains in the court records during the entire enforcement process. The implemented reforms resulted in significant efficiency gains in which the courts in Portugal consistently had positive clearance rates and achieved improved disposition times.

¹⁴ See Ministry of Justice.

13. Similar efficiency gains can be seen in the enforcement process after an enforceable title has been issued.¹⁵ These gains were made by a system-wide shift from enforcement through

the physical liquidation of collateral, to an enforcement process which now is to a large extent automated. In the former system, the liquidation of collateral required an enforcement agent to physically seize the asset and then put it up for auction (attended by a limited set of buyers), which needed to be witnessed and certified by a public notary. The process involved many steps and officials, was costly tended to have a low recovery rate for creditors. The new, largely automated recovery system radically overhauled this former system, which marked impact on efficiency, cost, and recovery as follows:



- **E-auctions.** Portugal automated the liquidation of physical assets (both chattel and real estate) by for instance introducing an electronic auction system for both movable and immovable assets in 2016.¹⁶ As of July 2018, there are about 16,000 completed e-auctions. This demonstrates that the system has been well accepted and is used widely.
- **Out-of-court.** In July 2017, the out-of-court collateral enforcement process for businesses became effective (see Box 1). Given its recent adoption, there is yet little data about its use.
- **E-garnishment.** The electronic system of garnishment for bank accounts—which was significantly improved in 2013¹⁷—has yielded impressive results with significant market impact. It includes the electronic submission by enforcement agents of requests for a central register of bank accounts at the Bank of Portugal (BoP) and the communication of enforcement agents with commercial banks to freeze and seize bank accounts. Such system has allowed the recovery by private enforcement agents of estimated €400 million in just 2017 (which is about 70 percent of a total of about €597 million recovered in 2017) and overall about 500,000 garnishments recovering about €1 billion (see *Ordem dos Solicitadores e dos Agentes de execução*—OSAE).¹⁸

¹⁵ There is no data publicly available breaking down enforcement of secured vis-à-vis unsecured claims. Similarly, there is no data available on the number of real estate foreclosures and their durations.

¹⁶ Several EU countries including Spain, Hungary, Latvia, and Greece have recently introduced e-auctions. These processes are not only more efficient, less costly and more transparent but also increase significantly the range of potential buyers (nationally and even internationally).

¹⁷ This recovery system has previously existed in Portugal but was effectively dormant, because debtor bank accounts could not be identified and, if they were, often were emptied before seizure.

¹⁸ This corresponds to an increase of more than 200 times the amounts recovered before the introduction of the electronic system of garnishments. In the 10 years preceding, the new electronic system of garnishments (September 2003–September 2013) less than €20 million was recovered in total.

a total of about €597 million recovered in 2017) and overall about 500,000 garnishments recovering about €1 billion (see *Ordem dos Solicitadores e dos Agentes de execução*—OSAE).¹⁸

Box 1. The “Martian Pact”

The latest reforms of enforcement procedures introduce an out-of-court enforcement for collateral granted to businesses. This technique follows the model adopted by Italy in 2016 and has been referred to as the “*Martian* pact” dating back to Roman law, according to which the creditor can appropriate the collateral or force its sale, but must always compensate the debtor for any excess value of the collateral once the loan is satisfied. The technique avoids court procedures and has the potential of reducing the time to collect on collateralized loans.

In March 2018, the EC^{1/} proposed a directive introducing such a technique following the Italian model. Potential shortcomings include that the technique is contractual and thus may have limited impact on the existing stock of collateral.

^{1/} Proposal for a directive of the European Parliament and of the Council on credit servicers, credit purchasers, and the recovery of collateral of March 14, 2018.

14. These changes had a remarkable impact on debt recovery, which improved markedly.

The ratio of cases in which money could actually be recovered increased from 1/5 to 1/3 of all cases in the period of 2015–2017. The ratio of moneys actually recovered virtually doubled in the years 2015–2017.¹⁹

15. The institutional framework for debt enforcement has been strengthened in terms of supervision, accountability and control. The reforms adopted during the Fund supported program were aimed at making enforcement agents more competitive (in terms of debt recovery and incentivized fees). There are 1,133 enforcement agents (of which about 2/3 are *solicitadores* and 1/3 attorneys) that are supervised by the (*Comissão para o Acompanhamento dos Auxiliares de Justiça*—CAAJ, a government agency) and in principle compete based on a government endorsed fee structure. Enforcement agents are independent professionals that exercise public power and thus continue to be subject to judicial control in the exercise of the enforcement function. Since 2017, CAAJ has imposed a case load limit of 165 (2017) and 129 (2018) cases per enforcement agent which may be increased dependent on the capacity of the individual enforcement agent. This enables CAAJ to reduce the high number of pending cases with certain enforcement agents since an enforcement agent may not take on new cases unless old cases are resolved.

Corporate Insolvency

16. The authorities have built on the insolvency reforms introduced during the Fund supported program (see Bouveret and others 2016; OECD 2017). These include simplification of

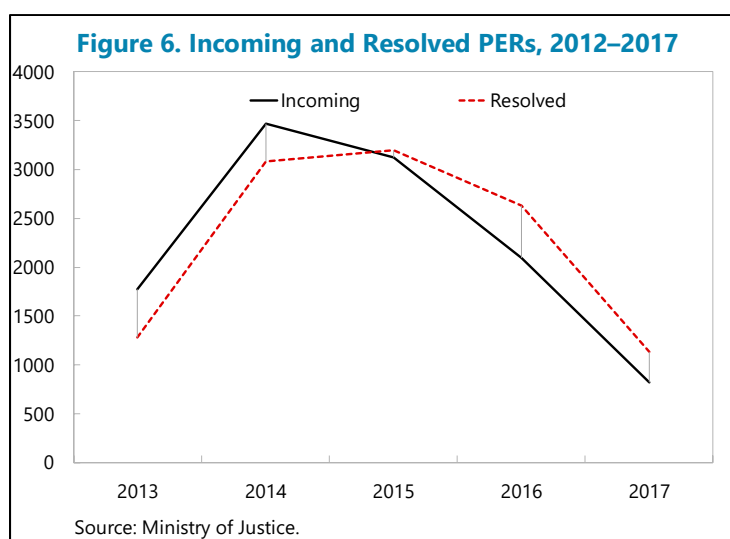
¹⁸ This corresponds to an increase of more than 200 times the amounts recovered before the introduction of the electronic system of garnishments. In the 10 years preceding, the new electronic system of garnishments (September 2003–September 2013) less than €20 million was recovered in total.

¹⁹ High Council of the Judiciary.

the insolvency process, introduction of a preventative restructuring process, and other changes to make the process more efficient and effective. The objective was to make the process simpler, more cost effective, and also to incentivize business to seek rescue earlier.²⁰

17. The corporate insolvency regime, including the preventive restructuring procedure—the *Processo Especial de Revitalização (PER)*—has been accepted and used by the market as a restructuring tool (see Figure 6).²¹ Figures 6 and 8 demonstrate two issues: first, the judicial system can handle all incoming cases since resolved cases exceed incoming cases since 2015 and the stock of pending cases has decreased continuously since 2015. Second, the more restrictive access to PER (see below) appears to have limited the number of incoming cases; in addition, owing to the improved economic climate, there appears to be less demand for troubled but viable companies to restructure using the PER.

18. In June 2017, PER was further reformed. Access to PER has been restricted in two respects: first, it is now limited to solvent but distressed businesses by making the initiation of the PER conditional on the presentation of a declaration signed by an accountant that the business is not insolvent; second, PER may only be reused two years after a previous PER has been approved. PER has also been expanded to cover group insolvencies and is now a fully electronic process.



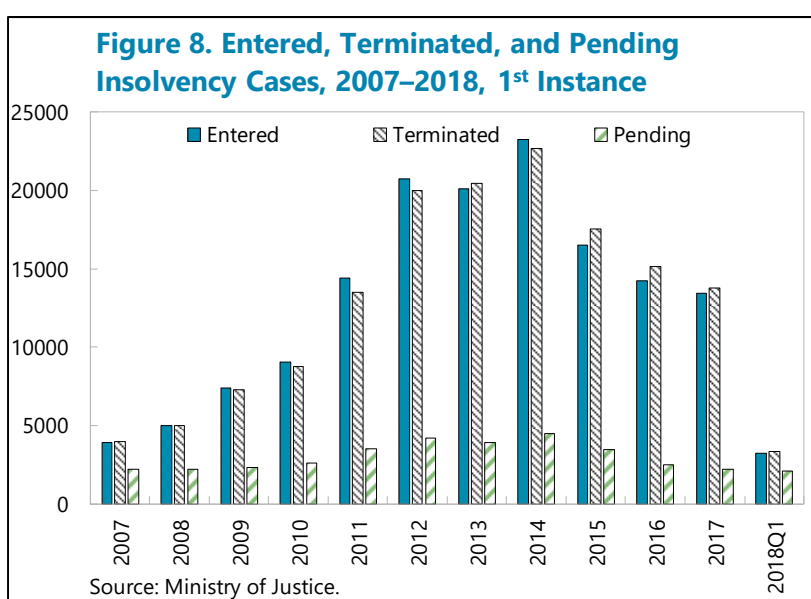
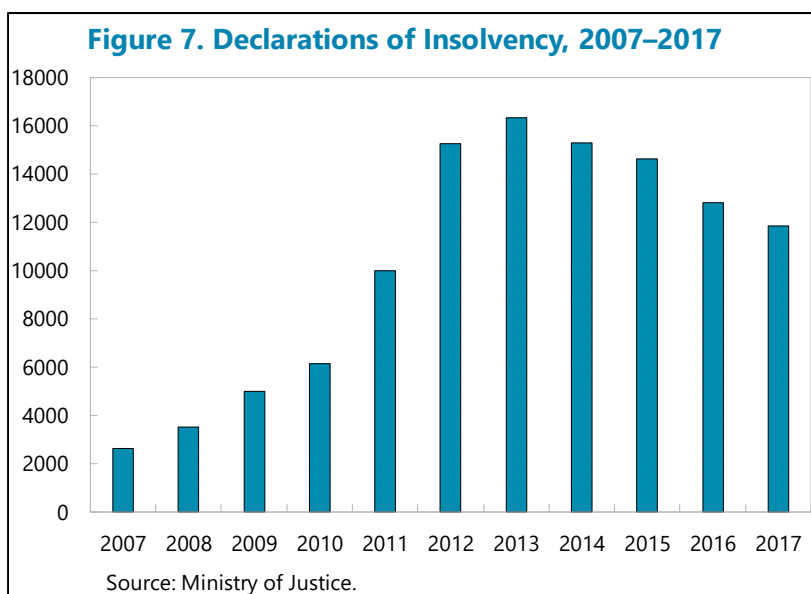
19. Declarations of insolvencies have decreased from their crisis peak (see Figure 7).²² This may be explained in part by the improved economic climate with the return of economic growth. However, given the continued debt distress for some businesses and the number of NPLs, insolvencies will continue to play a role in the clean-up of banks' balance sheets. Overall, new insolvency cases have decreased significantly, pending cases have decreased, and the clearance rate

²⁰ Given the comparatively low numbers of NPLs in the household sector as well as limited feedback from stakeholders, this report does not discuss and further analyze household insolvency issues.

²¹ About 86 percent of PERs relate to companies with the remainder to individuals including for instance sole traders. See Ministry of Justice, DGPJ, Insolvency Statistics, July 2018.

²² It is noted that 77 percent of the declarations of insolvency relate to individuals (including for instance sole traders) and the remainder to companies. This ratio was inverse in 2007 (namely, 81 percent of companies). See Ministry of Justice, DGPJ, Insolvency Statistics, July 2018.

has been above 100 percent. However, the average duration of insolvency cases has increased over the last few years (Ministry of Justice, DGPJ, July 2018).



20. In June 2017, the insolvency liquidation process has also been simplified in a number of respects with the aim of making liquidation more efficient and speedier. The ranking and verification process can now be anticipated and the sale of business units has been simplified. In terms of process, liquidation is now largely electronic and e-auctions are the preferred way of liquidation. The recovery rate for liquidation procedures also continues to increase from 5.8 percent in 2017 to 7.1 percent in 2018.²³ The use of efficient and speedy liquidations is particularly important

²³ Ministry of Justice, Insolvency Statistics, April 2018 and July 2018.

given that 64 percent of the NPLs relate to non-financial corporations, and part of them are non-viable.

21. Recently, the authorities have also undertaken other supporting reforms to increase equity in companies. The government created a mechanism for increasing share capital by converting shareholder loans into shares. In addition, since March 2018, a legal regime for debt-equity swap is in place by which—in cases of negative equity or default—courts may override shareholder opposition to swap debt into equity if requested by two thirds of creditors.²⁴

Out-of-Court Regime

22. It appears that the purely out-of-court principles adopted in 2011 have been used²⁵ and in February 2018, the out-of-court regime—namely, the *Sistema de Recuperação de Empresas por Via Extrajudicial (SIREVE)*²⁶ was replaced by a new out-of-court process—*Regime Extrajudicial de Recuperação de Empresas (RERE)*.²⁷ Since purely out-of-court restructurings are typically confidential and do not involve courts there is no official data on them. Up until December 2017, 625 cases (83 percent of which were micro or small businesses) entered the SIREVE process, of which 87 percent were accepted. Of those, about 94 percent have concluded in the meantime, with 57 percent of those cases ending with a debt restructuring agreement.²⁸ The median duration of the concluded processes was about eight months.

Box 2. Key Differences Between RERE and SIREVE

There are a number of key differences between RERE and SIREVE:

- Instead of the *Agência para a Competitividade e Inovação* (IAPMEI, a government agency), there are newly certified mediators that may support the debt restructuring process.
- In contrast to SIREVE, RERE no longer stays creditors' enforcement actions. RERE is purely out-of-court and does not have any enhanced (in-court) features like SIREVE. However, PER can be used to approve a restructuring plan agreed under the RERE.
- In RERE, the early warning attestation from an accountant is no longer mandatory. There is now a general early warning system for all businesses administered by IAPMEI.
- Tax incentives treating debt restructuring events as tax neutral are available for the RERE.

23. Regarding private sector initiatives, the three major banks set up a platform to coordinate debt claims concerning their common debtors. This platform became operational in May 2018. The governance structure of the platform enables coordination and triaging of the NPLs among the participating banks.

²⁴ Law 7/2018, of March 2, 2018.

²⁵ Out-of-court principles of October 25, 2011.

²⁶ Decree-Law 178/2012, August 3, 2012, as amended by Decree-Law 26/2015, February 6, 2015.

²⁷ Law 8/2018, March 2, 2018.

²⁸ See SIREVE *Síntese Informativa* December 2017.

Institutional Reforms

24. The institutional framework has been strengthened. According to CAAJ, there are now 347 insolvency administrators (*administradores de insolvência*, 77 of which have been licensed since May 2015 under the new law). This contrasts to the first decade of the 2000s in which there was a limited number of licensed insolvency administrators, without any new entries. Despite a system of random appointment of insolvency administrators (which can be overwritten by judges), in practice, the allocation of cases appears to be uneven among insolvency administrators, with a large concentration of cases in a few insolvency administrators. A few implementing regulations (*portarias*) appear to be still needed to make the profession of insolvency administrators fully operational, and should be issued without delay.

25. The authorities adopted a corporate recovery mediators' statute. Licensed mediators will assist businesses in debt distress to restructure efficiently. Insolvency administrators and other professionals may also be licensed and appointed as mediators, provided they receive specialized training.

26. IAPMEI has been tasked with creating an early warning mechanism for SME and small mid-caps businesses. The objective is to incentivize business to restructure early. This will require specialized and well-trained staff to identify distressed businesses early.

27. The reforms of the judiciary have been further pursued. While certain closed courts have been reopened in the meantime, the streamlined judicial map has been implemented. The High Council of the Judiciary has strengthened its monitoring and supervisory activities, instituting a maximum delay for setting hearings, which is actively monitored, among other changes. While there are no specialized insolvency judges or courts in Portugal, the Portuguese judiciary has specialized commercial judges which includes insolvency matters among the commercial matters; in a few larger courts, some of these commercial judges exclusively focus on insolvency cases. There are about 77 specialized commercial judges in Portugal.

Tax Treatment of Debt Restructuring and Public Creditors

28. The authorities have in the past few years introduced a number of tax incentives for debt restructuring and debt-into-equity conversion. They have introduced a tax incentive for cash contributions to increase shareholdings and a tax incentive for shareholder loans' conversion into equity. Finally, income from debt restructuring is mostly treated tax neutral (for example, capital gains from transfer in lieu of payment or transfer of goods are exempt from income tax and most of the contracts and other acts made in the process of insolvency are exempt of stamp duty). These measures should incentivize both creditors and debtors to pursue debt restructuring. It appears too early to assess the effectiveness of these measures.

29. Public creditors (tax authorities and social security) were identified as one of the impediments for NPL resolution due to their privileged role and strict legislative requirements (Bouveret and others, 2016). While tax arrears actively being pursued are limited (3 percent of GDP), the tax and social security authorities are an involuntary creditor in many debt restructurings

and insolvencies.²⁹ No principal write-offs may be agreed by them and they may only stretch unpaid debts up to 150 installments. The authorities are in the process of setting up a one-stop-shop (*balcão único*) for public creditors to enhance coordination among them.

Other Measures

30. The authorities have taken a number of other measures. NPLs portfolio sales in Portugal have been limited compared to other euro-area countries but have increased in 2017 compared to 2016 (ECB, 2018; BdP, 2018) and the authorities are setting up various financing support facilities in the context of the *Capitalizar* Initiative. In this regard, the authorities plan on adopting a simplified regime to transfer entire NPL portfolios. In addition, the authorities are adopting various measures to improve the capital market.

C. Market Perceptions and Indicators

31. While the reforms were significant and have generated measurable results as demonstrated by the official court data, its impact on NPLs has been less evident. This calls for further analysis, in which the following possibilities should be explored.

- **Reforms.** The analysis suggests that the legal and institutional system for debt enforcement and insolvency is not uniformly efficient. While some parts of the legal enforcement system have been significantly reformed and are very efficient (such as unsecured debt enforcement), others may need further reforms after detailed analysis (such as the average duration of insolvency procedures, which continues to increase). While data processing is generally of high quality and comprehensive, it could be further enhanced for certain types of cases in terms of debt recovery (rehabilitation cases) to assess efficiency and inform the necessity for further reforms.
- **Debt types.** The analysis also suggests that the efficiency gains particularly affect the debt types which constitute the bulk of *injunção* procedures (unsecured small consumer credit). It may be less impactful on other types (such as secured debt), which seem to constitute the bulk of the NPLs.
- **Record keeping.** Portugal keeps all enforcement cases on the court register after the court decision has been issued (until full satisfaction of the claim). Most countries in Europe do not. The result is that Portuguese statistics tend to show a high number of pending cases, when in fact these cases are not actually pending in court, but just awaiting payment (for instance, payments in installments).
- **Time lag.** Some indicators have been slow in reflecting the effects of the reforms for technical reasons. The Fund staff survey and the ECB report date back to 2016 (ECB, 2016; Jaeger and Martins, 2016). This notably includes time lags, in which some indicators lag market developments (or institutional performance measurement) by a couple of years—

²⁹ The authorities closely monitor the tax cases in litigation in the administrative and tax courts. Data informs that the pending cases have decreased recently but disposition times continue to increase. See Ministry of Justice. DGPI.

such as the 2018 EC Justice Scoreboard, which generally uses 2016, but on some charts, use data as old as 2010 or the OECD report that uses 2014 data (EC, 2018; OECD, 2018).

- **Survey versus analysis.** Indicators which are based on perception and surveys rather than on data and empirical studies, tend to be more critical.³⁰ This seems to suggest that market perceptions lag indicators based on data and empirical studies.

32. Finally, it is recognized that an efficient legal and institutional framework for debt enforcement and insolvency is only one of the elements needed to resolve NPLs (Aiyar and others, 2016). For a number of reasons, the authorities have not employed all tools available to resolve NPLs such as asset management companies. NPL sales only recently have increased. There have also been major bank recapitalizations in recent years further stabilizing the financial system (IMF, 2018). Some stakeholders also report that during the height of the crisis, creditors may have used delays in the court system to buy time to await economic recovery and asset price appreciation. There is limited publicly available data to better understand the stock of NPLs in terms of vintage and types of loans (for instance, secured versus unsecured).

D. Conclusions

33. Empirical evidence and official data confirm that the reforms to the debt enforcement and insolvency regime have been sustained. The reforms have been structural and continued in the post Fund-supported program period. This is commendable. It appears that market perceptions may lag actual system performance to some extent.

34. The authorities continue monitoring and reforming the insolvency and debt enforcement system. The authorities on many levels actively monitor and adjust, to the extent necessary, prioritization and resources. The level of coordination among ministries and agencies continues to be exemplary. For example, the Ministry of Justice closely monitors insolvency and debt enforcement cases and immediately adjust as necessary. The High Council of the Judiciary recently introduced a trial system to monitor debt enforcement cases' recovery rates and disposition times, which is unique in Europe. The authorities' recent plan on the *justiça mais próxima*—which is a plan to make the judiciary a one-stop shop and access electronically to the extent possible—is positive and demonstrates their continued commitment to reform. Finally, Portugal will need to transpose or comply with any instruments—such as the proposed EU preventive restructuring directive—eventually adopted by the EU including in the context of the 2017 Council Conclusions on an Action Plan to Tackle Non-Performing Loans in Europe.³¹

35. Despite the comprehensive approach to tackling NPLs in Portugal, the focus on NPL resolution for corporates—in particular SMEs which are the highest segment (BdP, 2018; Berghaler and others 2015)—must continue at the top of the authorities' agenda. In recent

³⁰ More generally, the Fund has attached priority to data-based third-party indicators over perception-based ones. See International Monetary Fund (2017).

³¹ Proposal for a Directive of the European Parliament and the Council on preventive restructuring frameworks, second chance and measures to increase the efficiency of restructuring, insolvency and discharge procedures. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2016:0723:FIN>.

years, NPL rates have decreased but continue to be elevated. Two issues should be further pursued: First, public creditors should participate in debt restructuring like other creditors, subject to clear and predictable guidelines (Aiyar and others, 2015; Bouveret and others, 2016). Second, non-viable, insolvent businesses should be liquidated rapidly to return the residual assets to economic use. Directors and creditors of such non-viable and insolvent businesses currently do not file for timely liquidation, distorting competition and hampering NPL resolution.

36. While data collection, processing, and analysis is very well developed and of high quality in Portugal, the authorities could also collect data on the efficiency of the insolvency cases like they have started to do for enforcement cases. This could include data on recovery rates for creditors (which is already being collected for liquidations) and the number of businesses that continue operating successfully after implementing a restructuring plan. This could much better target future reform efforts and also assist in price discovery for the sale of NPL portfolios. It is recognized however that such collection of data may be very costly and complex.

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