

## II.2. Assessing the private sector deleveraging dynamics <sup>(22)</sup>

The negative impact of excessively high debt stocks and rapid credit expansion on financial stability and economic growth has become evident during the current financial and economic crisis. The necessary balance sheet adjustment process is still ongoing, with adverse consequences for economic activity. Against this background, analysing the extent of the needed deleveraging, its path and the impact on major macroeconomic and financial aggregates is crucial. The present section contributes to this work (i) by analysing how deleveraging dynamics in the non-financial sector might be influenced by the underlying credit market conditions in the euro area and (ii) by discussing some key conditions that should be in place in order to minimise the impact of deleveraging on economic activity. Overall, the analysis points to strong credit market pressures on both the supply and demand side in some euro area countries. In most of these countries, however, depressed activity means that apparent deleveraging, as measured by debt-to-GDP ratios, is progressing only slowly despite significantly negative credit flows.

### Introduction

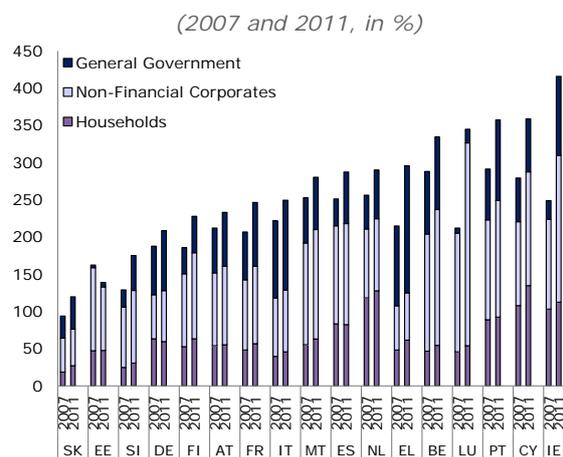
Indebtedness grew significantly in several euro area Member States before the current crisis, driven mainly by the boom in real estate prices and construction, distortionary taxation which induced both households and firms to take on debt, low interest rates, financial sector innovation and less tight lending standards. The crisis itself has also been a driver of increased debt in the public sector. In many euro area Member States, indebtedness measured against GDP was significantly higher by the end of 2011 when compared to pre-crisis levels (Graph II.2.1).

In addition, the current levels of indebtedness are excessive in some Member States, taking into account not only income prospects and assets held,

but also the underlying potential spillovers and systemic effects.<sup>(23)</sup>

Based on past experience, the necessary reduction of these excessively high levels of debt is likely to take many years and be associated with strong contraction in economic activity. Nevertheless, macroeconomic stability, financial deepening and other legal or institutional features may justify different levels of sustainable debt and, consequently, different deleveraging needs and paths across Member States. Understanding the extent of deleveraging and underlying balance-sheet adjustment and the impact on the main macroeconomic aggregates and financial stability is, hence, crucial at this juncture.

Graph II.2.1: Debt to GDP ratio by sector, euro area Member States (1)



(1) Households, Non-Financial Corporates and General Government refer to S14\_S15, S11 and S13 sectors, respectively, in European System of Accounts (ESA) terminology.

Source: Eurostat.

Against this background, Reinhart (2012)<sup>(24)</sup> identifies five main drivers of deleveraging, as measured by the reduction in the debt-to-GDP ratios: economic growth; increased savings (including through fiscal consolidation); increases

<sup>(22)</sup> Section prepared by Carlos Cuerpo Caballero, Ines Drumond and Peter Pontuch.

<sup>(23)</sup> For a more detailed analysis on the likelihood and the extent of deleveraging pressures at a sectoral level for EU countries, the interested reader may refer to Cuerpo, C., I. Drumond, J. Lendvai, P. Pontuch, and R. Raciborski (2013). 'Indebtedness, deleveraging dynamics and macroeconomic adjustment,' *European Economy Economic Papers*, forthcoming.

<sup>(24)</sup> Reinhart, C. (2012), 'Financial repression back to stay', available at <http://www.bloomberg.com/news/2012-03-11/financial-repression-has-come-back-to-stay-carmen-m-reinhart.html>.

in inflation; financial repression;<sup>(25)</sup> and debt restructuring. Of all the options, an increase in the growth rate of real GDP is certainly the favoured ‘policy option.’ However, as pointed out by Buiter and Rahbari (2012),<sup>(26)</sup> growth is not a policy but an outcome each Member State enjoys depending on (i) the policies and institutions in place; (ii) the external environment; (iii) affordable funding for the sovereign and other systemically important institutions; and (iv) luck. Therefore, one may find different patterns of deleveraging across euro area Member States, depending, inter alia, on different economic growth prospects.

The present section contributes to this debate by providing additional insights on how deleveraging dynamics in the non-financial sector might be influenced by the underlying credit market conditions in the euro area. Despite being generally independently addressed in the literature, the link between balance-sheet adjustments in the non-financial private sector and deleveraging pressures in the banking sector is clear: deleveraging in the banking sector, by influencing credit supply negatively, is a driver of non-financial private sector deleveraging, and the latter, by affecting economic activity, has an impact on the banks’ balance-sheet adjustment (e.g. through non-performing loans). In this context, this section explores this link by first assessing credit supply and demand conditions in the different euro area Member States and then analysing the changes in the euro area household and non-financial corporate debt-to-GDP ratio in the light of these supply and demand conditions.

### Credit supply and demand pressures

Credit market conditions are a key factor affecting the dynamics of the ongoing balance-sheet adjustment in several Member States. The analysis in this section focuses on a set of variables that influence or reflect either credit supply or demand conditions. Keeping in mind that no variable can be labelled as exclusively demand- or supply-related, the variables are chosen depending on whether they predominantly reflect either one of the two sides of credit market conditions.

<sup>(25)</sup> Defined by Reinhart (2012) as policies leading to consistent negative real interest rates (that are equivalent to a tax on bondholders and, more generally, savers) thus easing the burden of servicing that debt.

<sup>(26)</sup> Buiter, W. and E. Rahbari (2012), ‘Debt of nations’, *Citi GPS*, November 2012.

The set of credit supply-related indicators considered includes the following variables reflecting financial soundness, an important factor affecting credit supply (Bernanke and Lown, 1991, Woo, 1999, BédDuc et al., 2005):<sup>(27)</sup> ECB consolidated banking data on overall non-performing loans (specifically the increase relative to 2007 levels), the Tier 1 capital ratio and the banks’ return on equity. Banks’ exposure to high risk foreign claims as percentage of GDP is also added, so as to capture potential negative external spillover effects. Sovereign CDS spreads are also included in this set of variables to address the link between sovereigns and the banking sector.

These indicators of financial sector soundness are supplemented with information from two surveys. First, the Eurosystem Bank Lending Survey (BLS), which provides information about changes in banks’ credit standards as applied to the approval of (i) loans or credit lines to enterprises and (ii) loans for house purchase granted to households.<sup>(28)</sup> In order to obtain a smoothed measure of lending tightness, a trailing 1-year average of the net percentage of banks that tightened their credit standards is used. Second, the survey on the access to finance of SMEs (SAFE) in the euro area – providing information on loan application success in the past six months – is used to construct a loan request failure rate, equal to the percentage of requests that did not receive all or most of the amount requested.

On the credit demand side, two measures of perceived economic conditions are included in the set of indicators, namely the Consumer Confidence Indicator and the Economic Sentiment Indicator, both published by the European Commission. The unemployment rate and the house price trend (relative to 2007Q4) are also added to the demand proxies. Changes in house prices influence households’ wealth and the overall sentiment, hence providing information about households’ willingness to take on debt. Moreover, prices in the

<sup>(27)</sup> Bernanke, B. and C. Lown (1991), ‘The credit crunch,’ *Brookings Papers on Economic Activity* 2:1991, pp. 205-247; Woo, D. (1999), ‘In search of capital crunch: Supply factors behind the credit slowdown in Japan,’ *IMF Working Paper* 99/3; BédDuc, L., G. de Bondt, A. Calza, D. Marqués Ibáñez, A. van Rixtel, and S. Scopel (2005), ‘Financing conditions in the euro area,’ *ECB Occasional Paper*, 37/2005.

<sup>(28)</sup> According to de Bondt et al. (2010), the BLS is a leading indicator of bank lending to both enterprises and households: De Bondt, G., A. Maddaloni, J.-L. Peydró, and S. Scopel (2010), ‘The euro area bank lending survey matters: Empirical evidence for credit,’ *ECB Working Paper*, 1160/2010.

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housing market affect the amount of mortgage loans granted, not only due to demand but also through supply side effects by affecting the value of collateral (financial accelerator effect).

These proxies are supplemented with direct survey data. BLS data are used to include information about changes in demand for (i) loans or credit lines to enterprises and (ii) loans for house purchase granted to households. Question Q5 from the SAFE survey – ‘External financing needs over the past 6 months’ – is also used. A net balance is calculated by taking the difference between the percentage of firms where financing needs increased and those where they decreased and calculating the 1-year trailing average.

The supply and demand indicators are then used to compare individual Member States, either through visual stress maps or through a composite indicator. There are several arguments in favour of such a relative approach in assessing credit market conditions. First, it might be unfeasible to devise country-specific absolute thresholds for each variable, given data limitations and identification problems. Moreover, a relative analysis complemented by an assessment of the overall credit market conditions may provide a useful first approximation of actual tensions faced by individual Member States. Finally, borrower creditworthiness is a relative concept and investors tend to judge debtors (countries or sectors) from a relative rather than an absolute point of view.

The credit supply and demand variables are first analysed within a stress map of credit supply and demand conditions. For each variable, the range of the graph is given by the maximum and minimum observation among all Member States with available data. A weighted average of all available EU Member States is provided as a visual reference. Variables are plotted on a regular or inverted scale ensuring that a larger map corresponds to more adverse conditions.

Graph II.2.2 provides an illustration using the Italian and Estonian cases as examples of, respectively, a vulnerable Member State and a Member State facing more limited deleveraging pressures. The Italian stress maps signal credit supply pressures in the face of subdued credit demand. On the other hand, less stress is signalled on both the supply and demand side for Estonia,

which went through a fast adjustment at an earlier stage of the crisis, just before joining the euro area.

To obtain an overall view of the 17 euro area Member States, the information contained in each of the individual variables is aggregated into composite indicators of credit demand and supply pressures. These overall indicators are based on the average ranking of Member States. More specifically, the percentile-based rank of each Member State is calculated for each variable. The average rank is then calculated separately for supply and demand variables and scaled between 0 and 10. The results are reported in Graph II.2.2.e.

There is thus a group of four Member States (Cyprus, Greece, Portugal and Slovenia) with strong credit market pressures that are likely to affect the short-term deleveraging dynamics. Italy, Spain and the Netherlands constitute a second group experiencing significant credit market pressures. Within these two subsets, the supply side seems to dominate in Cyprus, Slovenia and Portugal. Demand pressures tend to prevail in Spain and the Netherlands. Short-term pressures appear to be limited in Germany, Estonia, Malta and Finland, while they are moderate in the other Member States.

In order to complement this static grouping, Graph II.2.2.f. shows the evolution of the credit pressure indicators over the last year. Supply pressures have deteriorated recently in the Netherlands and Slovenia, while credit demand has weakened in Italy.<sup>(29)</sup>

This assessment can next be used to interpret the ongoing deleveraging patterns observed in the euro area, focusing especially on the contributions to the change in the debt-to-GDP ratio.

### **Credit conditions and current deleveraging patterns**

According to empirical evidence presented in McKinsey (2010), ‘belt-tightening’ processes are the most common forms of deleveraging processes.<sup>(30)</sup> During such processes, deleveraging

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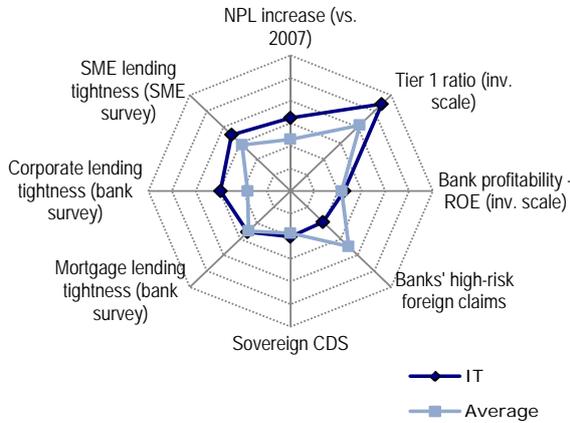
<sup>(29)</sup> It is worth noting that this pattern is partly influenced by the construction of the BLS survey variables (trailing one-year average tightening).

<sup>(30)</sup> McKinsey Global Institute (2010). ‘Debt and deleveraging: The global credit bubble and its economic consequences.’

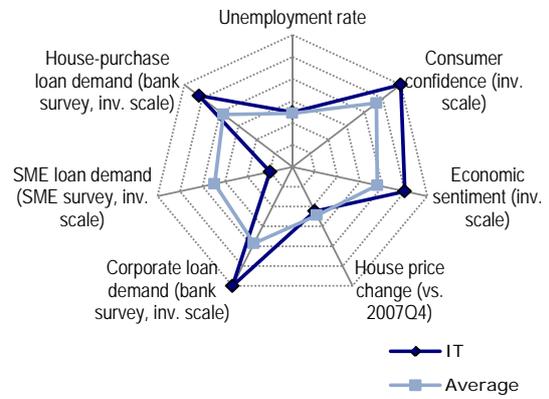
Graph II.2.2: **Stress maps and composite indicator of credit supply and demand conditions (1)**

(most recent 2012 data) (2)

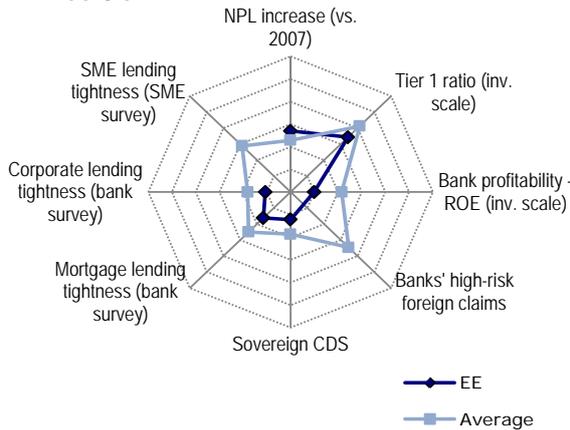
**a. Supply pressures, IT**



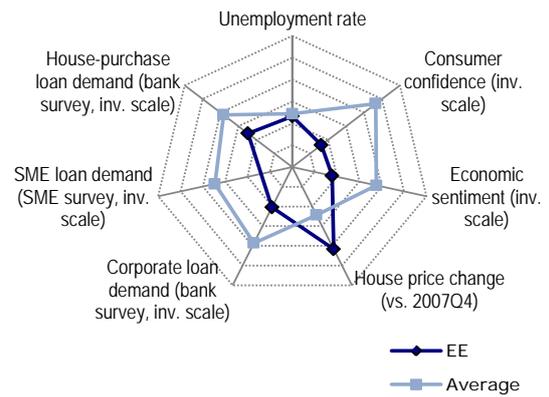
**b. Demand pressures, IT**



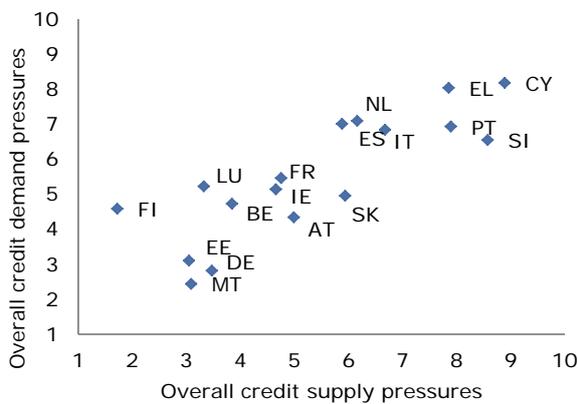
**c. Supply pressures, EE**



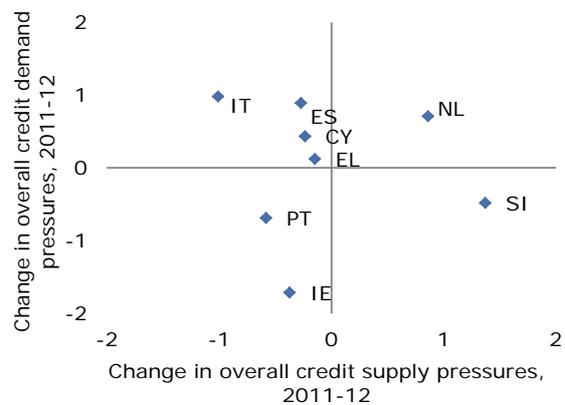
**d. Demand pressures, EE**



**e. Overall pressures, euro area countries**



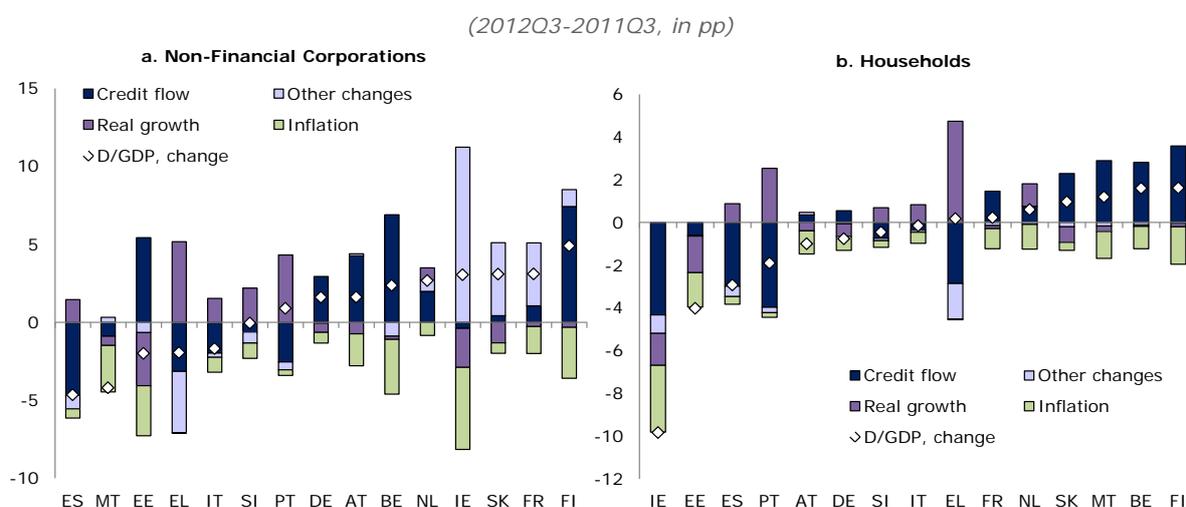
**f. Changes of pressures, selected euro area countries**



(1) Panels a to d cover IT and EE. Similar charts for other Member States can be obtained from the authors.  
 (2) The various panels cover the most recent available data (four quarters to 2012 Q2, or Q3 or Q4).

Source: ECB, BIS, IMF, Datastream, Eurostat, DG ECFIN.

Graph II.2.3: **Decomposition of y-o-y changes in debt-to-GDP ratios, euro area countries (1)**



(1) Quarterly data for Cyprus and Luxembourg are not available after 2011Q2.

Source: Eurostat.

in the private sector, defined as a reduction in the debt-to-GDP ratio, generally materialises through positive credit growth below the nominal GDP growth rates.

When faced with high deleveraging pressures, however, the pace and extent of the adjustment may vary across countries, reflecting the existent heterogeneity in credit market dynamics, the variety of financial institutional frameworks, and different deleveraging needs, as mentioned in the introduction. In particular, deteriorating credit conditions can become a differentiating factor turning ‘belt-tightening’ into a deleveraging process characterised simultaneously by disrupted credit markets and economic recession. Falling net credit can add to other downside pressure on activity (e.g. from a weak external environment, policy uncertainty or fiscal consolidation) so that depressed growth offsets the credit flow effect and leads to a temporary increase of the debt ratio.

Balance sheet recessions are commonly seen as a borrower phenomenon (Koo, 2011).<sup>(31)</sup> Uncertainty over aggregate macroeconomic conditions, shocks to asset prices, excessive debt taking or tightening credit conditions usually lead to a change in the risk attitude of the private sector towards debt minimisation. Deleveraging efforts

involving firms and households imply a first-order impact on economic growth via subdued consumption and investment expenditure. Moreover, balance sheet repairing episodes could be hampered by credit supply constraints as the banking sector deleverages and financial risks materialise.

In order to assess the impact of credit developments on deleveraging, the changes in the euro area household and non-financial corporate debt-to-GDP ratio are decomposed into their main components: the numerator effect, depending on net credit flows and other changes, including nominal holding gains/losses and other changes in volumes,<sup>(32)</sup> and the denominator effect, depending on real GDP growth and inflation.

GraphII.2.3, in particular, shows the decomposition of the year-on-year changes in non-financial corporation and household debt-to-GDP ratios, from 2011Q3 to 2012Q3 (the latest data available).

Recent developments have been quite heterogeneous across euro area Member States, ranging from large drops in firms’ leverage in Spain, Estonia, Greece, Italy and Malta, and in households’ leverage in Ireland, Estonia, Spain and Portugal, to significant increases in France, Finland

<sup>(31)</sup> Koo, R. (2011). ‘The world in balance sheet recession: causes, cure and politics,’ *Real-World Economics Review*, 58, pp. 19-37.

<sup>(32)</sup> Notably reclassifications, write-offs and write-downs.

and Belgium (in both corporate and household sectors).

Among the countries experiencing deleveraging in the corporate sector, negative net credit flows appear as a significant contributor in Spain, Greece and Italy. On the contrary, both real GDP growth and inflation are driving the ratios down in Estonia and Malta. At the same time, the Portuguese corporate debt ratio has increased despite negative credit flows due to a negative real growth effect, whereas for Ireland the increased ratio is due to wide-ranging positive debt valuation effects,<sup>(33)</sup> which were not fully compensated by nominal growth (real GDP and inflation effect). Moreover, negative valuation effects, together with debt restructuring elements, are visible in the other changes contribution for Greece.

On the household side, negative net credit is the main deleveraging force in Spain, Portugal, Slovenia and Greece, partially or even completely offset by the impact of economic recession. The situation is particularly acute in Greece, where strong negative GDP growth effects are impeding effective private sector deleveraging, despite very negative net credit flows. Ireland and Estonia underwent a larger correction in the debt ratio as real growth and inflation joined forces with negative credit flows. Lastly, Austrian and German households appear to be growing out of debt as they deleveraged through economic growth while keeping positive net credit flows.

All countries signalled as experiencing credit market pressures in the previous section seem to share the deleveraging process characterised by simultaneous disrupted credit markets and economic recession: negative GDP growth (and thus positive contribution to the leverage ratio) and negative net credit flows (negative contribution to the ratio), except for the Netherlands, where credit still flows and Ireland, with positive real growth. As discussed in the previous section, credit demand pressures dominate in the Netherlands, while Ireland has recently improved on both credit supply and demand conditions (after the restructuring of the financial sector). Looking ahead, a healthy and stable financial sector appears to be of critical relevance, in order to minimise any

spread of contagion effects from private sector deleveraging to the rest of the economy.

## Conclusion

After a prolonged phase of large credit flows to the private non-financial sector, many euro area countries currently face large deleveraging pressures. Overly indebted households and firms will have to go through a protracted adjustment period as credit markets adjust.

There are several possible scenarios under which deleveraging in the private sector could take place. Negative feedback loops between aggregate economic conditions, private sector willingness to take on debt and credit provision could, if left unchecked, turn adjustment or 'belt-tightening' processes (i.e. deleveraging through positive credit flows lower than nominal GDP growth) into a deleveraging process characterised by large negative credit flows and economic contraction, or may even lead to temporary re-leveraging despite negative credit flows, due to offsetting economic depression.

The current situation is also challenging to the extent that the high levels of debt apply not only to the private sector but also to the public sector, particularly in the most vulnerable Member States where the financial and non-financial sectors face significant deleveraging pressures. These simultaneous deleveraging needs, the negative feedback loop between the sovereign and the banking sectors, and the link between financial and non-financial private sector deleveraging (translated into credit supply and demand pressures) represent a significant drag on economic growth. As all the domestic institutional sectors need to reduce their debt burden simultaneously, there is not much room for manoeuvre to break the deleveraging spiral by having some sectors in the economy increasing their level of indebtedness and supporting the economic recovery.

Against this background, a well-capitalised and viable financial system is clearly important for achieving a healthy adjustment process, by guaranteeing adequate credit provision so that firms and households willing to borrow are able to do so at reasonable cost. However, in order to minimise the impact of private sector balance-sheet restructuring on economic activity and financial stability, the search for growth drivers is also of

<sup>(33)</sup> Influenced in particular by the appreciation of the dollar with respect to the euro over the last four quarters (around 12%), given the high share of dollar-denominated debt in the Irish corporate sector.

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critical importance to the extent that those drivers are able, at least partially, to offset the transitory fall in domestic demand. This is of particular relevance in the aforementioned current circumstances as the room for manoeuvre by the public sector to attenuate the underlying negative consequences for economic activity is extremely limited in countries whose public sector is also highly indebted<sup>(34)</sup> and for which sovereign yields have increased significantly during the crisis.

A positive contribution from external demand acted as a natural growth substitute in past deleveraging episodes (see the example of the Nordic countries in the 1990s). Positive net exports

help in rebalancing the growth pattern towards more productive, less labour-intensive tradable sectors, while supporting economic recovery and bringing down debt ratios. In this context, structural reforms assume particular relevance not only by guaranteeing a durable rebalancing process but also by attenuating the negative impact of deleveraging and ensuring the right conditions for sustainable economic growth. In addition, and given the procyclical nature of financial flows, the right financial supervision tools, notably in relation to macro-prudential supervision, must be developed to guarantee that the new lending will support the rebalancing process and excessive imbalances will be avoided in the future.

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<sup>(34)</sup> In some cases due to excessive private indebtedness (mainly financial) that was transformed into public sector debt.