Structural reforms in the euro area[1]

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ABSTRACT

This article is about structural reforms, *i.e.* (policy) measures with the purpose of enhancing the supply side capacity of an economy. In particular, the article is focused on the euro area. The need for structural reforms in the euro area is not new but the financial crisis made it more urgent. The article overviews the main results regarding the macroeconomic impact of these reforms in the economic literature based on general equilibrium structural models. It also addresses the issue of the relationship between structural reforms and monetary policy, in particular when nominal interest rates are at the zero lower bound.

Introduction

This article is about structural reforms, *i.e.* (policy) measures with the purpose of enhancing the supply side capacity of an economy. These types of measures have been in the policy agenda for years, namely given the lacklustre economic performance of several euro area countries when compared to other advanced economies such as the US. Despite the fact that these measures usually face strong opposition from some parts of the society, progress has been made in recent years. Still, room for improvement exists.

The article overviews the main results in the literature regarding the macroeconomic effects of supply-side structural reforms. Even though it is reasonable to conjecture that these reforms may enhance the potential growth of an economy, in the models used in this strand of the literature long-run growth is exogenously determined. As such, this literature is not yet suited to help us understand how these reforms may help in achieving a higher growth potential. Instead, structural reforms increase the supply-side capacity of an economy and thus imply a permanent increase in the level of macroeconomic variables such as output, consumption and employment.

In the following, we first motivate the need for structural reforms in the euro area. Then we overview the main results regarding the potential effects of these measures in the economic literature based on structural models. Finally, we discuss the interplay between structural reforms and monetary policy and end with some final remarks.

The need for structural reforms in the euro area

Over the last decades, the euro area has presented a weaker economic performance compared to other developed economies. For example, in the period 1980-2013, the euro area recorded an average annual growth of 1.7 per cent which compares to 2.7 per cent in the US (Chart 1).[3] As stressed by the European Commission (2010), this has been due to different developments in productivity linked to difference s in business structures, levels of investment in R&D and innovation, insufficient use of information and communications technologies, barriers to market access and a overall less dynamic business environment (see also IMF (2010)). The more sluggish economic growth has implied a persistent gap between the levels of GDP *per capita* in the euro area as compared to other developed economies, namely the US (Chart 2). Lagging GDP *per capita* levels

in the euro area result not only from lower productivity in the euro area but also from underutilization of labour (see IMF (2010) and Barkbu, Rahman and Valdés (2012)). For example, Mourre (2009) shows that lower labour utilization explained two-thirds of the differential in the GDP *per capita* level between the euro area and the US in 2006.[4]

While the need for action in the euro area is not new, it was made even more urgent with the recent global financial crisis (and the ensuing euro area sovereign debt crisis) which has implied permanent output losses. In fact, even though measuring (long-run) potential GDP is very difficult as this is an unobservable variable, taking European Commission estimates, potential GDP growth in the euro area as a whole declined from close to 2 per cent in the years prior to the crisis to around 0.5 per cent (Chart 3).

International organizations such as the European Commission, the International Monetary Fund (IMF) or the Organization for Economic Cooperation and Development (OECD) have frequently stressed the need to introduce structural reforms in European countries, *i.e.* policy measures with the purpose of changing the institutional framework and constraints on market functioning. By improving market functioning and increasing flexibility, these reforms enhance the supply-side capacity of an economy and consequently potential output and employment.[5] In fact, this was one of the main goals of the European Council's Lisbon Strategy for Growth and Jobs. It is also an important feature of the Europe 2020 strategy that followed it (see, for example, European Commission (2010, 2014)).

Quantifying the flexibility, or lack of, in product and labour markets is challenging. The OECD produces a set of qualitative indicators that mainly focus on the contents of legislation. Excessive regulation may be an impediment to market functioning by restricting entry, regulating price formation among other things, giving market power to firms. Regarding product markets, the indicators of Product Market Regulation (PMR) assess product market regulation through the State's intervention in markets, barriers to the establishing of companies and barriers to international trade and investment. As for the labour market, the Employment Protection Legislation (EPL)
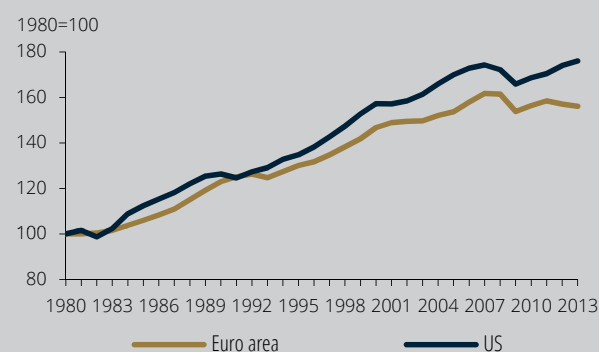
Chart 1 • Real GDP growth
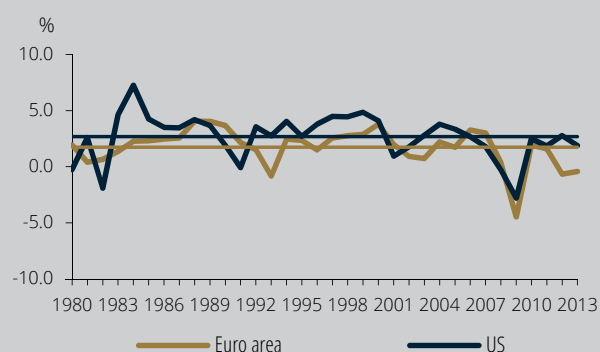
Sources: European Comission AMECO database and author's computations.

Note: Horizontal lines correspond to period averages.

Chart 2 • GDP *per capita*

Sources: European Comission AMECO database and author's computations.

indicator measures employment protection for the different types of contracts. Between 1998, 2003 and 2008, most European countries showed a favourable evolution regarding these indicators (Charts 4 to 6).[6] However, most of them also still regulate more strictly than the US. Within the euro area, sizeable country heterogeneity exists.

While structural reforms have been on the agenda for several years, its implementation often faces opposition in the society. This is mainly related to the fact that there is an uneven distribution of aggregate benefits and costs of structural reforms, both across economic sectors and across time. To enhance the probability of a successful implementation it seems crucial that reforms are compre-
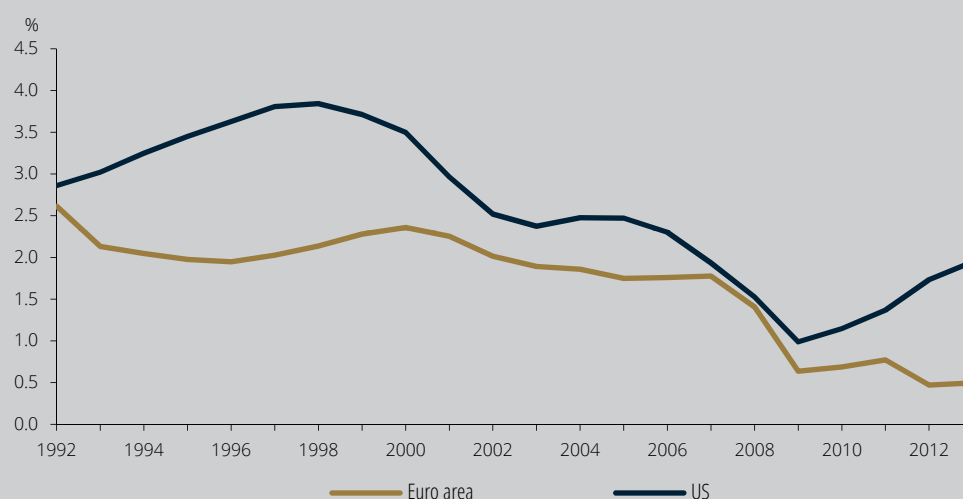
Chart 3 •
Potencial GDP
growth since
the 1990´s

Sources: European Comission AMECO database and author's computations.
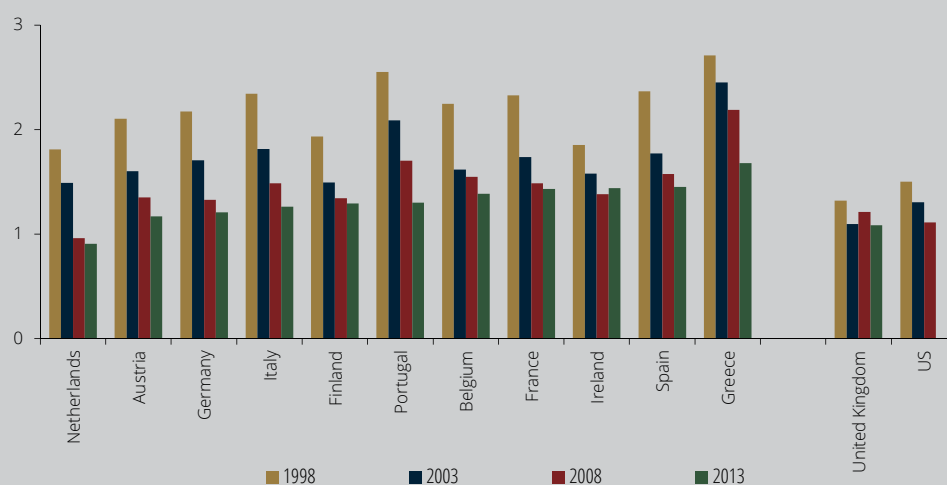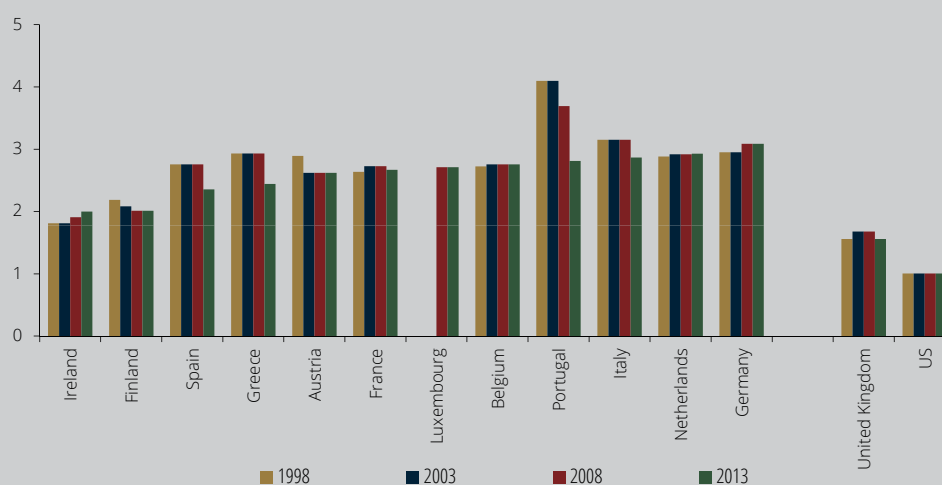
Chart 4 •
Product
Market
Regulation
Indicator

Source: OECD.

Note: The indicator ranges from 0 to 6. A higer value indicates stricter regulations.

hensive in order to increase the perception of a fair distribution of costs and benefits across society. There is also some evidence that difficult economic conditions, namely crisis periods or prolonged periods of negative or very low growth, can often foster support for the implementation of structural reform (see, for example, Drazen and Easterly (2001) or Høj, Galasso, Nicoletti and Dang (2006)). Indeed there has been a considerable effort to implement structural reforms following the recent financial (and sovereign) crisis (for a summary of reforms implemented between 2010 and 2012 in Southern European countries see Table 2 in Barkbu, Rahman and Valdés (2012)).
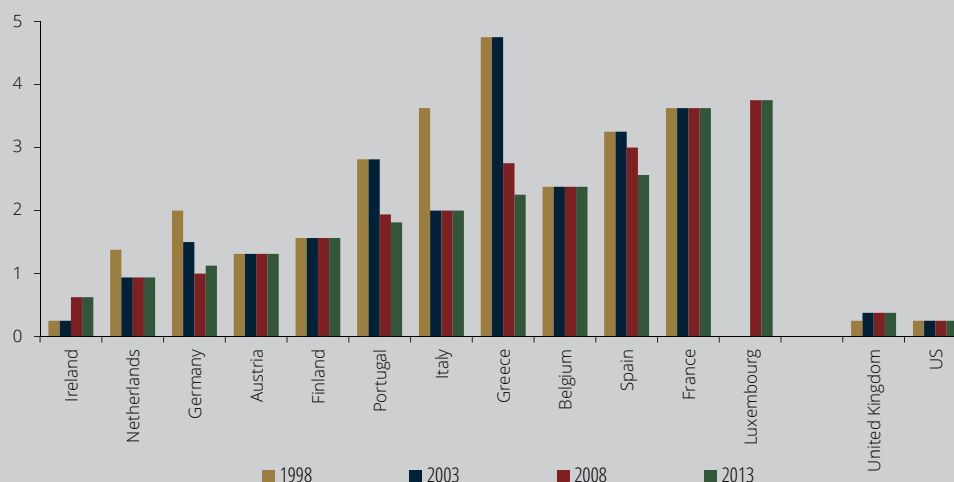
Chart 5 •
Strictness of employment protection – individual and collective dismissals (regular contracts)

Source: OECD.

Note: The indicator ranges from 0 (least restrictions) to 6 (most restrictions).

Chart 6 •
Strictness of employmnet protection – temporary employment

Source: OECD.

Note: The indicator ranges from 0 (least restrictions) to 6 (most restrictions).

The macroeconomic impact of structural reforms

In this section we review the evidence about the potential macroeconomic impact of structural reforms. To do so, we need to evaluate what is the effect of changing specific structural features of certain sectors of an economy, in particular changes in the degree of competition in the services and labour market. Then we need to understand how these changes transmit to the rest of the economy and how this depends on other structural characteristics of an economy. As such we have to resort to the evidence provided by structural models in general equilibrium, because partial equilibrium analysis does not allow drawing conclusions about aggregate macroeconomic effects. Thus, in this section we mostly review the results in the literature that relies on the so-called dynamic general equilibrium models.[7] Examples of these models that are used in policy and international institutions are the IMF's Global Economy Model (GEM) and Global Integrated Monetary and Fiscal Model (GIMF), the European Commission's QUEST model, the New Area Wide Model (NAWM) developed at the European Central Bank (ECB) and the Euro Area Global Economy Model (EAGLE) developed by a team of experts of the European System of Central Banks (ESCB).[8]

There is an extensive literature examining the benefits of reforms that increase price and wage setting competition in terms of key macroeconomic variables by relying in structural models with a monopolistic competitive setting both in product and labour markets. In this type of setting, there is a variety of products / types of labour which are not perfect substitutes. As a result, firms / households have some degree of market power that allows them to extract a rent in excess to what it would receive in perfectly competitive markets, *i.e.* they charge a markup over that, and restrict production / labour supplied compared to the perfectly competitive setting. Structural reforms are often framed in terms of an increase in competition in several markets, for example by reducing entry barriers. These studies thus analyse the impact of structural reforms by simulating reductions in price and wage markups (which in these models are inversely related to the elasticity of demand).[9] Although the way these reforms are implemented is quite stylized, they give us a structured framework to think about them. In the following we will highlight the main results that emerge from these studies.

The findings in the literature based on structural models typically support the idea of long-run benefits of reforms for the reforming countries, namely in the form of a higher level of GDP and employment. To illustrate the magnitude of the long run macroeconomic effects of structural reforms in the services and labour markets, we will mainly focus on the findings of Gomes, Jacquinot, Mohr and Pisani (2011, 2013).

Gomes *et al.* (2011, 2013) simulate competition-enhancing reforms in both the services and the labour markets in the EAGLE model. This is a model of the euro area within the global economy, where there are two blocs within the monetary union. In the model, the euro area is split into Germany and the rest of the euro area or alternatively to a smaller euro area economy, namely Portugal within the union. These two economies also differ in terms of the trade exposure *vis-à-vis* the rest of the euro area and the other blocs in the model (namely the US and rest of the world). We will mostly focus on the results for Germany but also report those for Portugal.

In line with what was described above, the EAGLE model relies on the monopolistic competitive setting in the services and the labour markets. Thus, these reforms are modelled as permanent changes in the markups in these markets. Before the structural reforms, markups in the euro area services and labour markets are higher than the corresponding values in the US and the markup

in the services sector is higher than that in the labour market.[10] Thus, in the euro area the degree of competition is particularly low in the services sector. In the simulations, markups are reduced gradually over a 5-year period by 15 p.p., to a permanently lower value. This change takes the degree of competition in the reforming economy close to that in the US.

A change of 15 p.p. of the markups in the German services market results in an increase of German GDP in the long run of 4.4 per cent (see Table 1). When the model is calibrated to Portugal, the same type of reform implies a 3.6 per cent increase in GDP in the long-run. The reduction in price markups in the services market leads to an expansion of supply of services. Consequently, firms then increase for inputs used in production, namely labour and capital. As such, hours worked and real wage and investment increase (see Table 1). Higher consumption is favoured by higher real wages and lower prices. Increased supply of services in the reforming country induces a depreciation of the multilateral real exchange rate and a deterioration of the multilateral terms of trade. Spillovers to the rest of the euro area (not shown in Table 1) are positive but small which is not surprising, given that services are nontradables and that the size of Germany in the world economy is relatively small. This is even more important for the case of Portugal. The simulations for Portugal also show the same kind of movement in relative prices, *i.e.* Portuguese terms of trade deteriorate and real exchange rate depreciates, though by a smaller extent. Thus exports increase by less than in Germany while imports increase by more. In the case of Portugal the exchange rate depreciation has a larger impact on households' consumption, because the latter is more biased toward imported goods. As such, consumption in Portugal increases to a lower extent than in the case of Germany.

Table 1 • Long-run macroeconomic impact in the reforming country

	Germany				Portugal			
	Services	Labour	Services and Labour	Euro area wide	Services	Labour	Services and Labour	Euro area wide
Real GDP	4.39	4.27	8.83	9.19	3.62	4.02	7.77	8.59
Consumption	1.76	3.74	5.56	6.28	1.47	3.52	5.04	6.39
Investment	7.14	3.55	10.92	11.87	4.81	2.79	7.71	9.97
Hours worked	3.07	4.63	7.83	7.91	2.55	4.59	7.26	7.40
Real wage	7.47	−0.79	6.60	7.25	6.20	-0.99	5.12	6.32
Exports	1.08	3.85	4.97	5.65	0.86	3.84	4.73	5.71
Imports	0.56	2.18	2.74	4.63	1.01	2.25	3.28	6.06
Real exchange rate	6.70	1.06	7.81	4.43	5.87	1.03	6.95	1.80
Terms of trade	0.45	1.60	2.06	1.02	0.35	1.52	1.87	0.26

Source: Gomes *et al.* (2011).

Note: The real exchange rate of a region is defined as the ratio of the foreign to the domestic CPI indices, both expressed in the domestic currency. An increase represents a depreciation. The terms of trade of a region is the ratio of import to export prices, both expressed in domestic currency. An increase corresponds to a deterioration.

The same type of reforms in the labour market implies an increase of German long-run output of 4.3 per cent (see Table 1) (4.0 per cent in Portugal). There is an increase in the labour supply which pushes down the real wage. Thus, in contrast to the services market reform of similar size, real wages decrease. Firms have a greater incentive to use labour which is now cheaper, and conse-

quently employment increases. The lower wage implies a decline in production costs to the whole economy, *i.e.* both in services and in goods markets, and favour a decline in prices thus inducing a gain in competitiveness. As such exports increase. German terms of trade deteriorate and the real exchange depreciates (though less than in the services market reform because the relative price of services which is a large share of the consumption bundle decreases to a lower extent). The increase in domestic demand, in particular consumption, together with lower real exchange rate implies an increase in imports as well.

These results are in line with other contributions in the literature that look at other euro area countries. Everaert and Schulle (2008) using the GEM find positive impact from product and labour market reforms in several macroeconomic variables when the reforming countries are either France or Belgium; Forni, Gerali and Pisani (2009), in a two-country euro area model, and Lusinyan and Muir (2013), with the GIMF model, show sizeable gains from product and labour market reforms in Italy. Similar results are documented for Greece in Maliszewski (2013) and for Portugal in Almeida, Castro and Félix (2010).

Most of these papers also show that cross-country coordination of reforms produce larger and more evenly distributed positive results from structural reforms. Results in Gomes *et al.* (2011, 2013) show an expansion of activity in each euro area region by more than 9 percent in the case of a simultaneous reduction of markups by 15 p.p. in services and labour markets (see Table 1).[11] When reforms are coordinated in the euro area, German multilateral international relative prices deteriorate to a lower extent than in the case of unilateral reforms because Germany benefits from cheaper imports as aggregate supply in the rest of the euro area increases.

While there is broad consensus that structural reforms bring benefits in the long run, the impact in the short-run the impact may be small or even negative. In fact, the full impact of these reforms only materializes over time and the actual implementation may also take time. Permanent reforms imply a permanent increase in output and thus a wealth effect that stimulates domestic demand also in the short run. However, these reforms may also imply deflationary pressures, namely in the case of (non-tradable) goods market reforms, leading to an increase in real interest rates offsets the wealth effect. The short run impact depends on the relative strength of these different effects. As argued by Andrés, Arce and Thomas (2014), in the presence of credit restrictions and long-term debt, structural reforms in the product and labour markets carried out in times of amid a deleveraging process may stimulate output and employment even in the short run, despite their deflationary effects. Product market reforms bring forward the end of deleveraging and the exit from recession by favouring a faster recovery of investment and collateral values. Also, the short run impact of reforms is also dependent on the specific design characteristics of the implemented reforms (see Gomes (2014)) and on the possibility of monetary authority to react as will be explained below.

Another idea that is well established in this literature is that coordinating reforms across sectors would not only imply greater long-run gains but could also reduce transitional costs and as such the implementation of a broad package of reforms, of course suited to the specific situation of each country, seems preferable to implementing isolated reforms in certain markets (for the macroeconomic impact of reforms coordinated in the services and labour markets see Table 1).[12] The important synergies from implementing product and labour market reforms simultaneously were highlighted by Blanchard and Giavazzi (2003) and confirmed by several other papers afterwards (see, for example, Forni, Gerali and Pisani (2009) or Gomes *et al.* (2013)). Service market deregulation, which increases the real wage, should precede labour market, as it mitigated the impact of lower real wages that are the result of the latter reforms.[13] In fact, taking once more the

results in Gomes *et al.* (2013), if services and labour market reforms are implemented simultaneously, real wages increase. The increase in labour demand more than counterbalances the increase in labour supply. The former is associated with the reform in services sector while the latter is associated with the reform in the labour market.

A large part of the models used in the papers cited above rely on a relatively stylized framework for the labour market, that only includes hours worked and can say nothing about unemployment, participation rate among other variables related to this market. There are a few contributions that rely on models with more intricate labour market blocs. The models in these papers introduce a different friction in the labour market, usually called search and matching, where usually firms and workers need to engage in costly search to find each other to fill a vacancy for a job. After matching, the worker and the firm engage in bilateral bargaining over the wage. The way reforms are modelled and transmitted to the rest of the economy is thus different. Still, in general these papers provide evidence of a beneficial impact of structural reforms, that include not only a strengthening of competition captured by a reduction in markups but also other measures like lowering hiring costs, facilitating workers re-entry in the labour market, encouraging job search, matching, and mobility, and reducing unemployment in the long-run (see IMF (2010) and Hozba and Moure (2010)).

The literature overviewed provides evidence of an increase in the level of GDP in the long-run in reforming countries. This implies that the economy will eventually grow towards a new equilibrium with a higher level of output. However, the possible link between the increase in competition and an economy's growth potential is generally not modelled. In fact, in most of the structural models used long-run growth is exogenously fixed instead of being dependent of other structural characteristics of an economy.[14]

Structural reforms and monetary policy

The supply capacity of an economy is determined by its structural characteristics. As such, monetary policy is not a substitute for structural reforms. Still, by ensuring price stability, a monetary authority is contributing to the well functioning of an economy and thus will be conducive to the smooth implementation of these reforms and the attainment of the maximum achievable (long-run) output. As long as price stability is not at stake, in the shorter-run supportive monetary policy may offset short-term headwinds from the implementation of structural reforms.

Another issue related to the interplay between monetary policy and structural reforms is that of the so-called zero lower bound on nominal interest rates. In the case interest rates reach their lower level (which may be zero or close to zero) the possibility of monetary policy accommodation is lost. On the other hand, if it is the case that structural reforms stimulate an economy and/or induce an increase in inflation, it may also happen that interest rates remain unchanged instead of raised, in this case contributing to enhance the impact of reforms.

The possibility of supply-side structural reforms help in addressing the problem at the heart of the zero lower bound, *i.e.* low demand, is well explained in a paper by Fernández-Villaverde, Guerrón-Quintana and Rubio-Ramírez (2011). The authors use a simple 2-period structural model to explain that a reduction of markups in the future generates a wealth effect that increases the desire to consume today and decreases the desire to save. This stimulates current demand. Since interest rates are at the zero lower bound, this wealth effect is not offset by monetary policy, which would have been the case in normal times, *i.e.* outside the zero lower bound.

Eggertsson, Ferrero and Raffo (2014) based on a structural model with two equally-sized countries argue that unexpected structural reforms that reduce product and labour market markups can

have short-run contractionary effects if implemented during a crisis when the zero lower bound binds because reforms have a deflationary impact that results in higher real interest rates that depress demand. Unlike Fernández-Villaverde, Guerrón-Quintana and Rubio-Ramírez (2011) they focus on an immediate reduction in markups, which seem highly unlikely as the implementation of structural reforms takes time. The short-run impact the authors find is short-lived and not very large. Gomes (2014) results show that structural reforms at the zero lower bound may have positive short run effects that are crucially dependent on the design of such reforms, namely if the reforms are implemented gradually or not and if the reforms are announced (or perceived) as temporary or permanent. In fact, the macroeconomic impact of structural reforms depend on the relative strength of the income effect associated with permanent changes in output as well as an intertemporal substitution effect whose relevance in turn is also associated with the possibility of reaction by the monetary authority.

Final remarks

Structural reforms have long been in the policy agenda. The financial crisis made the need for reforms even more urgent and since then several countries have tried to move forward. The result of these reforms is yet to be seen. Still, model based evidence show that the impact may be sizeably positive but gains accrue only gradually. The evidence surveyed that is based on structural models necessarily faces several caveats. Though allowing us to quantify the macroeconomic impact of these reforms, one should bear in mind that the results based on these models are dependent on the specific modelling choices and on the calibration of structural parameters. As all models, they are simplifications of how actual economies work and they are built to match just some of the characteristics of an economy. Thus this quantification of results is only indicative. Still, by being fully structural these models are extremely helpful to understand the mechanisms underlying the transmission of these reforms in an economy.

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Notes

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3. If one considers the 1980-2007 period, to exclude the financial crisis period from the sample, the euro area recorded an average growth of 2.2 per cent compared with 3.0 per cent in the US.

4. Mourre (2009) considers the euro area with 12 Member-States.

5. Structural reforms may also include reforms to the public finances or the financial sector. These are however out of the scope of this article.

6. The PMR indicators are an overall measure of the institutional restrictions placed on companies in terms of setting prices or their ability to freely determine their strategy. They range from 0 to 6, with a higher value indicating stricter regulations. The EPL indicators are synthetic indicators of the strictness of regulation on dismissals and the use of temporary contracts. They range from 0 (least restrictions) to 6 (most restrictions).

7. These studies in general do not consider the budgetary costs of these reforms, as they are hard to quantify.

8. For a detailed description of the theoretical framework of the GEM see Bayoumi (2004), Laxton (2008) or Pesenti (2008); of the GIMF model, see Laxton, Mursula, Kumhof and Muir (2010); of the QUEST model see Ratto, Roeger and in't Veld (2008); of the NAWM, see Coenen *et al.* (2008a, 2008b); and of the EAGLE model see Gomes, Jacquinot and Pisani (2012).

9. Estimates of these markups in general find higher markups, thus a lower degree of competition in services markets compared to manufacturing (which is more exposed to international competition) as well as in labour markets. The estimates present a considerable heterogeneity across countries.

10. Specifically, the (net) markup in Germany and the rest of the euro area is set to 50, 30, 20 per cent in the services, labour and manufacturing sectors, respectively. In the US the corresponding markups are set to 28, 16 and 20 per cent. These values are in line with those used in other existing studies (see for example Bayoumi, Laxton and Pesenti (2004) and Everaert and Schule (2008)) and empirical evidence (see Jean and Nicoletti (2002), Oliveira Martins, Scarpetta and Pilat (1996) and Oliveira Martins and Scarpetta (1999)).

11. See also for example Everaert and Schulle (2008) or Forni, Gerali and Pisani (2009).

12. Note however that these models generally do not include an explicit interaction between the levels of competition in different markets.

13. Measures to stimulate aggregate demand may also be useful to offset short-term costs of supply-side reforms. However, several European countries may not have the necessary fiscal room for maneuver.

14. Using the European Commission QUEST model with semi-endogenous growth, Varga, Roeger and in't Veld (2013) provide evidence of significant long-run economic gains of competition enhancing structural reforms Southern European countries (Italy, Spain, Portugal and Greece). In this model used, R&D generates endogenous productivity growth by creating new varieties of products.