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Is the Greek Crisis One of Supply or Demand?

ABSTRACT Greece's "supply" problems have been present since its accession to the European Union in 1981; the "demand" problems caused by austerity and wage cuts have compounded the structural problems. This paper discusses the severity of the demand contraction, examines product market reforms, many of which have not been implemented, and their potential impact on competitiveness and the economy, and labor market reforms, many of which have been implemented but due to their timing have contributed to the collapse of demand. The paper argues in favor of eurozone-wide policies that would help Greece recover and of linking reforms with debt relief.

Greece joined the European Union (EU) in 1981 largely on political grounds to protect democracy after the malfunctioning political regimes that followed the civil war in 1949 and the disastrous military dictatorship of the years 1967–74. Not much attention was paid to the economy and its ability to withstand competition from economically more advanced European nations. A similar blind eye was turned to the economy when the country applied for membership in the euro area in 1999, becoming a full member in 2001.

It is now blatantly obvious that the country was not in a position to compete and prosper in the European Union's single market or in the euro area. A myriad of restrictions on free trade had been introduced piecemeal after 1949, with the pretext of protecting those who fought for democracy. These restrictions do not allow Greek companies to develop, adopt new technology, and grow into world-leading exporters—with the exception of shipping, which is subject to different rules because of its international nature. Professions are protected, and there is political interference with the

economy from the basic level all the way to the top, through state-controlled enterprises, rules and regulations that have accumulated over the years, and party-political appointments of officials who control licensing offices down to the local level. As a result, Greece is the most protected and monopoly-ridden economy in the euro area, and no attempt was ever made to reform the economy to raise its productivity to the level of its European partners.

These features of the economy should have been obvious to those examining the Greek case for entry into the European Union and the euro area. Whether they were obvious or not, however, is immaterial at the current juncture: The key point today is that they were ignored until the debt crisis of 2010. Entry into the EU kept Greece going through transfers, and entry into the euro area gave the country access to cheap finance, which provided funds for consumption and residential investment. This growth model was clearly unsustainable, but that fact was not exposed until after the onset of the global financial crisis and highlighted in a series of reports by international organizations, most of them associated with the troika's periodic reviews.¹

It is clear that for the long-run viability of Greece's economy and survival in the eurozone the urgent need is for structural reform. But implementing deep and effective structural reform in an economy used to protectionism and political meddling meets with resistance at every level, leading to public protest, political instability, frequent elections, and the rise of political extremism. So, although since the onset of the crisis in 2010 several rounds of legislation went successfully through Parliament, the implementation of reform has been very poor. In practice there is no such thing as an independent public sector that will implement the reforms impartially according to any new legislation. In private conversations, economists brought in to advise the government on reform acknowledge that once they are in office, huge pressures are brought to bear on them to make exceptions that offset the impact of legislation to the point of complete irrelevance.²

The problem that should be occupying Greece's lenders is how to give incentives to achieve effective structural reform. Instead, their focus has

1. The *troika* refers to the European Central Bank, the European Commission, and the International Monetary Fund, which jointly administered the Economic Adjustment Programme for Greece (European Commission 2010). They have issued periodic reports, the latest of which is the European Commission's fourth review (European Commission 2014) and the International Monetary Fund's fifth review (IMF 2014). The European Commission's fifth review was interrupted in December 2014. See Hardouvelis (2015).

2. This is common knowledge in Greece. Most recently it was reiterated to us by Gikas Hardouvelis, who served as finance minister before the Syriza election victory in January 2015.

been on fiscal austerity, ever higher taxation, cuts in earnings, and debt sustainability, which has provided disincentives for reform. Reform is politically easier to implement and economically more effective when demand in the economy is at a healthy level, demand in the country's trading partners is expanding, the country's financial sector is in a position to support new ventures, and its fiscal authorities are in a position to help with infrastructure investments and private-public partnerships. All of these conditions characterized Germany when it embarked on its reform program in 2003–05, which was controversial at the time and included running a bigger budget deficit than allowed by the Maastricht Treaty in order to facilitate the transition to a new economic order. But these conditions have been denied to Greece, reinforcing its reluctance to implement reform and rendering ineffective the small number of successful reforms that have taken place, such as Enterprise Greece, which enables the speedy establishment of new companies for which currently there is no demand.

Our message is that ignoring Greece's problems when it first applied for membership in the single market and the euro area was a mistake and that the fiscal austerity and wage cuts that international lenders enforced upon Greece were also a mistake, one that has compounded the first mistake, because they stunt the necessary structural reform efforts. The distorted structure of the Greek economy, especially its concentration of economic activity in a small number of hands, introduces price inflexibilities, so the fiscal austerity and wage cuts have caused a catastrophic fall in demand. Such features are behind the International Monetary Fund's (IMF's) underestimation of the fiscal multipliers; the fall in demand is behind the deep recession and the rise in unemployment. It is also partly behind the failure of the 2012 sovereign debt restructuring to deal once and for all with the Greek debt.³ However, the high debt is a *consequence*, rather than a *cause*, of the current situation. Although more debt relief now would enable Greece to implement reforms with more flexibility because it would somewhat relax the austerity, we believe that even a complete write-off would not transform Greece into a modern growing economy that could prosper in the euro area.

Greece's problem is one of both supply and demand. The supply problems have been present since the country's acceptance into the EU in 1981; the demand problems caused by austerity and wage cuts have added to the supply problems, making them worse.

3. See Zettelmeyer, Trebesch, and Gulati (2013) for the full details of the 2012 restructuring, which is also known as the 2012 PSI (private sector involvement).

The remainder of this paper is organized as follows. In section I we discuss the severity of the demand contraction and its impact on economic activity, which, as we argue, is largely due to Greece's distorted economy. In section II we discuss product market reforms and their potential impact on competitiveness and the economy. In section III we turn to labor market reforms, many of which have been implemented, and discuss their impact. In section IV we argue in favor of eurozone-wide policies that would help propel Greece on the road to recovery. We also discuss how linking reforms with debt relief could increase the motivation for reform. Section V concludes.

I. Demand Contraction

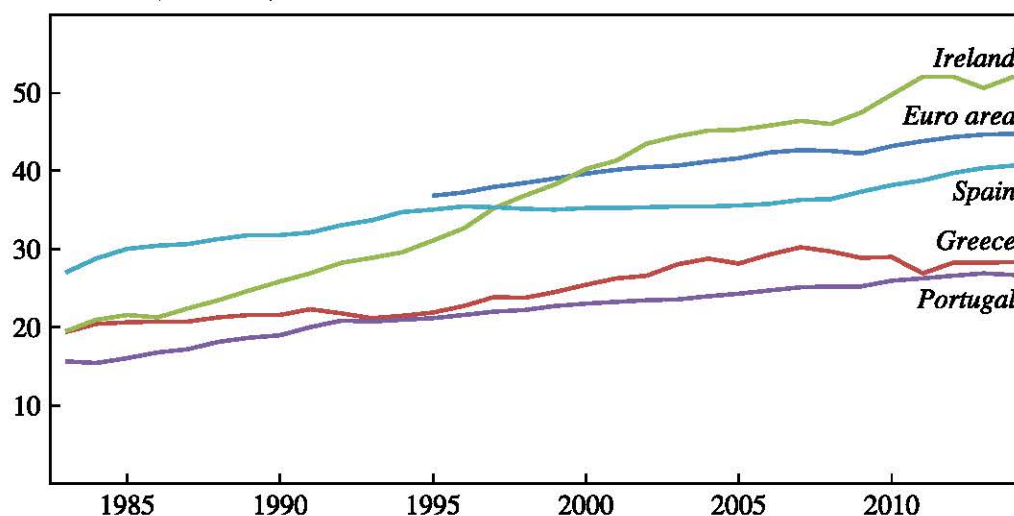
The main ingredients of the reform program forced upon Greece by its international lenders, as well as the thinking behind them, consists of three pillars: fiscal contraction to reduce the massive budget deficit and eventually pay off the debt; reductions in wages, pensions, and other costs to increase the competitiveness of Greek industry; and a structural reform program to modernize the economy and increase productivity.⁴ The expectation of the institutional lenders was that the fiscal contraction would have very small negative multipliers, the "internal depreciation" that would result from reductions in unit labor costs would increase exports and also help domestic demand, and the structural reform would increase productivity and improve expectations about future prospects, giving access to more and cheaper finance for investment and output growth. In practice, fiscal austerity led to bigger negative multipliers than estimated by the IMF (as acknowledged in IMF 2013) and a bigger fall in output than expected. The internal depreciation helped exports to some extent, but the wage reductions that brought it about, combined with sticky prices, brought much bigger reductions in domestic demand (Pissarides 2013). And structural reform has been ineffective either because of its limited scale or because several of its dimensions have not been implemented.

Greece's large trade deficit has declined since the onset of the crisis, from 11.2 percent of GDP in 2009 to 2.3 percent in 2014. This was partly

4. An antiquated pension system was at the root of the fiscal explosion, requiring ever increasing contributions by the government. An ambitious reform effort, which recognized the adverse demographic trends and was initiated in 2001, was not completed. The 2010 Economic Adjustment Programme mandated extensive pension reforms. Such reforms continue to be key thorny issues in the negotiations by Greece with its lenders as of the time of writing.

Figure 1. Hourly Productivity, Euro Area, Greece, Ireland, Portugal, and Spain, 1983–2014

U.S. dollars (2005 PPP)

Source: OECD (<http://www.oecd-ilibrary.org/statistics>).

due to the absolute fall in imports (although they increased as a share of GDP), but also to an increase in exports from 19 to 33 percent of GDP (with exports of goods increasing from 8.4 to 17.3 percent of GDP). Hourly productivity declined during this period, in contrast to the rest of the euro area, but real average earnings fell by even more (figure 1 and table 1). As a consequence, real unit labor costs fell, improving the competitiveness of Greek exports despite the falling productivity.

Both the fall in wage costs and the fall in productivity were due to the collapse of aggregate demand and investment. Whereas fixed capital formation in the euro area in 2014 was at about 19 percent of GDP, only slightly below the precrisis levels, in Greece it collapsed from more than 20 percent in the precrisis years to 16.3 percent in 2009 and to 8 percent in 2014, with residential construction accounting for a large portion of the collapse.

According to the Organization for Economic Cooperation and Development's (OECD's) 2013 economic survey of Greece (OECD 2013, p. 53), the adjustment program has so far failed to restore price competitiveness, growth, and public debt sustainability, and the fiscal contraction has deepened the depression. There is no doubt that the troika has made errors in policy design. The fiscal multiplier assumed in the design of the program was much smaller than might have been at work, with a value of 0.5 instead of some value above 1, which is more widely used now. This would have

Table 1. Real Average Earnings, Greece, Ireland, Italy, Portugal, and Spain, 2009–14^a

<i>Year</i>	<i>Greece</i>	<i>Spain</i>	<i>Ireland</i>	<i>Italy</i>	<i>Portugal</i>
2009	100	100	100	100	100
2010	93	98	99	101	100
2011	88	96	98	99	97
2012	85	93	97	96	93
2013	80	94	97	96	95
2014	81	93	99	97	93

Source: OECD (<http://www.oecd-ilibrary.org/statistics>).

a. Values indexed to 2009 = 100.

had a large impact on the estimated contraction, with everything else constant.⁵ Of more importance, however, are the peculiarities of the Greek economy, which had largely been overlooked. The Greek economy is subject to more frictions and is less open than other euro area economies in crisis, such as Ireland and Portugal.⁶ In such an economy, prices do not fall, and the decrease in aggregate demand brought about by wage decreases translates into a contraction of aggregate activity and unemployment (Pissarides 2013). Wage reductions in Greece were reflected in greater increases in profit margins rather than reductions in prices.

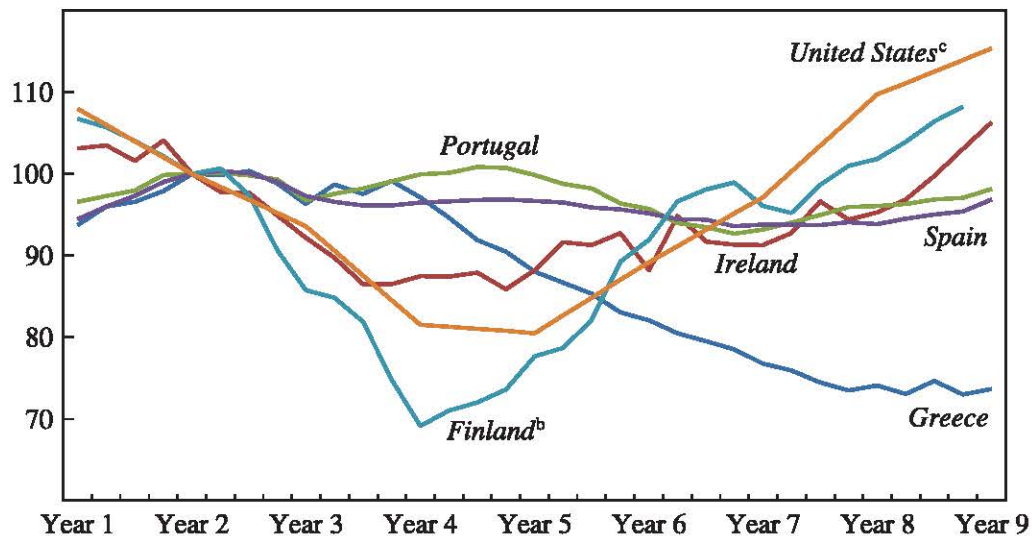
As a result of the demand contraction and the large multipliers, output declined in Greece dramatically more than in other countries under stabilization programs (figures 2 and 3). In early 2013, GDP was 25 percent below its 2008 level, in sharp contrast to the drop of 10 percent or less in the other countries. Figure 2 also compares Greece with Finland during

5. There are two different positions taken by IMF staff. Bi, Qu, and Roaf (2013, p. 26) argue that projections would not have been very different if higher multipliers had been assumed. Instead, they claim that the error was in the forecast of potential GDP, which anticipated a contraction of about 7 percent instead of the observed 20 percent. Olivier Blanchard attributes the underestimation to substantial evidence that turned out to be misleading in an environment of near-zero interest rates and monetary policy that cannot offset the effects of the fiscal stance (IMF 2015a). IMF (2010, p. 93) examines in depth the different aspects of macroeconomic effects of fiscal consolidation, finding that “fiscal consolidation typically reduces output and raises unemployment in the short term.” The process is the more painful the less monetary stimulation is available and the greater the reliance on taxes, and both of those conditions have been features of the Greek stabilization.

6. Average total exports (goods and services) as a percent of GDP were as follows for 2008–12: Greece, 23.4; Ireland, 93.1; and Portugal, 33.2. Greece’s intra-EU exports and imports, as shares of respective totals, are the lowest among comparably sized EU countries. The share of intra-industry trade is probably not very large, thus the greater the need for adjustment through the exchange rate and the smaller the productivity-like potential benefit from “task trading” (Grossman and Rossi-Hansberg 2008).

Figure 2. Real GDP, Greece, Ireland, Portugal, and Spain, 2007–15, and during Depressions in Finland and the United States

Indexed real GDP^a



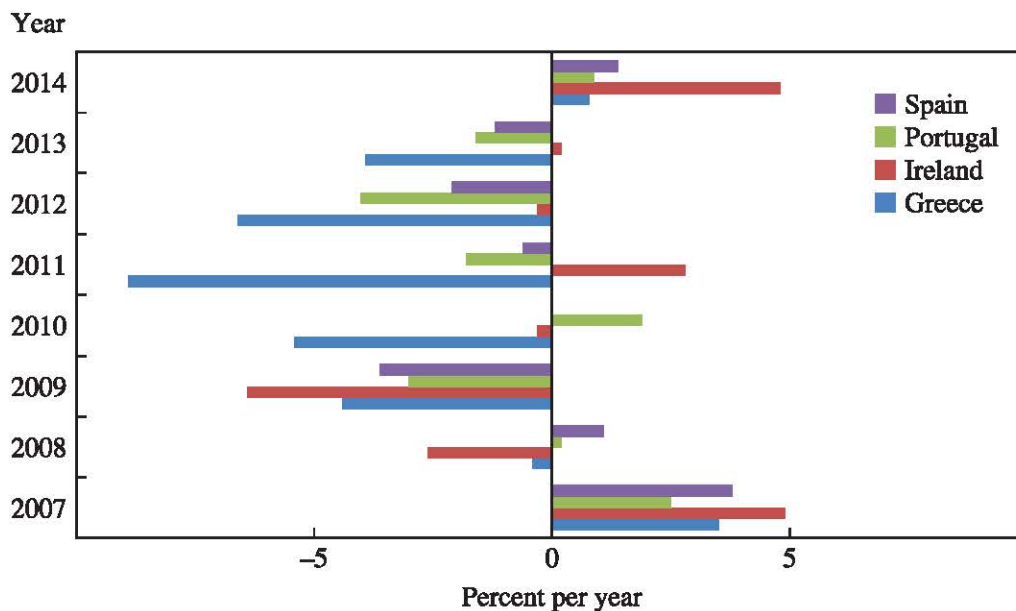
Sources: Eurostat (<http://ec.europa.eu/eurostat/data/database>), U.S. Bureau of Economic Analysis.

a. For Greece, Ireland, Portugal, and Spain, Year 1 = 2007 and data are indexed to 2008 = 100; for Finland, year 1 = 1990 and data are indexed to 1991 = 100; for the United States, year 1 = 1929, and data are indexed to 1930 = 100.

b. Depression in Finland spanned 1990–97; data plotted quarterly are 1990Q1–1997Q4.

c. Depression in the United States spanned 1929–38; data plotted annually are 1929–37.

Figure 3. Real GDP Growth Rate, Greece, Ireland, Portugal and Spain, 2007–14



Source: Eurostat (<http://ec.europa.eu/eurostat/data/database>).

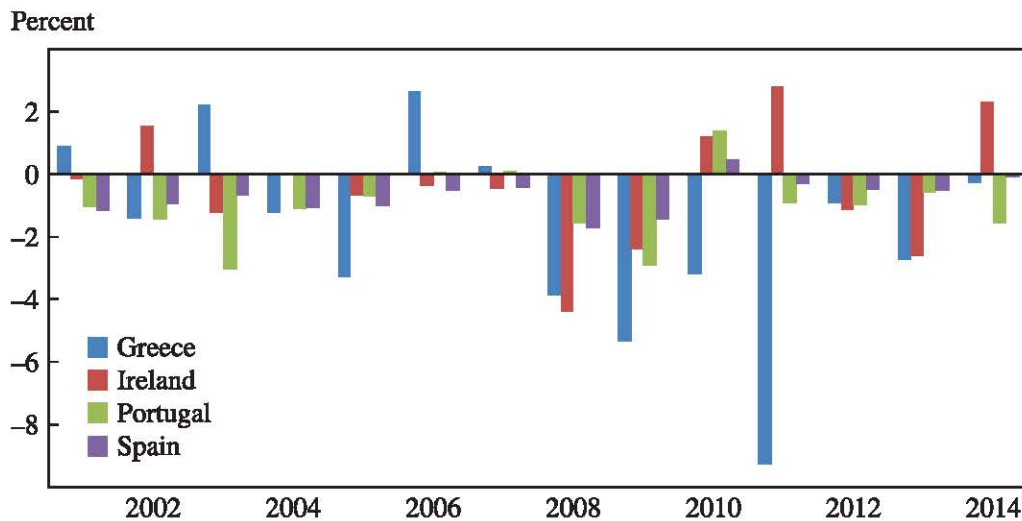
its “great depression” of 1990–96 and the United States during the Great Depression of 1929–38.

Even more striking is Greece’s performance in relation to other European countries. Between 2009 and 2012, Greek income per capita fell from 96 to 75 percent of the EU average, below its level in 1995. Between 2010 and 2012, annual real income contraction in Greece was almost 3 percentage points deeper than in the OECD and troika forecasts, while nominal GDP contraction was 3.5 percentage points deeper. Relative to the 3.8 percent trend growth rate in the period 1997–2007, the fall of GDP in 2007–13 was 38 percent (Müller, Storesletten, and Zilibotti 2015). Much of the gain made since Greece’s eurozone accession has been lost. From 2009 to 2014, real GDP per person declined by 21 percent; relative to the EU-28 average, it declined from 93 percent in 2003 to 70 percent in 2014.

II. Structural Reforms and Competitiveness

Given the sticky prices and barriers to entry, instead of reversing the recession, the fall in wages has so far contributed to it by reducing aggregate demand, as has the fall in unit labor costs by failing to spur competition. In such circumstances it makes much more sense to target product market reforms, which could improve price flexibility and the structural competitiveness of the Greek economy. Labor market reforms are also essential, but they could come later, once the economy was performing well, since they would be easier to implement. Labor market reforms are resisted by workers and their unions and they can be disruptive, both politically and economically. Product market reforms are resisted by the professions and by owners of capital, who ultimately are more likely to comply if sufficient compensation to the losers is given.

The issue of the urgent need for structural reforms has figured prominently in all discussions of the Greek crisis. Product market deregulation can affect growth in two important senses that are not typically clarified in public debates. One effect is from abolishing monopolistic and monopsonistic structures and eliminating barriers to entry, which would benefit productivity. A second effect is from market deregulation’s impact on total factor productivity (TFP) growth. Boosting TFP growth is essential if Greece is to recover and catch up with other European countries, but since the country’s entry into the reform program, TFP growth has declined in Greece by much more than in other program countries (figure 4). The fundamentals are against the revival of TFP growth, mainly because of too little spending on education and on research and development, as well

Figure 4. Total Factor Productivity, Greece, Ireland, Portugal, and Spain, 2001–14

Source: The Conference Board.

as poor connections between universities and industry (Pissarides 2015). Greece's spending on research and development increased slightly between 2002 and 2013, from 0.6 percent to 0.8 percent of GDP, but these numbers are well below the figures for the average of the euro area during the same period, rising from 1.8 to 2.0 percent.

The first channel through which deregulation can affect growth has served as a key objective of deregulation efforts that break barriers to competition, and it has been an important part of the reform programs in the European Union. Its main impact is a jump in potential output, moving the country closer to the technological frontier. The second channel is an important component of the EU's Europe 2020 growth strategy, which includes a Digital Agenda for Europe. The impact of this reform is mainly on growth through the beneficial effect of structural reform on research and development and on trade competitiveness, and is thus vastly more important because it is long lasting.

The importance of structural reforms is enhanced in the presence of downward nominal wage rigidities, fixed exchange rates, and high debt levels, which all characterize the members of the euro area. For this reason, they have been repeatedly emphasized during the European crisis by politicians and leading figures in European institutions. Notably, as Mario Draghi (2015), president of the European Central Bank (ECB), eloquently argues, slow-adjusting countries within the eurozone are likely to suffer higher unemployment, which can become entrenched and structural, whereas

structural reform can bring the European economies closer together and thus improve the chances of success of a uniform monetary policy.

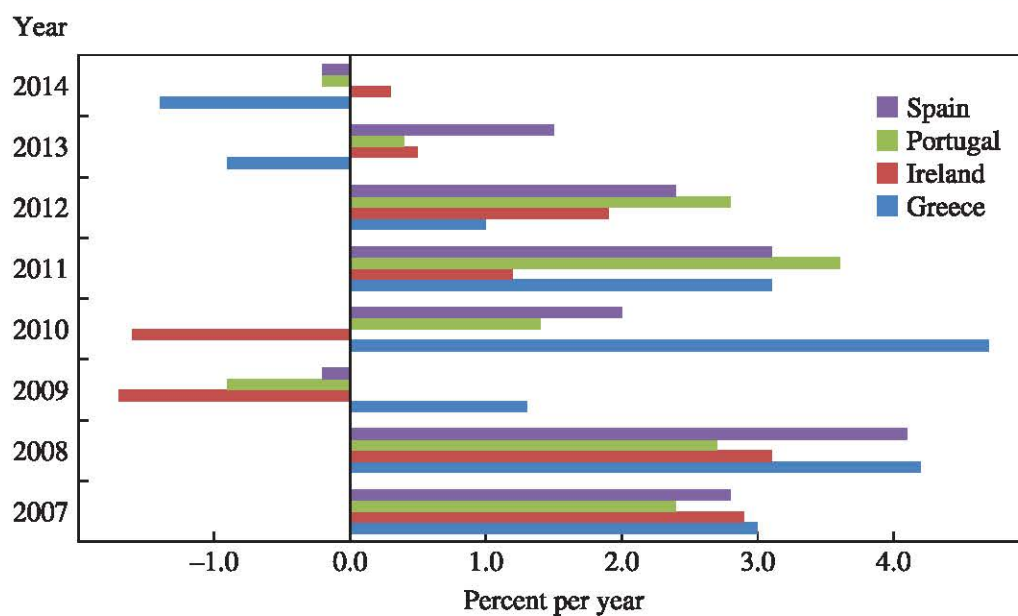
Writing in 2009, an IMF team identified many key weaknesses in the Greek economy (Moreno-Badía, Traa, and Velculescu 2009). They argued that the imputed equilibrium real exchange rate was overvalued relative to fundamentals and implied a competitiveness gap of 20 to 30 percent; that the weaknesses of Greek labor markets were glaring, with low employment rates, especially for females and the young; that relatively high employment protection legislation and structural impediments, including cumbersome business practices and high costs to start a business, hindered product market performance; and that internal competition was insufficient due to high regulation and limited liberalization of utilities, which implied higher energy costs and poorer supply chains for the whole economy.

Those observations motivated an important part of the Economic Adjustment Programme for Greece, which was agreed to in May 2010 (European Commission 2010). Drawing examples from other countries that had undergone reform, the IMF team, referred to above, concluded that were Greece to move toward best practices in each of those areas, the corresponding employment gains could be significant, estimated between 5 and 10 percentage points.

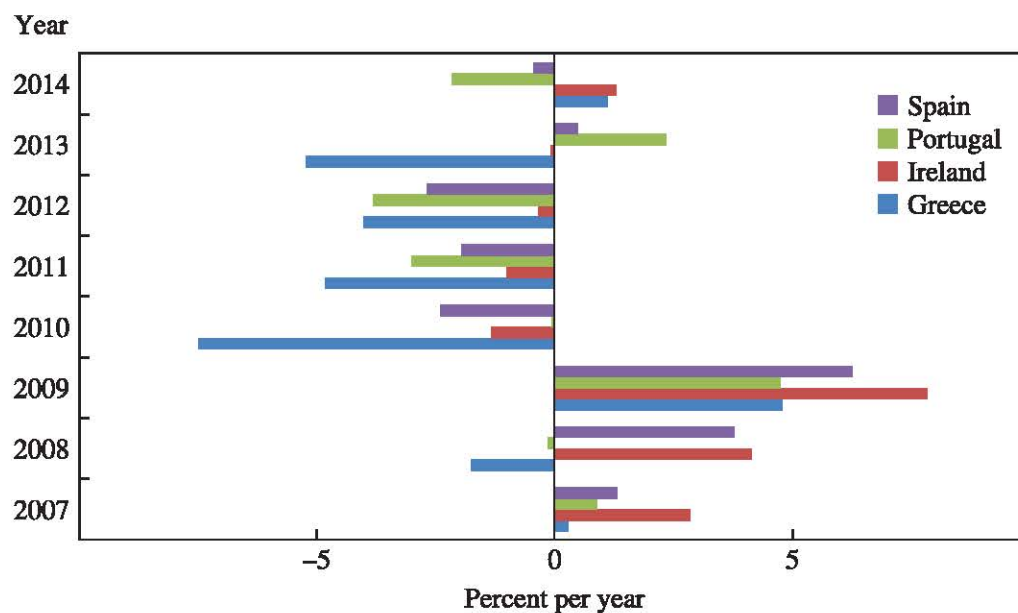
As the 2010 Economic Adjustment Programme gave way to a second program in 2012, the need for reforms was further specified and the troika's demands on Greece became more pressing. But product market reforms were not given priority and whatever interventions were implemented, they amounted only to partial dealing with some of the problems. Price inflation had increased from 1.3 percent in 2009 to 5 percent in 2010, before going down to –1 percent in 2013 (figure 5), while wage growth decreased sharply from 2009 to 2013 (figure 6). The net effect on the real wage has been dramatic, as table 1 and figure 7 show, with real wages falling by more than a quarter since 2007. The labor share fell from 56 percent in 2009 to 48 percent in 2013.⁷ At the same time, reformers had to tackle fierce opposition from vested interests and were hampered by a lack of political commitment. Product markets continue to be dominated by oligopolies, with numerous barriers to entry protecting incumbents.

As of the time of this writing, many of these conditions remain unsatisfied and are listed as part of the latest agreements as “prior actions” (European

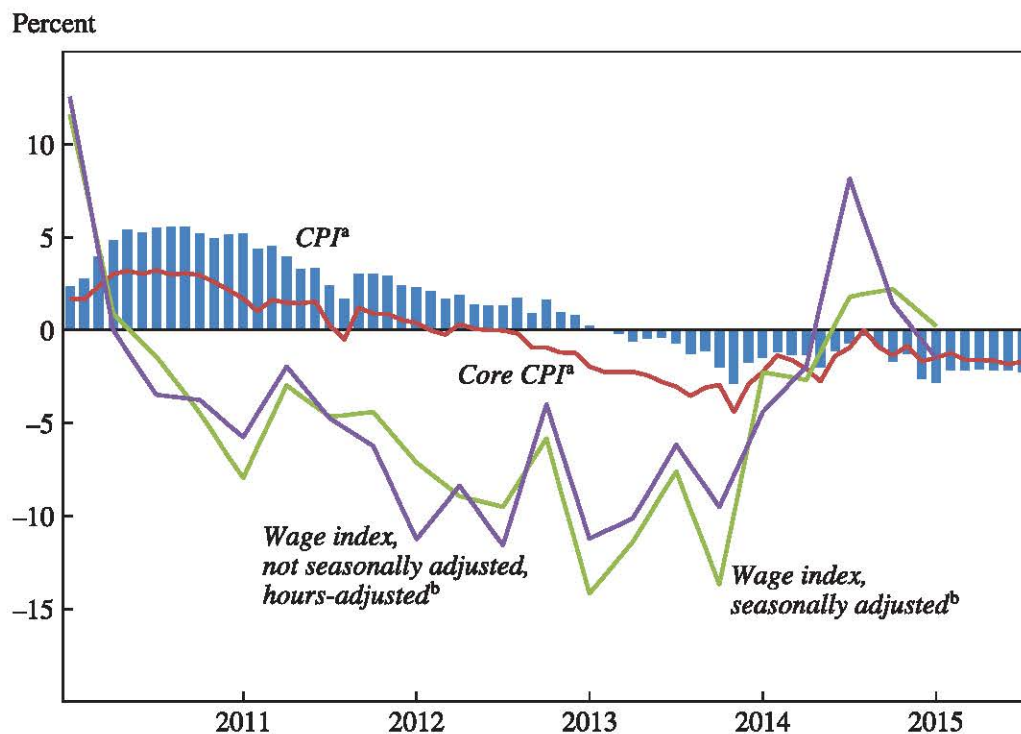
7. As reported in the 2015 AMECO Database (http://ec.europa.eu/economy_finance/db_indicators/ameco/index_en.htm).

Figure 5. Inflation HICP,^a Greece, Ireland, Portugal, and Spain, 2007–14

Source: Eurostat (<http://ec.europa.eu/eurostat/data/database>).
 a. Harmonized Index of Consumer Prices.

Figure 6. Wage Growth Rate, Greece, Ireland, Portugal, and Spain, 2007–14

Source: OECD (<http://www.oecd-ilibrary.org/statistics>).

Figure 7. CPI and Wage Trends, Year-over-Year, 2010–15

Source: ELSTAT (<http://www.statistics.gr/en/statistics/eco>).

a. Consumer price indexes are measured monthly.

b. Wage indexes are measured quarterly.

Commission 2015). A slow improvement did take place in the period leading up to the January 25, 2015, parliamentary elections. Some international indicators have improved, including Greece's ranking in the Global Competitiveness Index, from 96 in 2012 to 81 in 2014.⁸ Similarly, Greece improved in the World Bank's ease of doing business ranking, moving from 72 in 2014 to 61 in 2015,⁹ and in the OECD's Product Market Regulation Index it improved from 2.21 in 2008 to 1.74 in 2013.¹⁰ But such indexes are still a long way behind the levels that one would consider to be suitable for an economy on a convergence path with the rest of Europe.

Regulation remains high and is an obstacle to catching up with the rest of the euro area. Using the IMF's Global Integrated Monetary and Fiscal (GIMF) model, Stephanie Eble and others (2013) calculate that policies

8. See table 3 in Schwab (2012) and Schwab (2014).

9. See table 1.1 in World Bank (2013) and World Bank (2014).

10. Index scale is from 0 to 6, with 0 being least restrictive and 6 being most restrictive. See table 2 in Isabell Koske and others (2015).

that could close roughly half the gap between Greece and the rest of the eurozone in measures of product and labor market regulation would raise real GDP by about 4 percent after 5 years, rising to 10 percent in steady state. Janos Vargás, Werner Roeger, and Jan in 't Veld (2013) show that reforms in product and labor markets and improvements in knowledge and innovation (as measured by research and development subsidies and the skill composition of the labor force) account for about 78 percent of the gap between Greece and the top euro area performers in 2012, measured in percent deviation from the baseline. Reforming the product market yields the highest GDP gains in Greece.¹¹

Dimitris Papageorgiou and Evangelia Vourvachaki (2015) use calibration techniques with Greek data to measure the macroeconomic and growth impacts of structural reforms. They find strong positive long-run gains from implementing structural reforms in the product and labor markets: 10-percentage-point reductions in nontradable prices and private sector wages lead to 9 percent gains in GDP. The results also suggest that the mix of fiscal policies helps determine the impact of simultaneously implemented structural reforms and debt consolidations in the short to medium terms. In the long run, the gains of the two policies complement each other, with additional GDP gains being in the range of 0.4 to 4 percent. By improving the economy's permanent productive capacity, structural reforms also improve the tax base. Although reforms create additional fiscal space, thus conferring benefits in the long run, they generate losses in the short and medium run, so it is not only pace that matters but also the mix of fiscal tools.

Ultimately, a bigger impact of structural reform in Greece would be one that worked its way through higher TFP. With lower entry barriers and less state control, manufacturing industries could catch up with best-practice technologies faster. Giuseppe Nicoletti and Stefano Scarpetta (2003) find that changing governance structures—for example, through privatization—would bring along improved competitive pressures and

11. That structural reforms are associated with growth may be easily verified by means of Barro regressions with the growth rate of per capita income as the dependent variable and initial income and a whole host of variables measuring structural reforms as independent variables. Cheptea and Velculescu (2014) report that 121 such structural reform variables, which include measures of corruption, research and development, corporate governance, and infrastructure, are statistically significant. Such regressions are known not to be causal, but they are nonetheless qualitatively informative about the scope for improvement in growth performance from narrowing the gap between actual and “benchmark” performance. For example, these authors report that the “average growth effect” from institutional reforms is at 1.3 percent for Greece, the third highest effect in the EU, after Bulgaria and Romania, both at around 1.5 percent.

entrepreneurial incentives. This would especially be the case if competition were promoted in the markets where privatized industries operate, such as energy, telecommunications, and transport, since companies in these industries provide inputs to the entire economy. In particular, they estimate that a gradual move (over 10 years) to the OECD-wide average share of state-owned firms in total value added would boost annual TFP productivity growth by about 0.7 percentage point in Greece. They also estimate that entry liberalization in service industries would boost annual TFP growth in the overall business sector by about 0.1–0.2 percentage point in countries like Portugal, Greece, and Italy.

Against the background during the 1975–2003 period of some OECD countries showing impressive TFP growth performance and others showing the opposite, Christopher Kent and John Simon (2007) find that changes in TFP growth are positively correlated with information and communications technology (ICT) spending as a share of GDP. They also find that the share of ICT spending is negatively correlated with the level of product market regulation. Greek industry is dominated by micro-firms, which account for about 58 percent of the nonfinancial business community, while larger firms account for only 13 percent. It therefore does especially poorly in ICT penetration.¹² The ongoing restructuring of the Greek economy (discussed below) is thus promising in this regard.

Underlying Greece's competitiveness problem is the fact that the Greek economy does not mobilize enough knowledge as expressed through the knowledge composition of the country's exports relative to those of the rest of the world. Among a sample of 128 countries, Ricardo Hausmann and others (2013) found that Greece had the largest gap between its level of income and the knowledge content of its exports. The same set of calculations suggest that Greece ranks second only to India in terms of how easy it would be to move to exporting more complex goods (Hausmann 2012). The average domestic value added of Greek exports over the period 1995–2008 was at around 10 percent of GDP, ranking it the lowest among all EU countries (and Turkey), which suggests huge room for

12. IMF (2015b), chapter 3, reports empirical results with OECD country data that show somewhat mixed effects of structural reforms on TFP, but generally the impact is positive. Econometric estimates suggest that lower product market regulation and more intense use of high-skilled labor and ICT capital inputs, as well as higher spending on research and development activities, contribute positively and with statistical significance to total factor productivity. The effects vary across sectors and are typically larger the closer the sector is to the technological frontier. For example, product market deregulation has larger positive total productivity effects in the services sector, but high-skilled labor and research and development expenditure have the strongest effects in ICT-related sectors.

improvement through vertical supply links' gaining a greater role (Rahman and Zhao 2014). Greece is the economic neighbor of some of the world's most advanced countries, a circumstance that ought to facilitate diffusion of innovations and technologies.

Despite all these potential gains from product market reforms, there is resistance to the adoption of any reform. We believe that if implementation is to succeed, the reforms ought to be "owned," beyond the sphere of politics, by the groups that will implement them.¹³ For example, product market reforms that free up competition in trades such as taxi transportation and pharmacies, let alone more far-reaching ones that may be threatening to broader groups of the population, must be eased in gradually and give affected workers alternative means of support in the transition, since removal of entry barriers and legislated mark-ups will shrink the affected sectors. Indeed, the rationale of IMF support to restructuring countries is to provide a cushion to the losers and help them in the transition to a new economic order. But despite the availability of ample finance for this purpose and the passage of more than five years since the initial agreement with the troika (in May 2010) to free up competition, several professions continue to jealously guard their privileges by restricting access to licensing and only slowly letting go of gross overbilling practices for services provided through public sector projects.¹⁴

We should also note that even if reforms were successfully implemented, there would still be a time lag of about 3 to 4 years before they had an impact on the real economy. We know this from the experience of other countries that have reformed. In Germany, for example, the Hartz reforms were implemented over three phases, from 2003 to 2005, with full cooperation among unions, employers, and government, but their impact only showed up in the German labor market starting in 2007 (Pissarides 2013). Research by Christian Dustmann and others (2014) also emphasizes the importance of *trust* in wage-setting institutions and other aspects of employment decisions in driving productivity improvements. With the current absence of trust and resistance to reform, Greece will require help

13. The Memorandum of Understanding between the European Commission, the Greek government, and the Bank of Greece—which the Greek government recently passed through Parliament—specifically states: "Success requires ownership of the reform agenda programme by the Greek authorities" (European Commission 2015, p. 4).

14. The prevalence of overbilling is common knowledge in Greece, and it is one of the reasons businesses were keen to get public sector contracts—only to discover recently that payments are not forthcoming because of the state of public finances. Business people who asked not to be named told us that they are discounting public sector contracts by more than 50 percent and still making substantial profit.

from the international institutions for a longer period than the current three-year agreement signed on August 19, 2015 (European Commission 2015), even if the country effectively reformed starting now.

III. The Impact of Labor Market Reforms

Labor market reforms have been given greater priority in Greece than product market reforms, mistakenly in our view. Whether this was because successive Greek governments found it easier to reform labor markets than product markets or because the troika insisted on them is a moot point.¹⁵ The sequencing of reforms brought about the large fall in wages ahead of any price adjustment, with the demand consequences that we have outlined.

Several changes have taken place in the structure of labor market institutions. The Greek labor market used to exist in a rigid framework characterized by numerous firing restrictions, restrictions on overtime work, and the minimum wage. Collective bargaining at the national level, the industry level, and the firm level determined many outcomes, and so did many other frictions. Relaxing all those restrictions does facilitate sectoral reallocation, but compliance with the various regulations has not been universal. Apart from some large firms, the predominant and most widespread firms in Greece are family-owned and very small, making it easy for them to circumvent labor laws. Labor inspections were minimal. Moreover, the shadow economy in Greece is much larger than in the rest of the eurozone, estimated to make up 24 percent of GDP as compared with the eurozone's 15 percent (European Commission 2013). These features of the Greek economy also explain why the reform of the collective bargaining law has had a limited impact so far, largely because it involved a small number of firms (Lyberaki, Meghir, and Nikolitsas forthcoming).

Of greatest macroeconomic significance is the sharp reduction of the minimum wage, the decentralization of wage bargaining to the firm level, and the extensive relaxation of employment protections. The minimum wage was reduced in both the public sector and the private sector by 22 percent in February 2012 from a monthly rate of €751 to €581. The aggregate contraction and the increased flexibility of labor markets have been associated with a large decline in unit labor costs, which have fallen

15. Gikas Hardouvelis informed us (in a private communication) that from his experience as chief economic adviser to Lucas Papademos as prime minister of Greece from November 2011 to May 2012, during negotiations in spring 2012 it was clear that the troika was insisting on labor market reforms to precede product market reforms, arguably because of convenience.

by about 20 percent since 2009.¹⁶ The real exchange rate based on unit labor cost has depreciated by 16.5 percent since 2009, though the CPI-based rate has depreciated by only 5.6 percent since 2009.

Did the extensive labor market reforms undertaken in Greece have any positive impacts? The impacts were on the whole small and fragile. In 2014, the Greek labor market started to show signs of recovery. Employment contracted at a slower rate than in 2013, by -0.9 percent year-over-year in 2014Q1, as compared with -2.9 percent in 2013Q4 and -4.9 percent in fiscal year 2013. The evidence from business-cycle and forward-looking indicators signaled, in July 2014, an expansion in employment in 2014Q3, which occurred at 1.4 percent year-over-year in 2014Q3 and increased to 1.5 percent year-over-year in 2014Q4 (National Bank of Greece 2014a, 2014b, 2015).

More than two-thirds of employment losses in the private sector (730,000 jobs) had been due to the closure of about 220,000 small firms (30 percent of the existing small enterprise count) together with layoffs in that sector. Most of those jobs were lost in firms with a domestic orientation and with less flexible labor market structures, reflecting the Greek economy's adjustment to a greater role for larger and more export-oriented firms. Indeed, job losses in medium-sized and large firms were half those experienced in small firms (-17 percent cumulatively since 2008). The contribution to total turnover made by larger firms (those with turnover exceeding €50 million) increased from 27 percent of turnover in 2008 to 36 percent in 2013, bringing Greece closer to the EU average of 43 percent in 2013. And after several years of decline, the number of firms started growing in 2014, due both to existing firms getting back into business and to new firms being established (National Bank of Greece 2015).

The fact that wages fell by 23 percent in the period 2009–13 and employment contracted by 24 percent cumulatively during that period caused the wage share in the economy to fall to 48 percent of GDP, 13 percentage points below its 25-year average. On the other hand, capital income, mainly comprising the gross operating surplus of the business sector, has proved more resilient—reflecting an ongoing corporate restructuring and lower labor costs—declining by 19.7 percent in the 5 years leading up to 2013. These developments are increasingly favorable for new hiring, since improving business profit margins should lead to higher investment and business expansion. By linking employment to corporate profitability and output growth, the National Bank of Greece (2014b) forecast that it should

16. From the 2015 AMECO Database; see note 7.

be profitable for Greek firms to increase their employment by an average pace of 2.5 percent per year until 2020, or 19.6 percent cumulatively between 2014 and 2020, which would add up to 720,000 new employment positions during the period, pushing the unemployment rate below 21 percent in 2016 and 12 percent by the end of 2020; “Such employment creation will clearly depend on the timely implementation of the programme, including its growth-enhancing structural reform agenda” (National Bank of Greece 2014b, p. 1). However, these optimistic assessments were not realized, with the uncertainties introduced by the change of government in January 2015 playing a critical role.

Having examined the Greek case in some detail, it is natural to wonder whether or not the EU’s institutional environment is more conducive than Greece’s to the implementation of reforms. Alberto Alesina, Silvia Ardagna, and Vincenzo Galasso (2010) examine the linkages between the adoption and facilitation of structural reforms in the euro area, using both theoretical and empirical methods. They find that within the small sample of 11 countries that they work with, the euro has indeed been associated with an acceleration of product market reforms, which did come first, but not with labor market reforms.

IV. Dealing with Greece’s Large Debt

A central tenet of the Greek adjustment program is that it would enable Greece to become sufficiently competitive so as to regain access to international capital markets. With its external trade balance being persistently negative, a central hope is that economic restructuring will alter fundamentals sufficiently to achieve an improved goods balance. The latter outcome, along with stronger earnings in Greece’s traditional mainstay of tourism, will narrow the gap to be covered by capital flows in the form of fresh borrowing and investment. Therefore, a central question is to assess the main forces affecting Greece’s accumulated external liabilities so as to be able to predict its ability to deal with its large debt.

The mainstream view is that Greece, Ireland, Italy, Portugal, and Spain have accumulated external liabilities due to their loss of competitiveness following relative increases in their unit labor costs. Ruo Chen, Gian Maria Milesi-Ferretti, and Thierry Tresselt (2013) question this view by pointing to factors that are seemingly external to those countries and have affected them as a group. First, among European economies there has been an asymmetric trade interaction with emerging Europe, fast-growing China, and oil exporters. Germany has captured fast-growing markets

such as China for its exports and has integrated its production chains with central and eastern Europe, a factor that was also decisive in its ability to expand production without incurring domestic wage raises. Second, during 2000–09 the real exchange rate appreciation in those eurozone periphery countries reflected substantial nominal exchange rate appreciation.

If this is a correct diagnosis, a more accommodative ECB policy, by strengthening growth in the northern eurozone, would “lift all boats” in the eurozone periphery (Pissarides 2013). In addition, to the extent that the debtor countries are affected by the changing terms of trade in roughly the same manner, they could also benefit from eurozone-wide policies to further improve their competitiveness. That is, infrastructure investments and spending on research and development aimed at improved competitiveness will generate spillover effects, while such spending will benefit from larger multipliers than were typically assumed in the design of stabilization programs in the eurozone periphery.¹⁷

The findings of Chen, Milesi-Ferretti, and Tressel (2013) are not the entire story, however, at least as far as Greece and Spain are concerned. During the years 1999–2007, both countries experienced economic booms financed by borrowing and increasing exports (Galenianos 2015). In particular, Greek exports rose from 19 to 22 percent of GDP, increasing at one of the fastest rates of any eurozone country during that period. However, imports increased even faster, outrunning exports. The current account balance, as a share of GDP, had averaged nearly –8 percent for Greece during the period 1999–2008; in 2014 it was down to –2.6 percent. The Greek program can boast of success in the external trade area, as we have already argued, but despite the large fall in the trade deficit more needs to be done in view of the country’s obligation to service its huge debt.

The ECB’s Expanded Asset Purchase Programme, while principally aimed at offsetting deflationary pressures within the eurozone, can also improve competitiveness in the eurozone as a whole. That is, because of

17. There have been prominent voices, including that of Olli Rehn, European commissioner for economic and monetary affairs and the euro from 2010 to 2014, in favor of policy initiatives by the European North. As Rehn (2013) put it: “As the two largest eurozone economies, Germany and France together hold the key to a return to growth and employment in Europe. If Germany can take steps to lift domestic demand and investment, while France embraces reforms to its labour market, business environment and pension system to support competitiveness, they will together do a great service to the entire eurozone—providing stronger growth, creating more jobs and reducing social tensions.” Most recently, Blanchard, Erceg, and Lindé (2015) have quantified substantial benefits for the periphery of fiscal expansion by core Europe, although those benefits are shown to be present only in a liquidity-trap environment.

lower euro interest rates, the resulting downward pressure on the international demand for the euro will likely bring about its nominal depreciation. The Expanded Asset Purchase Programme will likely help improve Greece's external competitiveness for two main reasons: One, offsetting deflationary pressures throughout the eurozone would suppress Greece's real exchange rate vis-à-vis its EU trading partners, especially while it remains under its stabilization program; and two, the program would reduce the borrowing costs of the Greek sovereign when it returned to the international markets. If nominal depreciation of the euro continues, it would help Greece in connection with its non-EU trading partners, but its competitiveness problem would remain, especially in connection with its EU trading partners. Solving the competitiveness problem would require a targeted approach to structural reforms.

There is a long history of linking debt relief with reforms that improve economic efficiency. As Barry Eichengreen, Peter Allen, and Gary Evans (2015) discuss, in 1991 Western governments, through the Paris Club, offered Poland a 30 percent cut in the present value of its debt in return for agreeing with the IMF on the terms of a structural adjustment program. Poland subsequently received a further 20 percent cut which, importantly, was contingent on fulfillment of the structural conditions of its IMF program (Greenhouse 1991). The politics are vastly different, but Greece, too, has been offered conditional debt relief: First, in the Eurogroup Statement of November 27, 2012 (Eurogroup 2012), and then, most recently, in the Eurogroup Statement of August 14, 2015 (Eurogroup 2015).¹⁸ However, in

18. The Eurogroup Statement on Greece, November 27, 2012, first grants Greece relief of its debt in a number of ways, and then states: "Euro area Member States will *consider further measures and assistance, including inter alia lower co-financing in structural funds and/or further interest rate reduction* of the Greek Loan Facility, if necessary, for achieving a further credible and sustainable reduction of Greek debt-to-GDP ratio, when Greece reaches an annual primary surplus, as envisaged in the current MoU [Memorandum of Understanding], conditional on full implementation of all conditions contained in the programme, in order to ensure that by the end of the IMF programme in 2016, Greece can reach a debt-to-GDP ratio in that year of 175 percent and in 2020 of 124 percent of GDP, and in 2022 a debt-to-GDP ratio substantially lower than 110 percent" (Eurogroup 2012, p. 2). The Eurogroup Statement on Greece, August 14, 2015, states: "The Eurogroup considers the continued programme involvement of the IMF as indispensable and welcomes the intention of the IMF management to recommend to the Fund's Executive Board to consider further financial support for Greece once the full specification of fiscal, structural and financial sector reforms has been completed and once the need for additional measures has been considered and an *agreement on possible debt relief to ensure debt sustainability* has been reached" (Eurogroup 2015, p. 2; emphasis added).

this latest instance, relief is conditional on its being deemed necessary for debt sustainability.¹⁹

Debt overhang affects the policy space of the Greek government and, in addition, fuels adverse expectations through its effect on individuals' perceived wealth. Given the loss of wealth associated with the unprecedented contraction since 2010, such expectations have a strong impact on the economy. Because a sovereign can always walk away from a deal, especially if it is running surpluses, and refuse to service the outstanding debt, it makes intuitive sense for the creditors to provide incentives associated with the implementation of structural reforms in the form of debt relief.

Andreas Müller, Kjetil Storesletten, and Fabrizio Zilibotti (2015), motivated by the events surrounding the Greek and eurozone crisis, develop a theory of sovereign debt to examine the properties of the optimal dynamic contract between a planner and a sovereign when the country cannot commit to honoring its debt. Their theory's main implication for Greece is that at high debt levels the incentive to reform is reduced, because most of the benefit from reform will go to the creditors. The optimal program requires that whenever a credible default threat is on the table, the lenders should give in and improve the terms of the agreement for the debtor country by granting it higher consumption and a lower reform effort. In other words, the austerity program should be relaxed over time, whenever this is necessary, to avert the breakdown of the program. These results clearly bear upon the negotiations between Greece and its creditors.

V. Concluding Remarks

During most of the time since Greece's accession into the euro area, the Greek government collected less in taxes than it spent, as indicated by its increasing fiscal deficits as a share of GDP, which rose from 4.5 to 15.6 percent between 2001 and 2009. In addition, the Greek economy consumed more than it produced and had to import far more than it exported, as indicated by current account deficits as a share of GDP, which rose from 7.2 to 14.6 percent between 2001 and 2008. As a result, Greece experienced an increase in its external public debt as a share of GDP from

19. Debt sustainability, which debt relief is meant to ensure, remains a bone of contention between the IMF and the eurozone due to different definitions and policy objectives. Such differences have, however, been played down by the eurozone in recent informal statements. See Spiegel (2015).

103.7 percent in 2001 to 129.7 percent in 2009, in spite of generous help from the EU's structural funds.

The Economic Adjustment Programme has been a major “demand” force in the severe contraction since 2009, but there is also a “supply” force. Greece must further improve its competitiveness vis-à-vis its euro-zone partners, and debt relief in and of itself cannot address this need. It requires a targeted approach involving structural reforms, especially reforms that improve competitiveness in the market for goods and services. Such reforms are necessary to make Greece more productive, help it attract investment, and aid it in developing forward-looking export industries. This will inevitably require deep restructuring of the economy, a process that typically follows crises and is, to some extent, already under way.

Reforms have effects over and above the impact of price and wage changes on unit labor costs. In Greece they are critical for another reason too, namely an adverse demographic outlook. Current population decline would make it harder for Greece to pay off its debt (Ioannides 2015). Reforms involve short-term costs and are thus painful, but they are necessary. Targeted smart reforms are under a nation's control, and it would be a tragedy if Greece did not undertake them, especially while under assistance. Debt relief alone will not solve the competitiveness problem, but if it is designed as an incentive to improve competitiveness, it could help.

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GENERAL DISCUSSION All four papers were the subject of the discussion that follows.

Gregory Mankiw opened with a question about one of the findings in Christopher House and Linda Tesar's paper. They had found that imposing a labor or consumption tax and putting the proceeds toward paying off foreign creditors would severely depress GDP and, therefore, not raise as much revenue as one might hope. But Mankiw thought the correct parameter for evaluating this would be the uncompensated elasticity of labor supply, which was either close to zero or even backward-bending in the long run, and as a result it should not have a large effect on GDP after all. He wondered if their finding differed from this because, rather than following the standard assumption that income effects are similar to or somewhat larger than substitution effects, as he assumed, they had treated substitution effects as larger than income effects. Or was it because of Keynesian effects from sticky prices and, if so, how long do those effects last?

In Mankiw's view, the reason one cannot simply tax labor or consumption in Greece to pay off all the creditors is that there are limits to how much one can apply such methods and not because of Keynesian or neo-classical effects found in the modeling, such as income and substitution effects. He thought it probably has more to do with the political instability and tax evasion that would result at a certain point.

Ben Friedman spoke up to comment on the political-economy implications of the Greek problem, including the threat it posed to the structure of the euro area. He was surprised none of the authors had mentioned the banks and the way they were bailed out. In his opinion, it was a great tragedy that the Europeans paid, and are still paying, a great price for the way they handled their bank bailout. In the United States, by contrast, the government let the banks absorb losses during the crisis and then recapitalized those that needed recapitalizing, including some very large ones such as Citibank and Bank of America. The Europeans shied away from that approach and instead moved many of the questionable debts, as soon as it became clear the Greeks might default, from the banks' balance sheets to those of the central banks. Friedman thought Carmen Reinhart and Christoph Trebesch were right in concluding that debt relief is what has been needed all along. Private sector lenders know how to handle the situation of borrowers being in trouble and figuring out what to do with those debts, even though it may be a messy solution—it is after all what bankers get paid to do. But when debts are on the balance sheets of the official lenders, one is stuck in the fiction that they must never accept a default.

If the upshot were just a matter of some governments having to take losses that they did not want to admit, that might not have been too serious, Friedman argued, but now it has reached the point at which it has affected the high politics of the European Union (EU). He offered by way of analogy the situation in the Americas today in which Argentina is in default to many lenders, many of them domiciled in the United States. One cannot easily imagine President Obama being asked what his opinion is on Argentinian debt—he would probably respond by asking reporters why they thought he should have an opinion on the subject at all—and it certainly does not affect the high politics between Argentina and the United States. By contrast, up until the refugee crisis hit Europe, Angela Merkel, the Chancellor of Germany, was unable to hold any press conference without being asked what she thought about the Greek crisis.

David Romer had three big-picture questions stemming from three of the papers. He commended Christopher House and Linda Tesar for their paper's narrow focus on the feasibility of tax and spending options for solving the debt problem, which he read as concluding that those options are inadequate due to what amount to leakages in dynamic scoring. His first question was why House and Tesar did not take the next step and examine alternative ways to solve the problem. Two methods occurred to him: debt write-downs, which Reinhart and Trebesch mentioned in their paper, and structural reform, which Yannis Ioannides and Christopher Pissarides underlined as an approach with potentially enormous value. If Greece could raise its growth through other means, it could solve the debt problem by making the denominator in its debt ratio bigger.

Second, he was curious how far Reinhart would be willing to take her policy prescriptions. Would she advocate abolishing foreign borrowing if, for example, she were the newly installed president of a Latin American country? Certainly higher Greek domestic saving would be great, but achieving that is extremely hard. One could imagine instead returning to the practices of the 1950s and 1960s, when there was little mobility in international capital. Is that what she would ideally like to see?

His third question was aimed at Beatrice Weder di Mauro and coauthor Julian Schumacher, who advocated that the International Monetary Fund (IMF) abolish its systemic exemption. While it seemed true that the IMF had set up an incredibly discretionary process and that there were big disadvantages of that, it also appeared that if the IMF had not been willing to break its rules and had allowed Greece to go into a disorderly default in the crisis period of 2010, the systemic consequences would have been enormous. Romer said he certainly would not have advocated that the IMF

simply abandon Greece to default. He wondered whether there might be a middle-ground approach that would allow for discretionary actions in exceptional circumstances without sacrificing all the benefits of a rule-based approach. His impression was that the authors had not fully articulated their position, and he wanted to hear more.

Bradford DeLong was struck by a finding in Reinhart and Trebesch's paper showing that, historically, real *ex post* returns on defaulted bonds were in the range of one to five percent, despite the losses due to haircuts and arrears. Notwithstanding Jeremy Bulow and Kenneth Rogoff's demonstrations that one should never do so, when crises come creditors somehow have enough control to squeeze the lemon hard, regardless of the excess burden in taxes and other costs imposed on the Greeks.

Echoing Romer's question to Reinhart, DeLong asked: Is it really the case that a country should never borrow in a currency it cannot print unless it happens to be Canada or Australia? And if so, should a country never let its firms borrow in a currency that it cannot print, because the private debt will be turned into a public debt during the crisis when everyone is looking to kick the can down the road? DeLong wondered whether alternative baselines were needed to assess this. Likewise, he wondered what would have been the macroeconomic consequences for Texas in the early 1990s had the U.S. government insisted that Texas reimburse the Resolution Trust Corporation for payments made to depositors in the Texas savings and loan crisis.

Kevin O'Rourke agreed with Romer's point that rules should be waived when there is a real systemic risk, but he also thought it should have a corollary requirement. In the case of deciding not to restructure a debt because of the systemic risk involved, should not the attendant cost be shared among all the members of the system that is being protected? He also agreed with DeLong's concern about the dangers that flow from private sector borrowing abroad. O'Rourke reminded everyone that in Europe, democracy resides at the level of the nation-state rather than at the trans-European level, so when a nation's sovereign decision-making is disrupted by debt crises, even temporarily, it creates a serious political problem. This led him to wonder whether, lacking a proper banking union, cross-border banking and lending should be reconsidered altogether.

He also pointed out a seeming contradiction between two of the papers. As he understood it, Weder di Mauro argued that the present value is what matters most when assessing debt levels, whereas Reinhart's paper alluded to the face value of a debt actually mattering most for economic

performance. Both views seemed plausible to him, so he would need to see more empirical evidence to choose between them.

Maurice Obstfeld found it striking that the Greek crisis started out as a debt crisis and only later evolved into a banking crisis centered on the relationship between the European Central Bank (ECB) and the Greek banks. He concurred with Weder di Mauro and Schumacher's observation that when the European Stability Mechanism (ESM) tries to evaluate systemic risk, it rates any risk of default as systemic, and added that this is mainly because a country in default might have to leave the eurozone due to the position of its banks. Obstfeld concluded that to make the ESM function credibly, for example so that collective action clauses can allow countries to actually default, one would need to have a complete banking union, something that is not present in the eurozone. The lack of such a union is an Achilles' heel in the eurozone arrangement today, but it seemed to him that a banking union could be established and would stabilize the eurozone, solving part of the ESM problem, even if it created political problems.

Ricardo Reis found it surprising that the central bank did not play a more central role in the presentations, especially as it concerns Greece. The Bank of Greece is the main source of outside funds for Greece, through its access to the ECB, its effect on interest rates, and in determining how much banks can raise. Moreover, as part of the euro system, the Bank of Greece is no longer able to choose monetary policy for Greece to accommodate fiscal policy changes there, so this key determinant of fiscal multipliers works quite differently from the model in the House and Tesar paper. Finally, while Weder di Mauro and Schumacher had focused on the public debt, Reis thought their analysis neglected the very large liabilities the Bank of Greece holds to the rest of the euro system, both through the Emergency Lending Assistance (ELA) program and through the target program.

It worried Reis that Greece's central bank still has in place capital controls with limits on deposits. A problem arises once many Greek citizens expect the country to exit the euro. For Greeks today, taking currency out of a bank means getting foreign currency, whereas leaving money in a bank risks seeing it decline in value after Greece leaves the euro. As a result, the optimal strategy for individuals is to get as many euros into their pockets as they can, even though this leaves a money multiplier equal to one—essentially eliminating the banking system. Whether the government raises taxes, forgives debt, reassesses sustainability, or engages in structural reforms, the dominant strategy for individual Greeks is to have no banking system working at all, clearly an unsustainable situation. It is

no longer simply a debt problem. Reis saw this as ultimately stemming from the way the ECB works, enabling an exchangeability between currency and deposits that has led to a bad speculative equilibrium.

Caroline Hoxby thought the focus needed to be on structural reform, something almost every observer seemed to agree is badly needed. The labor market is very distorted, deregulation is needed, monopolistic and oligopolistic practices such as governmental mispricing of purchases need to be ended—in short it seemed clear that many structural reforms are in order. But the ordinary Greek citizen does not seem to recognize this, and Greek leadership has been weak in supporting it and promoting it. In that regard, she wondered whether being integrated into the EU and the eurozone was helpful for making structural reform, or harmful. On the one hand, it certainly increases the pressure for structural reform because capital flows occur in competition with other European countries that have better institutions. But membership also decreases political pressure for structural reform because it makes it very easy for people to leave Greece and effectively live and work elsewhere.

Hoxby's comments prompted Donald Kohn to raise the issue of competitiveness. To remain in a currency union permanently and avoid serious economic pain, a country has to find a way to be competitive. What struck him about Ioannides and Pissarides's paper was the finding of a lack of price responsiveness as compared to wage responsiveness. Kohn wanted to know if the labor market was more competitive than the goods and services market, or if perhaps the declines in wages were concentrated in the public sector, where the prices cannot adjust. Are prices set in the EU common market framework? Whereas labor market costs do seem to be adjusting, prices in the product market do not, and this begs the question of what the right structural reforms might be.

Martin Baily added to the discussion of structural reform by noting a point raised at previous Brookings Panel conferences, namely that if structural reforms are in the first instance job destroying, in a Keynesian situation they can actually make things worse. Structural reforms that give new businesses a chance to open are certainly good, Baily said, but they will not raise employment when, for example, they allow big-box stores to arrive and drive out small businesses. Episodes like this might raise productivity but would not raise GDP. He felt structural reforms needed to solve the employment problem first before focusing on enhancing productivity. Baily also proposed that the problem of tax evasion in Greece is a priority. He recalled recent news reports citing high rates of uncollected statutory taxes, so that a better long-term solution than raising

tax rates would be to increase rates of compliance. The assessment of the two papers is that Greece's situation remains gloomy, and he found the solutions offered in the papers to be limited. Across Europe there is an aggregate demand problem, especially severe within Greece, and solutions should aim firstly at that problem. A contractionary fiscal policy—even in the form of collecting more uncollected taxes—may not be the right road in the short run.

Martin Feldstein agreed with Baily about the need for increased economic growth in Greece to finally resolve the problem, adding that nothing in the most recently negotiated deal suggested the potential to accomplish this. He has heard the same from European acquaintances he has spoken to about this—people who are much closer to the Greek crisis and its coverage.

Richard Cooper shifted the discussion to what he labeled the psychological side of structural reform. He noted Ioannides's report that not only ordinary Greeks but even Greek leaders felt unpersuaded about the need for reform, and had two questions for him. First, might the word *adjustment* be more useful in public debates, since the elements assumed to be in structural reform are understood very differently by different people? And second, what did Ioannides think about presenting the public with this simple proposition: One cannot consume more than one earns or produces without borrowing from some third party? Such a simple statement should be easy to get across to ordinary households. The Greek public appeared not to understand the gravity of running a current account deficit of 10 percent of GDP as well as a budget deficit in some years. Was this due to politicians' failure to communicate the issue to them? Or was it a failure of journalists and economists?

Ioannides replied by reminding everyone that the U.S. public did not seem to understand the same problem either. To that comment, Cooper answered, somewhat tongue in cheek, that the American public understood the problem of deficits quite well but simply dealt with them by thinking the U.S. government could borrow endlessly. Greece, by contrast, could not borrow, once the severity of its crisis was revealed, and that is the crux of the problem, Cooper said. Deficit adjustment then became necessary by simple arithmetic. To him, the real question was, why was that lesson not brought home to the Greek public? Or was the situation perhaps a collective gamble that Greece could dragoon the rest of the Europeans into lending more to them?

The authors of the four papers responded next, beginning with House. He noted that his and Tesar's paper had relied on certain parametric choices

in the modeling, including their use of Greek tax return data to measure the taxable base of labor income, which is not the same as the overall amount of labor income earned in the model. He added that Mankiw was correct in thinking that sticky prices and sticky wages are influencing the results, since price and wage rigidity are substantial in their model and dominate the model behavior, particularly in the short run. Concerning Greece's liability to outside creditors, it is measured in nominal terms, so production and consumption are not identical between Greece and the rest of Europe, and movements in relative terms of trade also interfere with the results.

In response to Romer's inquiry about ways to improve the Greek situation beyond tax and spending cuts, House said that in addition to debt write-downs, another tool is to allow Greece to delay repayment and to do so at below-market rates. This would mean setting up extremely favorable loan terms while keeping the face value of the debt fixed. It would create some breathing room although, admittedly, it would also run into a credibility problem.

Ioannides spoke next. He responded, first, to Hoxby's concern for the importance of structural reforms and the uncertainty whether achieving buy-in for them is easier or harder due to the free movement of labor that EU membership enables. He believed the net effect has been to make it easier, and certainly easier than under autarky, because membership has made the public more apt to learn from the successes of other countries, and in fact Greece's attachment to having a European identity has been a driver of much of the politics. Related to the last point, he mentioned the advantages of EU membership in enabling the importation of technology, research, and university education, with all their links to industry. In Greece today the linkages between industry and the universities are weak, so they represent an area that can be strengthened and should become a priority.

Price rigidity is indeed a problem, he added. Reforming the labor market was easier by comparison, and it should be recognized that workers today are receiving a fraction of what they were paid before the reforms. Product market reforms were in the agreements, as well, but implementing them has not been given priority and it is harder to carry out. Labor and product markets were certainly grossly noncompetitive up to the onset of the crisis in 2010.

Concerning Baily's point about the significance of uncollected taxes in Greece, Ioannides agreed that they represent a big problem. Businesses are also in arrears to the tax authorities, so the shockingly high number

cited earlier of 85 percent of taxes uncollected might not be far off if the sum total of arrears is included. More importantly, Ioannides said, one needs to know how much can realistically be collected. The tax authorities have made progress in identifying what a realistic compliance rate is. It turns out that if the compliance rate in Greece had been, prior to the onset of the crisis in 2010, the same as the average rate across the eurozone, there would have been no debt problem in the first place. The money that could have been collected was actually there, but the Greek government was just not doing its job in collecting.

Finally, he said, while the outlook of the Greek people concerning the seriousness of the debt is puzzling and even the more educated know little of the country's tragic history in this area, he remains hopeful that progress is being made. He believes that working with other Greek economists to educate the public and speak with the press are deeply important, and noted his own efforts to contribute to that as a blogger. A part of the public, especially in the unfolding political parties, understands the need for reform.

Reinhart then added her responses to the mix of author comments. Noting that a few speakers had raised the issue of banks and wondered why they were a focus of interventions, she pointed out that contagion was a serious concern. Although it was true that the Greek crisis had started as a debt crisis, not a banking crisis, that was not the case in the other countries, where the official sector took over privately held Greek debts to thwart the risk of contagion. She agreed with those who thought this approach has caused delays in the recovery, and not just in Greece, noting that in other crises public and private restructurings occurred much quicker.

The elephant in the room, Reinhart said, was the problem of Greece's external dependence, something Romer and DeLong raised. She believed it could be broken down into three problems to solve. First was the management of the government debt, which the examples of Mexico and Chile have shown to be a problem that can be dealt with. Second was the management of private sector debt, which is much trickier to resolve. She has long been concerned about surges in capital flows due to the procyclical nature of capital markets, which caused especially serious problems in Ireland, Spain, and Iceland. And the third aspect of external debt, which is an endemic problem in Greece, is the public's attitude toward reform measures. How do you convince the public that they will not have their wealth confiscated? Restoring public confidence is very difficult. In 1932, Greeks endured a forcible debt conversion from foreign currency deposits

to drachmas, so there is a precedent and the public has grounds to be worried that it will recur.

Finally, concerning making economic growth a priority, an issue Baily and Feldstein had raised, Reinhart pointed out that she and Trebesch had stressed the importance of haircuts for this same reason, to help restore growth. When one looks at restructuring episodes in Latin America, for example, one sees that the Baker Plan, which was to extend maturities, did not conclude the debt crisis there, whereas the Brady Plan, which included haircuts, did.

Weder di Mauro spoke last. Responding to O'Rourke's question whether it is the face value or the present value of debt that matters most, she said what matters for sustainability is the present value, since that is what defines a country's debt repayment burden. Unfortunately, what seems to matter in the headlines is the face value since most commentators are not aware of the highly concessional terms Greece enjoys. In the short run, Greek debt burdens are low. In the medium run, Weder di Mauro said, the repayments will increase and may breach the thresholds applied by the IMF and the ESM. This then raises questions about the need, the timing and the type of possible further restructuring of Greek debt held by the official sector. Restructuring by extending grace periods and maturities for European loans may decrease the medium-run repayment burden. However, it would extend the external dependence of Greece even further and increase the risk of repeated renegotiations and political clashes such as the one witnessed in 2015.

Concerning the role of the banks, Weder di Mauro pointed out that foreign banks took very high haircuts in the debt restructuring of 2012. There was a measure of coercion to achieve this: European governments leaned heavily on their banks and Greece retrofitted collective action clauses in debt contracts. Therefore, Greek debt held by European banks was not simply transferred to the ECB. However, over the course of 2015, the run on Greek banks' deposits had forced the ECB to extend ever more emergency liquidity assistance in order to prevent a shutdown of the Greek banking system and a de facto exit from the currency union.

Finally, Weder di Mauro considered Romer's doubts about her paper's proposal that the IMF end its policy of systemic exemption. Romer had suggested that if in 2010 the IMF had told Greece it could not grant access to a loan restructuring, Greece would have gone into a tailspin, but she believed that what would have happened is that the Europeans would have assisted in restructuring earlier than they did. She did not think Greece would have defaulted and exited the eurozone at that time.

In her view, at the very least the IMF and the ESM need to be clear what they mean by “systemic” risk and should also have to consider the alternative costs, that is, the costs of delayed restructuring and gambling for resurrection. It struck Weder di Mauro that a renewed debate is needed on the access conditions for international financial assistance both at the IMF and the ESM in the cases of doubtful debt sustainability.