3

REDUCING THE EMPLOYMENT IMPACT OF CORPORATE BALANCE SHEET REPAIR

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Corporate Balance Sheets Matter for Employment

Corporate sector balance sheets in many euro area economies are in need of repair, but fixing them will have significant implications for other sectors in the economy. Private households are struggling with high debt (Chapter 2), as are sovereigns (Chapter 4). All three sectors face the challenge of reducing their liabilities and repairing their balance sheets, but a simultaneous effort to deleverage is likely to create adverse feedback loops among the three. There is a particularly direct link between corporates and private households: the latter derive most of their income from employment in the corporate sector, while at the same time, a reduction in household spending so that funds can be used to pay off debt will negatively affect corporate profits and possibly employment. This chapter focuses squarely on the link between corporate deleveraging and firms' employment decisions.
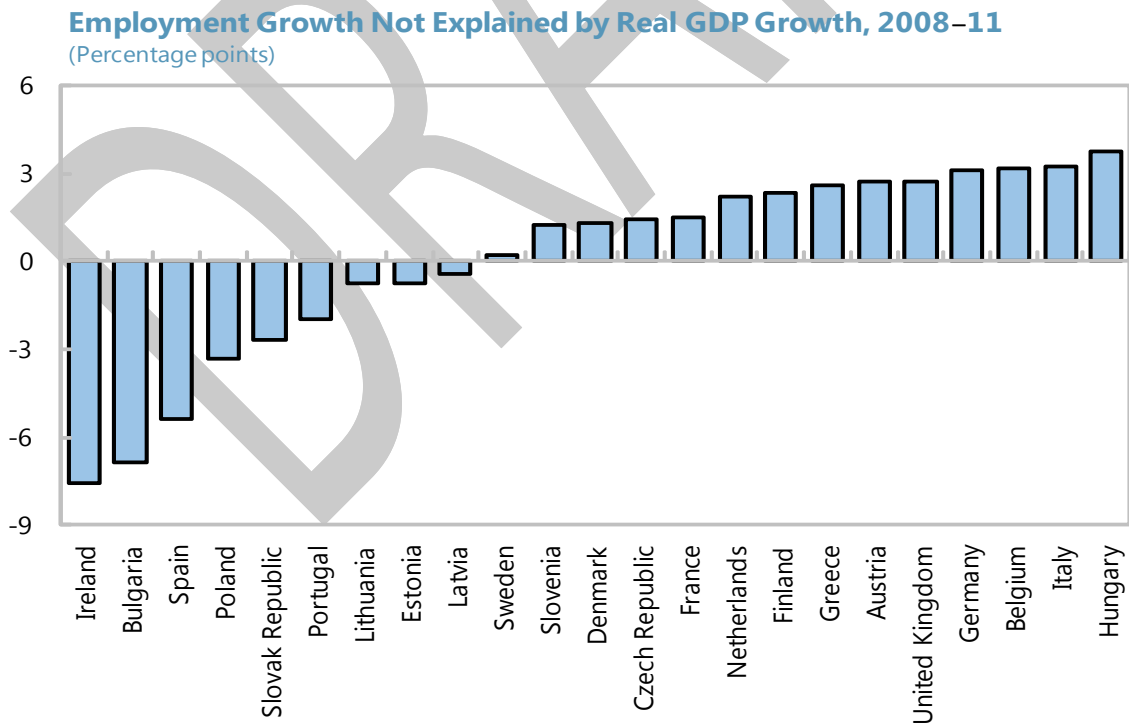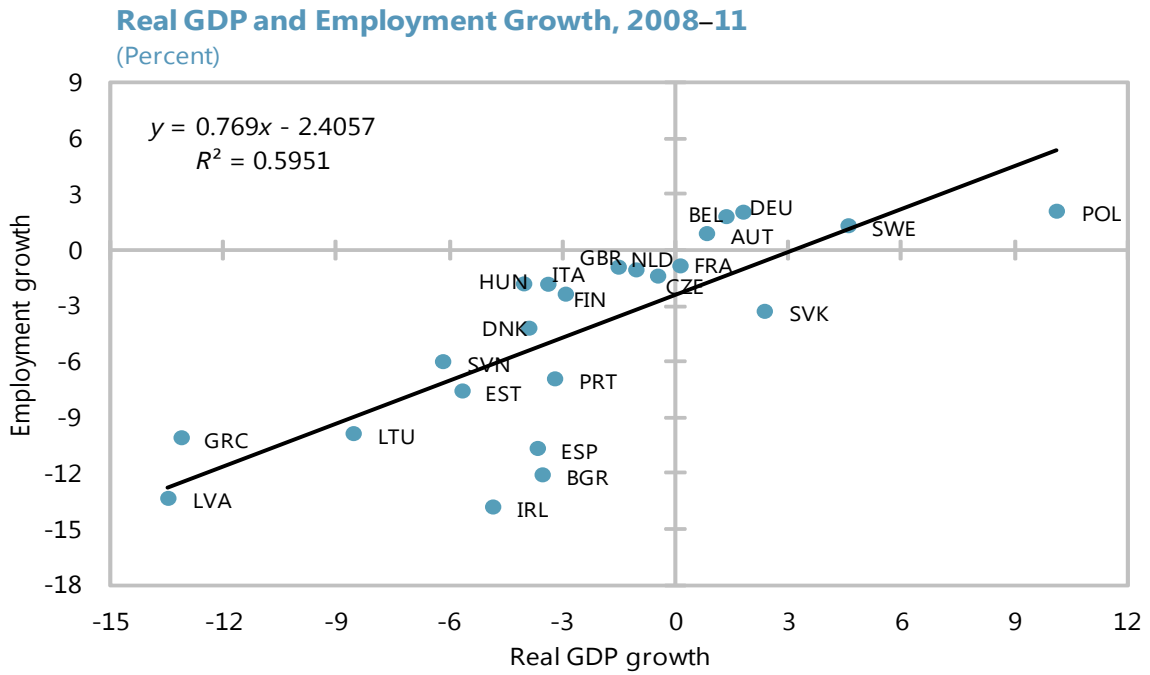
Since the onset of the global crisis, labor market developments among European Union countries have been strikingly different. These differences are clearly visible in unemployment rates. Between 2008 and 2012, the unemployment rate increased to 25.0 percent from 11.4 percent in Spain, but declined to 5.5 percent from 7.5 percent in Germany. The contrast is even starker in the employment data. Between 2008 and 2011, employment dropped by 14 percent in Ireland, but increased by 2 percent in Poland and Germany.

These differences partly result from differences in real GDP growth. A scatter chart of real GDP growth and employment growth between 2008 and 2011 shows a strong correlation between the two (top panel of Figure 3.1). Latvia, which had the largest decline in real GDP between 2008 and 2011, also experienced one of the largest reductions in employment.[1] And Poland, which had the largest increase in real GDP during this time period, also had one of the best employment outcomes.

However, in a number of countries, the losses in employment far exceed what could be expected given the drop in GDP, particularly in Bulgaria, Ireland, and Spain (bottom panel of Figure 3.1).

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[1] Latvia's official employment data show a larger decline in employment between 2008 and 2011 (25 percent) than the data in this chapter (13 percent). This discrepancy is the result of a break in the official data: figures for 2011 and beyond are based on a new labor force survey, whereas data for 2010 and earlier are based on an old labor survey. To prevent the break in the series, this chapter uses the old labor force survey data for both 2008 and 2011. Splicing the old and new series gives very similar results.

Figure 3.1. Real GDP and Employment Growth, 2008–11

Real GDP and Employment Growth, 2008–11
(Percent)

$y = 0.769x - 2.4057$
$R^2 = 0.5951$

Employment Growth Not Explained by Real GDP Growth, 2008–11
(Percentage points)

Source: IMF, World Economic Outlook database.

Bulgaria, for example, saw a decline in real GDP of 3½ percent between 2008 and 2011, whereas employment dropped by a staggering 12 percent. Similarly, Spain had roughly the same decline in GDP as Italy, but employment in Italy dropped by only 2 percent, while employment in Spain fell by 11 percent. Indeed, in Bulgaria, Ireland, and Spain, Okun's relationship between output and employment seems to have shifted since 2008, with large employment losses relative to GDP declines (Figure 3.2A). This contrasts with other countries, for which the relationship does not seem to have changed much (Figure 3.2B).[2]

This chapter aims to explain why employment growth in some countries has been so dismal. To this end, it compares employment growth between 2008 and 2011 in 23 European Union countries.[3,4] The focus is on employment growth differences for the entire three-year period rather than in individual years, to better highlight the structural factors that may have played a role in these differences. The key findings are that

- Corporate restoration of profits[5] after a precrisis borrowing binge has been a key factor behind the dismal employment performance in a number of countries, and

- There is a tradeoff between wage adjustment and employment losses, and in some countries—particularly those with dual labor markets—employment losses would have been smaller if wages had adjusted more.

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[2] Whereas Okun's Law traditionally focuses on the relationship between economic growth and *unemployment*, this study focuses on the relationship between economic growth and *employment*—which is not affected by changes in labor force participation. See Ball, Leigh, and Loungani (2013) for a discussion of the relationship between cyclical unemployment (i.e., the deviation of unemployment from the nonaccelerating inflation rate of unemployment) and the output gap.

[3] The analysis ends in 2011 because profit and balance sheet data for the nonfinancial corporate sector—which are an important part of this study—were not yet available for most countries for 2012. This study includes all European Union members with the exception of Cyprus, Luxembourg, Malta, and Romania. Romania has been excluded because of data problems: between 2008 and 2011, total employment declined by only 2½ percent, a number that does not seem consistent with the sharp drop in the number of employees (12 percent). Bulgaria is also excluded in parts of the chapter because of data problems: the wage bill and wage share in 2007 seem to have been underestimated in the national accounts, probably reflecting the large size of the informal economy. The underestimation of the wage bill (an important component of household income) is evident in the very negative household saving rates in that year (−33 percent of disposable income; −17 percent of GDP).

[4] The data on corporate profits and debt are from the European Central Bank's Integrated Economic and Financial Accounts by Institutional Sector (http://sdw.ecb.europa.eu/reports.do?node=1000002340_ALLPDF). The data were accessed through Haver Analytics.

[5] In this chapter, the profit share is defined as the share of the gross operating surplus in gross value added, where the gross operating surplus is gross value added minus employee compensation.
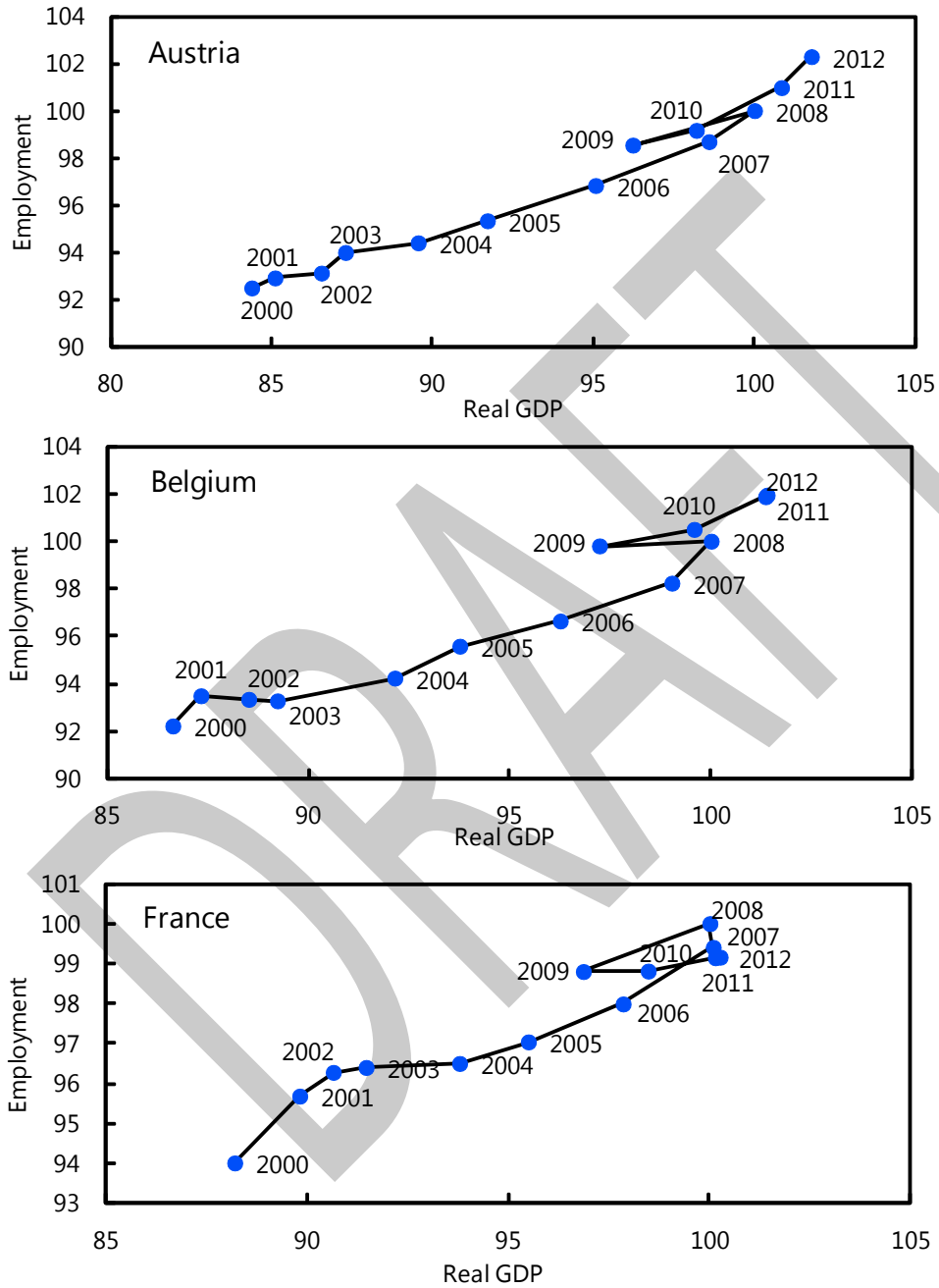
Figure 3.2A. Real GDP and Employment: Where Okun's Law Has Not Held Up
(2008=100)
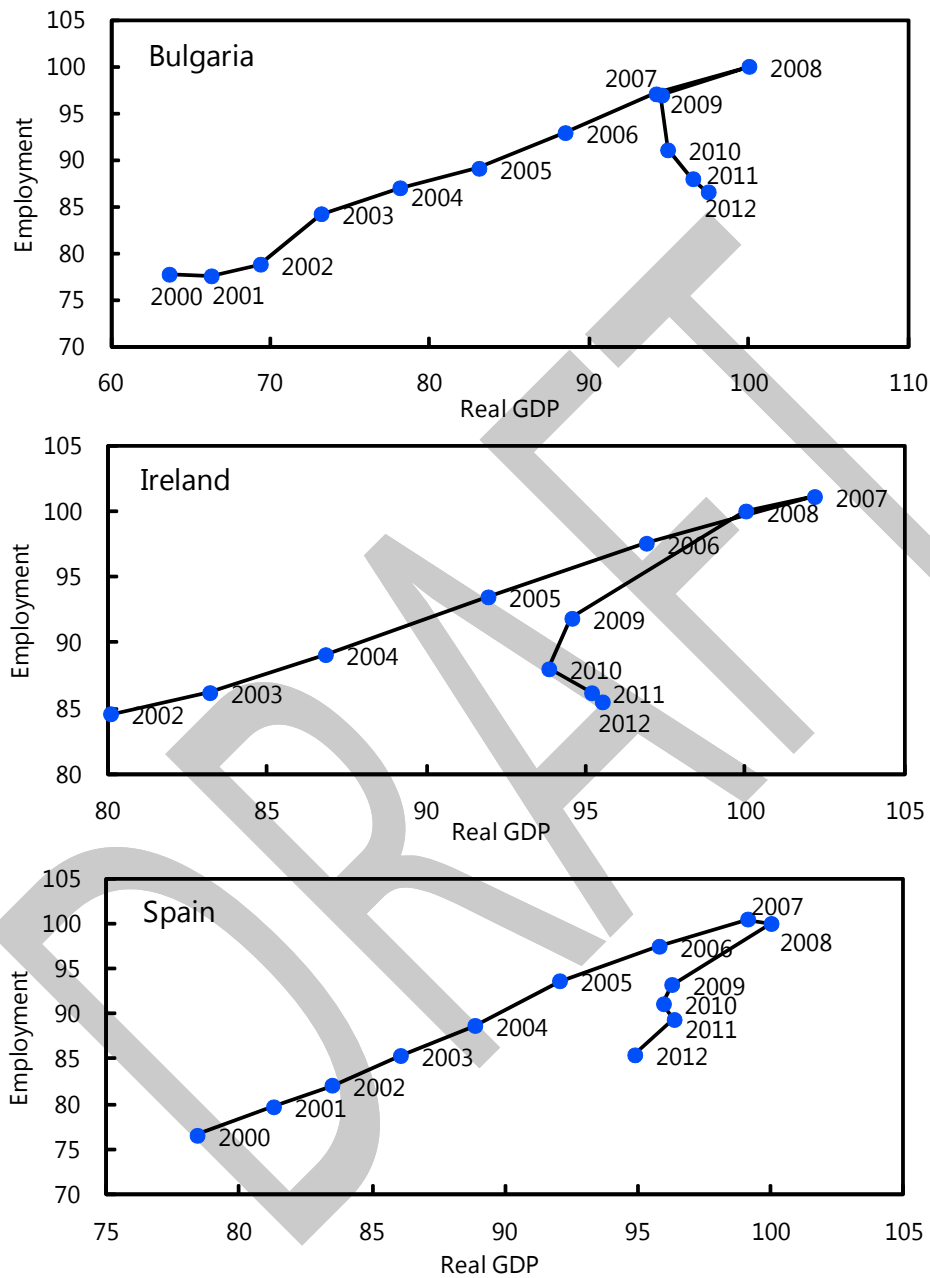
Source: IMF, World Economic Outlook database.

Figure 3.2B. Real GDP and Employment: Where Okun's Law Has Held Up
(2008=100)

Source: IMF, World Economic Outlook database.

Indeed, corporate debt[6] increased sharply in a number of countries during the precrisis boom years, often accompanied by an erosion of profitability. When the crisis hit, firms in these countries tried to address the debt overhang by cutting back investment and raising corporate profitability and saving—by closing down loss-making production capacity and by reducing the wage bill. The latter, accomplished through reductions in wages or employment, accounted for a large share of the improvements in profit shares during the 2008–11 period, as indicated by a strong negative correlation between changes in the profit share and employment and output growth: profit shares increased most in countries with the largest drop in employment and output. By contrast, those economies that saw more moderate declines in GDP and employment—or even an increase—in general saw a decline in their profit shares.

The adjustment through employment, rather than through wages, was especially pronounced in countries with higher degrees of labor market duality. In these countries, wage adjustment has tended to be more limited, reflecting the strong position of insiders. Much of the increase in corporate profitability—the reduction in the wage share—has been the result of a reduction in employment rather than a reduction in average wages.

Literature Review

This chapter combines the findings of several strands of literature:

- Financial shocks can affect employment through channels that go beyond the impact of output declines. IMF (2010), in a study of output and unemployment dynamics in advanced economies during the Great Recession, shows that countries with similar output declines often had markedly different changes in unemployment. It finds that "during recessions, financial crises, large house price busts, and other sector shocks raise unemployment beyond the level predicted by Okun's law" (IMF, 2010, p. 69). Reinhart and Rogoff (2009) find that in the aftermath of banking crises, the duration of unemployment increases (averaging more than four years) is considerably longer than that of output declines (averaging roughly two years).

- Corporate debt overhangs can affect output and employment. Lamont (1995) argues that during economic downturns, funding pressures may force corporates to repair their balance sheets, which affects their hiring and firing decisions. The employment impact of a given output shock may thus critically depend on the corporate sector's balance sheet, resulting in potentially very different labor market adjustments. In a similar vein, Koo (2008) suggests that corporate balance sheet repair was a fundamental driver of Japan's prolonged recession of 1991–2005. Banco de Espana (2013) finds that since 2008, Spanish firms with higher starting levels of debt going into the crisis have cut investment and employment more sharply than those with lower debt.

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[6] Corporate debt is calculated from the European Central Bank's Integrated Economic and Financial Accounts balance sheet data as the sum of two liabilities: securities other than shares, and loans.

Figure 3.3. Debt of the Nonfinancial Corporate Sector, 2008 versus 2003
(Percent of GDP)
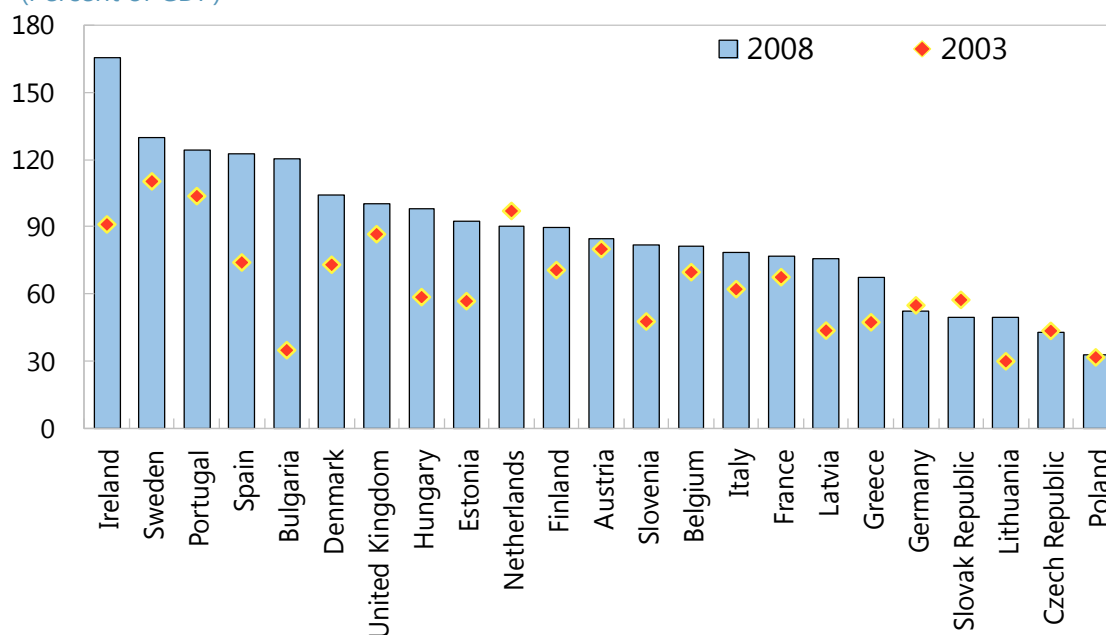
Source: Haver Analytics.
Note: Debt of the nonfinancial corporate sector is the sum of the stock of securities (other than shares) and the stock of loans.

- Labor market duality can lead to excessive labor shedding during downturns. OECD (2012) shows that a higher prevalence of temporary contracts is associated with more labor shedding during economic downturns.[7] It links the prevalence of temporary contracts to the severity of employment protection, a finding also reported in Cahuc, Charlot, and Malherbet (2012), Boeri (2011), and IMF (2010).

Corporate Balance Sheet Repair and the Precrisis Borrowing Binge

The strong increase in corporate profitability since 2008 in some countries reflects a debt overhang that resulted from a borrowing binge during the precrisis boom years. Between 2003 and 2008, debt of the nonfinancial corporate sector increased sharply (Figure 3.3). Debt increases were particularly large in Bulgaria, Ireland, and Spain. High indebtedness has in many cases forced firms to cut investment and employment, thereby boosting profits.

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[7] OECD (2012) tries to explain the differences in resilience exhibited by labor markets during economic downturns. Its analysis is built upon the literature searching for underlying determinants of structural unemployment, including, among others, OECD (2006) and Bassanini and Duval (2006a, 2006b, 2009). It finds that structural policies and institutions matter for labor market resilience, and that those structural policies and institutions that are conducive to good structural labor market outcomes are also good for labor market resilience.

Figure 3.4. Nonfinancial Corporate Sector: Saving-Investment Balance, 2003 and 2008
(Percent of GDP)
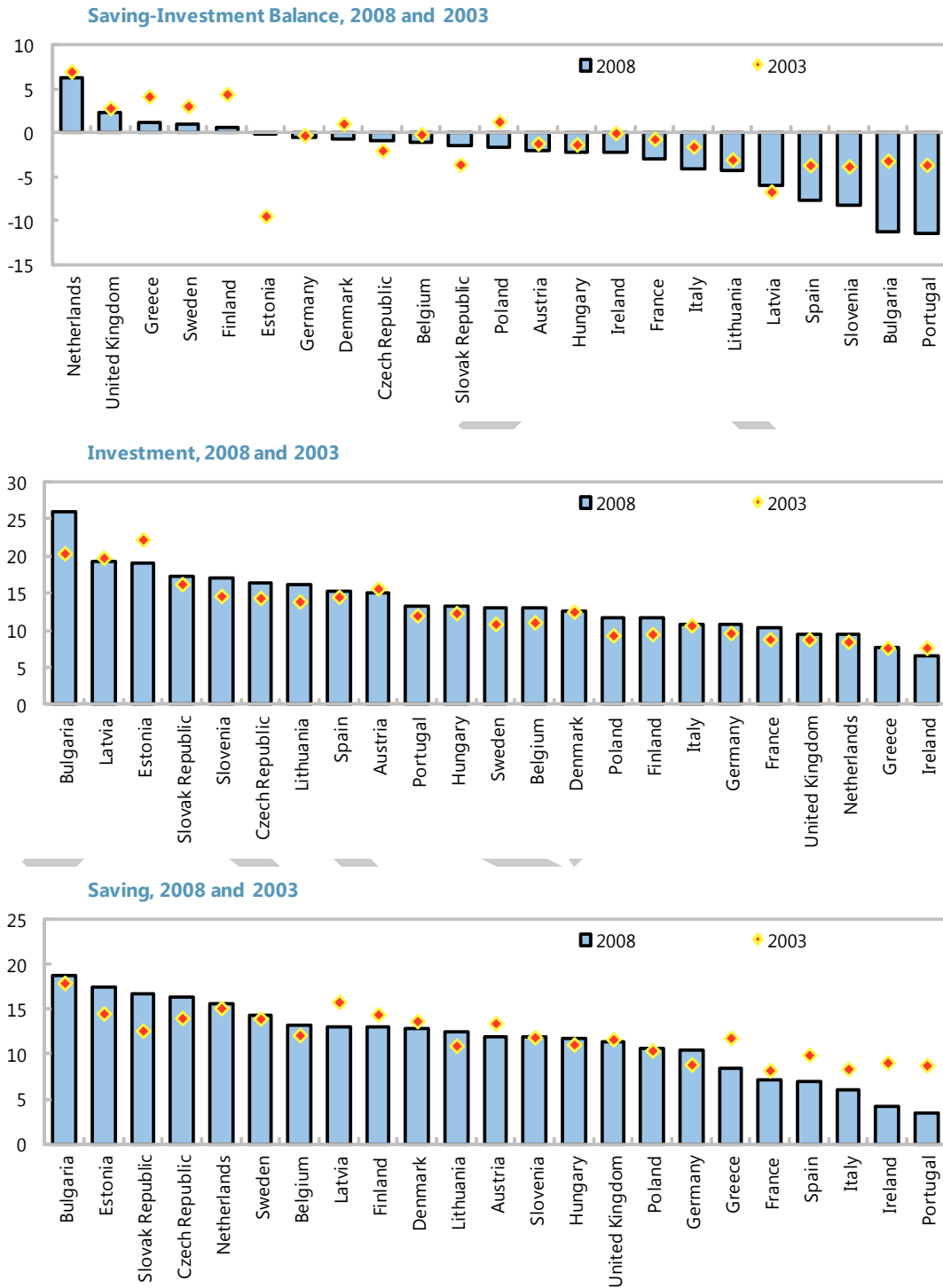
Source: Haver Analytics.

The debt increase was the counterpart to a sharp deterioration in the nonfinancial corporate sector's saving-investment balance. By 2008, corporate investment exceeded saving by more than 5 percent of GDP in Latvia, Spain, Slovenia, Bulgaria, and Portugal (Figure 3.4). The large gap made firms vulnerable to a sudden deterioration of financing conditions. A saving-investment gap did not exist in all countries though: in the Netherlands, the United Kingdom, Sweden, and Finland, corporate saving exceeded investment.

The deteriorating saving-investment balance reflected both rising investment, and—in about half of the countries—a decline in corporate saving, that is, retained profits (Figure 3.4). The decline in corporate saving probably was the result of rising wage costs, driven by tightening labor markets. The relative importance of these factors differed across countries (Figure 3.5): in Portugal, the increase was largely the result of a drop in saving, whereas in countries such as Slovenia and Poland, it was mainly due to an increase in investment.

These developments did not occur at the same scale in all countries. Indeed, in some countries, such as the Czech Republic, Germany, the Netherlands, Poland, and the Slovak Republic, there was little or no increase in corporate debt, and the financing gap remained very small—or positive.

Once the global crisis hit and capital flows dropped, the large saving shortfalls were no longer sustainable, and during the next few years, firms managed to reduce the gaps substantially.[8] Between 2008 and 2011, corporate saving-investment balances improved in almost all countries (Figure 3.6, top panel). The improvement was most dramatic in Latvia, Lithuania, and Spain. By 2011, the saving-investment balance of the nonfinancial corporate sector had become positive in all but six countries (Figure 3.7).

Part of the improvement in the saving-investment balance resulted from a drop in investment. The drop in investment was most severe in emerging Europe (Figure 3.6, bottom panel), likely reflecting a combination of the unwinding of a stronger precrisis investment boom and more severe financing pressures—particularly for countries that were not part of the euro area.[9]

Another contribution came from the improvement in corporate saving—the result of an increase in corporate profitability. Corporate saving increased in most countries, with particularly large increases in Latvia, Lithuania, Spain, and Ireland.

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[8] Emerging Europe experienced a sudden stop of private capital inflows in late 2008 after the default of Lehman Brothers. In the euro area periphery, the slowdown of private capital inflows was more gradual and partly linked to the growing weakness of the euro area banking sector.

[9] For a discussion of the experience of emerging Europe in the global financial and economic crisis, see Bakker and Klingen (2012).

**Figure 3.5. Nonfinancial Corporate Sector: Change in
Saving-Investment Balance, 2003–08**
(As share of GDP, percentage points)

Change in Saving-Investment Balance

Change in Saving

Change in Investment

Source: Haver Analytics.

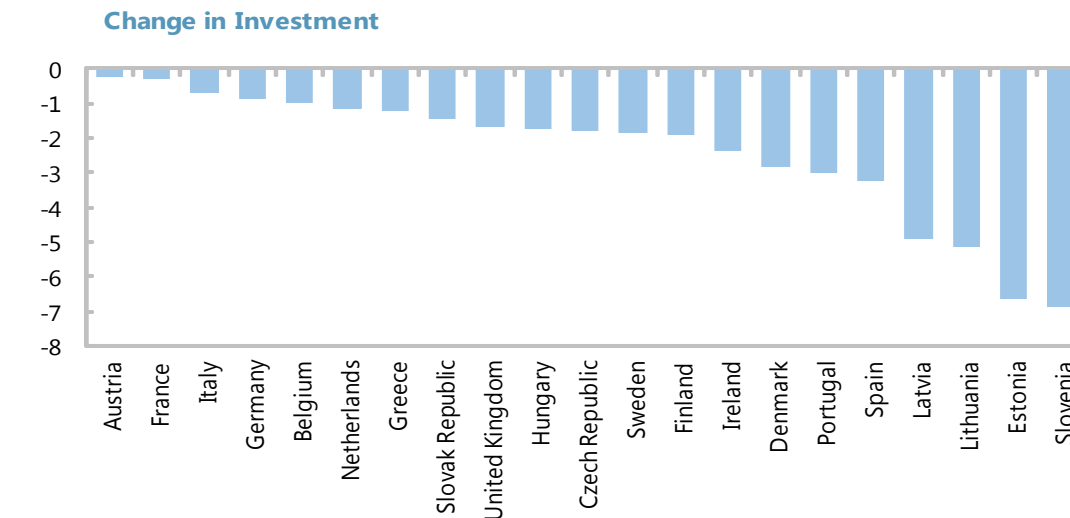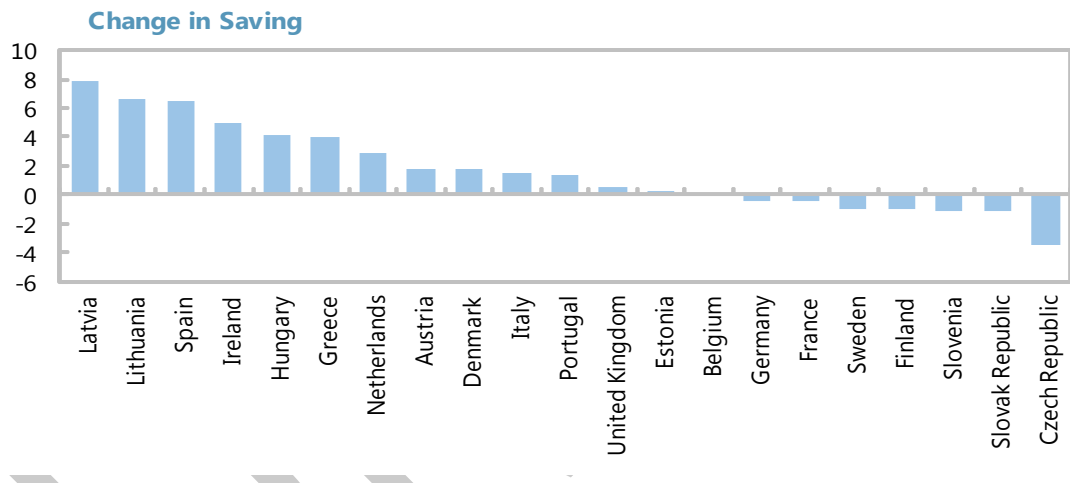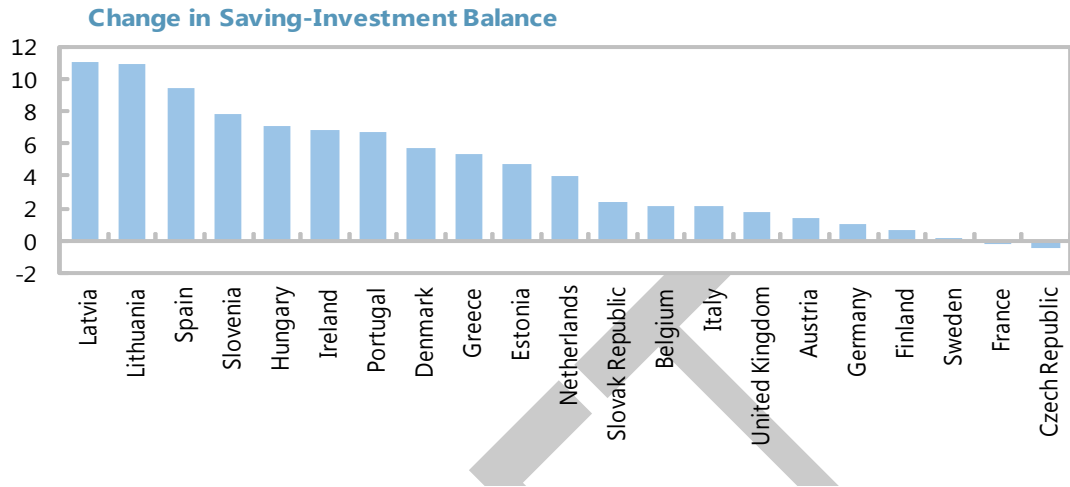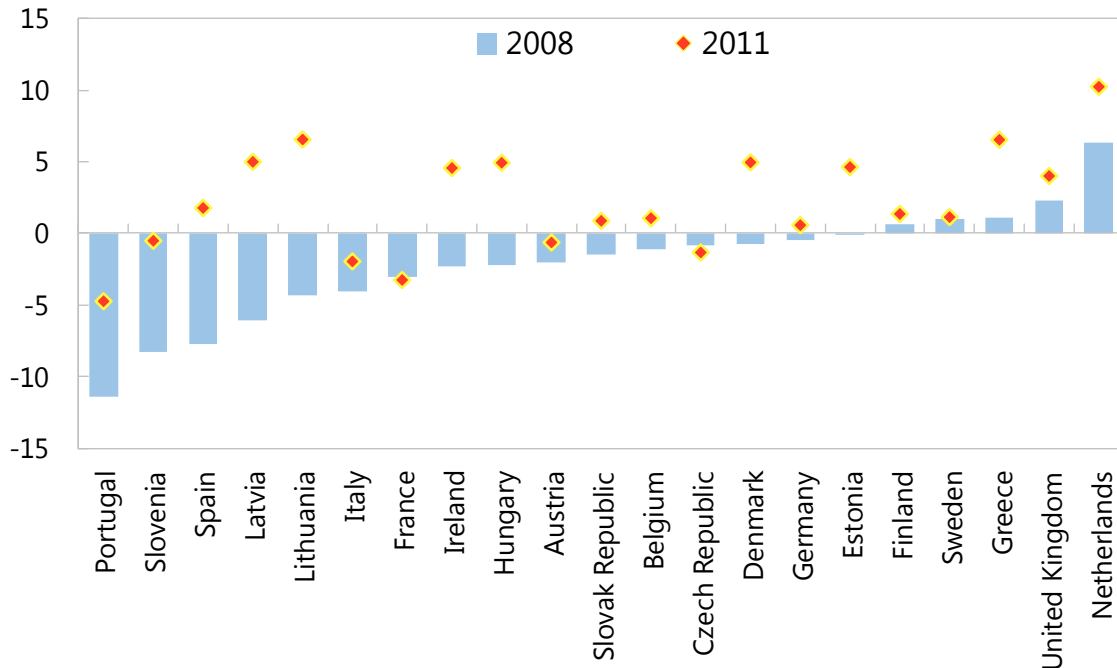**Figure 3.6. Nonfinancial Corporate Sector: Change in Saving-Investment Balance, 2008−11**

(As share of GDP, percentage points)

Change in Saving-Investment Balance

Change in Saving

Change in Investment

Source: Haver Analytics.

Figure 3.7. Nonfinancial Corporate Sector: Saving-Investment Balance, 2011 vs. 2008
(Percent of GDP)

Source: Haver Analytics

The Impact of Corporate Restructuring on Output and Employment

Higher corporate saving was the result of an increase in the profit share, and a corresponding drop in the wage share. Countries that saw sharp increases in their corporate-saving-to-GDP ratios all had large increases in their profit shares (Figure 3.8).

The large differences in the extent to which corporate profit shares increased between 2008 and 2011 are striking. Profit shares increased sharply in the Baltic countries, Ireland, and Spain. By contrast, they declined in the Netherlands, Germany, and other core euro area countries.

These differences likely reflect varying pressures to improve corporate profitability across countries. Pressures to increase profitability were particularly severe in countries in which corporate debt had increased substantially, or in which profitability had eroded during the boom years. Countries in which the saving shortfalls were small, profitability had not eroded, or corporate debt had not increased much, experienced much less pressure to increase profits—profits often declined because firms kept their labor forces on board despite drops in output.

**Figure 3.8. Nonfinancial Corporate Sector:
Change in Profit Share versus Change in Saving, 2008–11**

$$y = 0.549x + 1.1415$$
$$R^2 = 0.5817$$
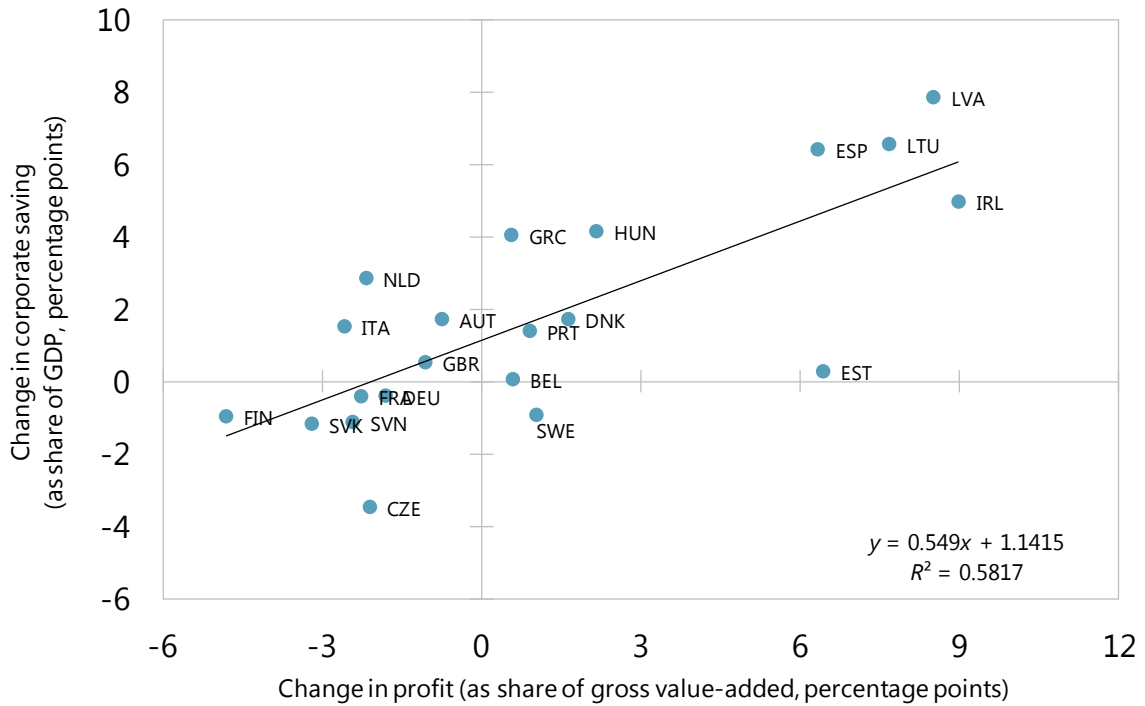
Sources: Haver Analytics; and IMF, World Economic Outlook database.

**Figure 3.9. Change in Profit Share of Nonfinancial Corporate Sector
versus Real GDP Growth, 2008–11**

$$y = -0.6006x - 2.3754$$
$$R^2 = 0.3025$$
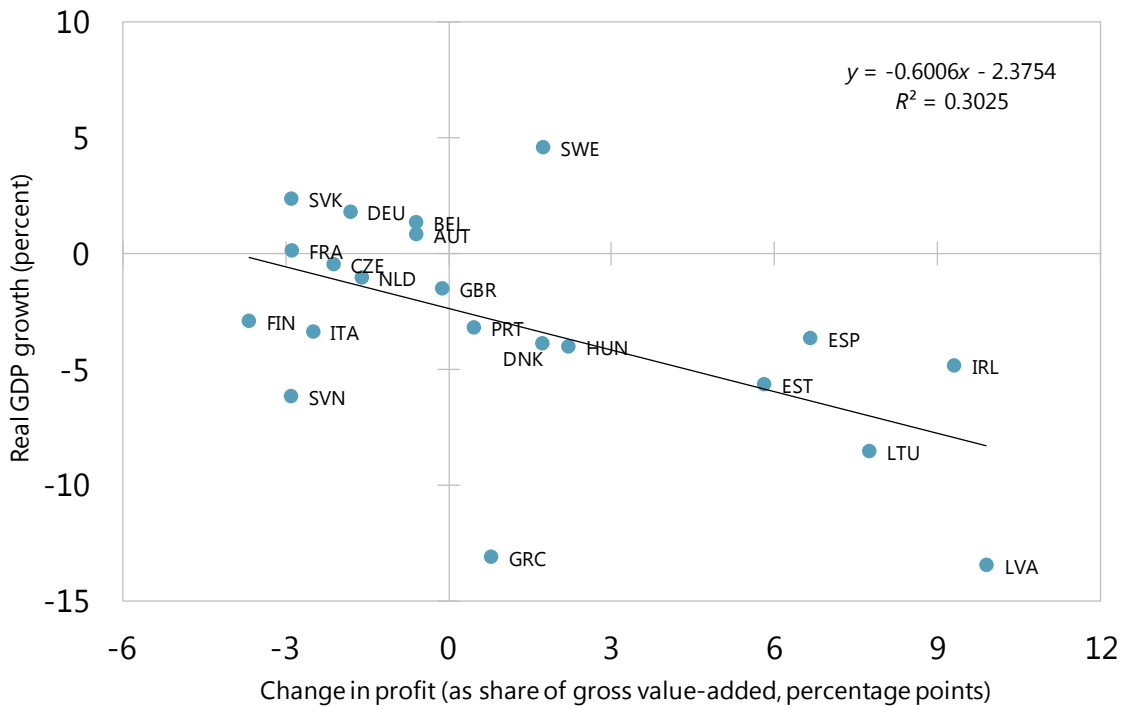
Sources: Haver Analytics; and IMF, World Economic Outlook database.

Figure 3.10. Profit Share Increase since 2008 versus Precrisis Balance Sheet Deterioration

Change in debt, 2003-08 (percentage points, as share of GDP)

Source: Haver Analytics.

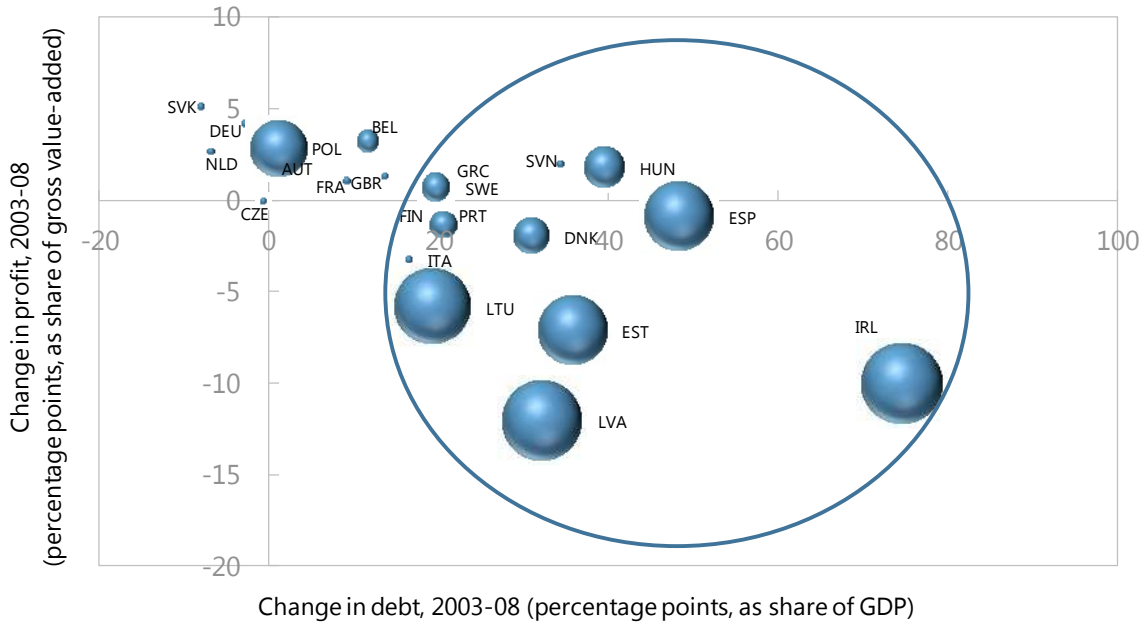Note: Bubble size indicates the profit share increase in 2008–11. For instance, Latvia has the largest bubble because the profit share of its nonfinancial corporate sector increased by 10 percentage points between 2008 and 2011, highest among all countries. The bubble size is set to 0.05 (the smallest bubbles) for countries whose profit shares declined between 2008 and 2011.

The increase in profit share since 2008 is linked to the precrisis deterioration in profits and increase in corporate debt. Countries in which profits had fallen sharply during the boom years saw a rebound in profits (Figure 3.9), as did countries that had experienced large increases in corporate debt. It is noteworthy that the sharpest increases in corporate profitability occurred in countries in which debt had increased and profitability had fallen during the precrisis years (Figure 3.10, bottom right quadrant).

Equally striking is the negative relationship between the increase in profit share and GDP growth (Figure 3.11). Profit shares increased sharply in several countries with large output declines, whereas they declined in a number of core euro area countries in which output increased. This suggests that—for this particular period—causality did not go from GDP growth to profits, but rather that corporate restructuring (which boosted corporate profits) had a negative impact on GDP.

Profit share increases are associated with poor employment outcomes (Figure 3.12). Countries in which the profit share increased sharply have seen significant losses in employment, whereas countries in which employment s held up well have generally seen a decline in profit share during this period.

Figure 3.11. Change in Profit Share of Nonfinancial Corporate Sector versus Real GDP Growth, 2008–11
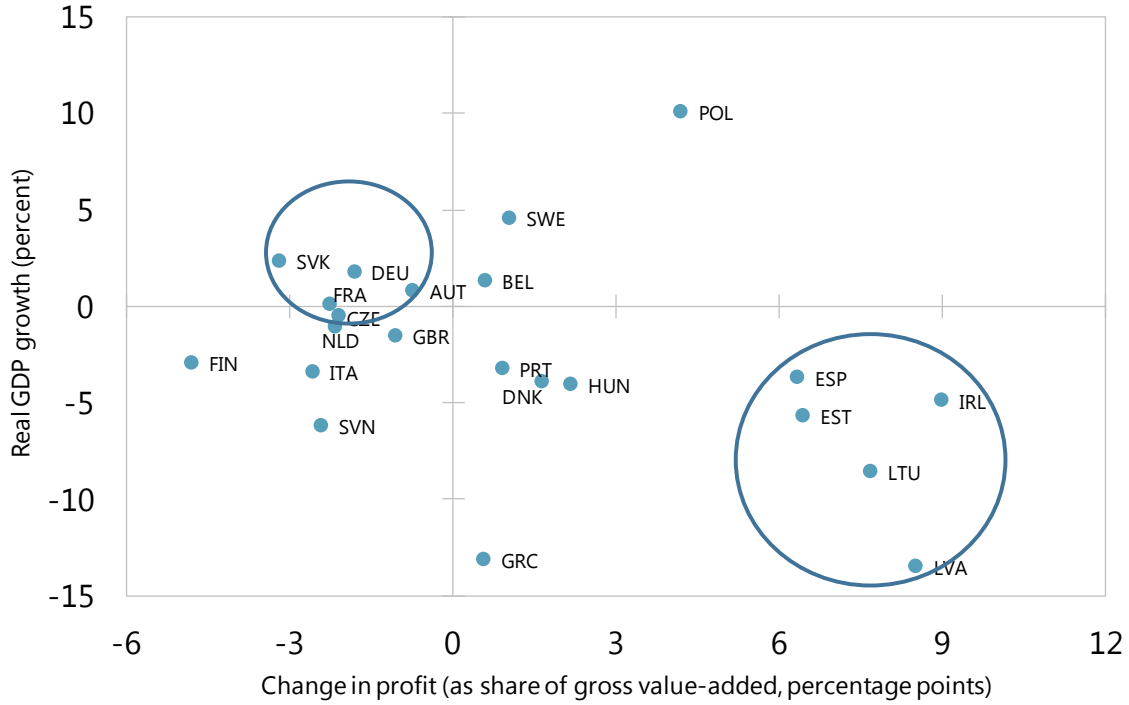
Sources: Haver Analytics; and IMF, World Economic Outlook database.

Figure 3.12. Change in Profit Share of Nonfinancial Corporate Sector versus Employment Growth, 2008–11

$y = -0.8232x - 3.0334$
$R^2 = 0.4539$

Change in profit (as share of gross value added, percentage points)
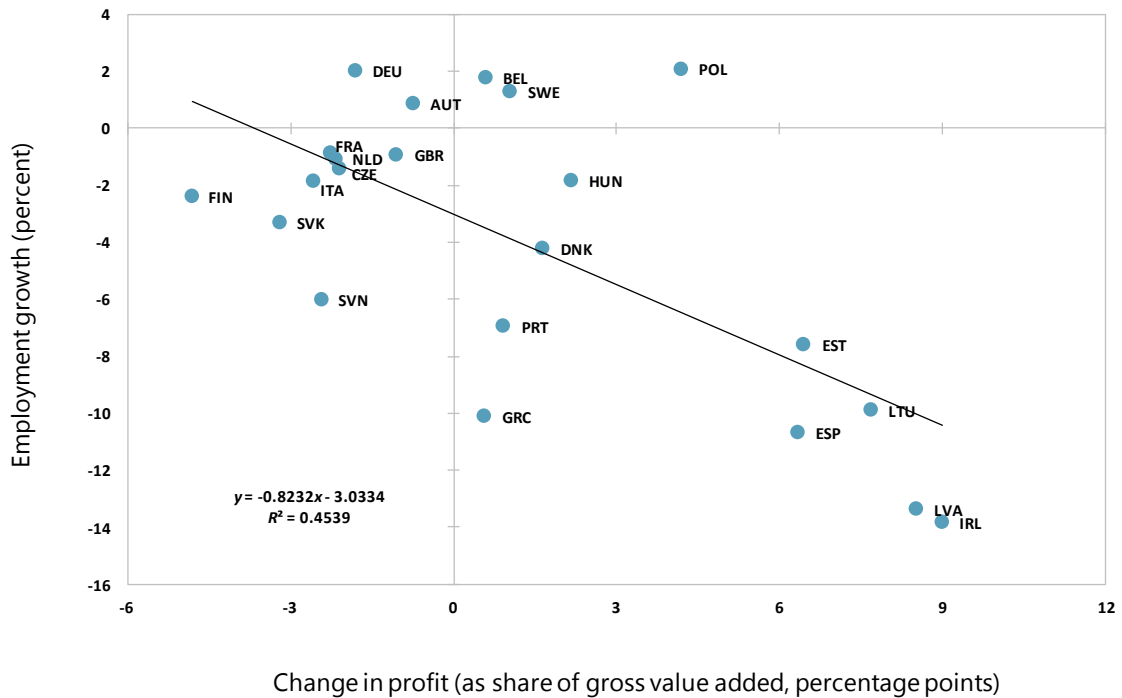
Sources: Haver Analytics; and IMF, World Economic Outlook database.

Figure 3.13. Change in Profit Share of Nonfinancial Corporate Sector versus Labor Productivity Growth, 2008–11

$y = 0.4032x + 1.1553$
$R^2 = 0.2204$
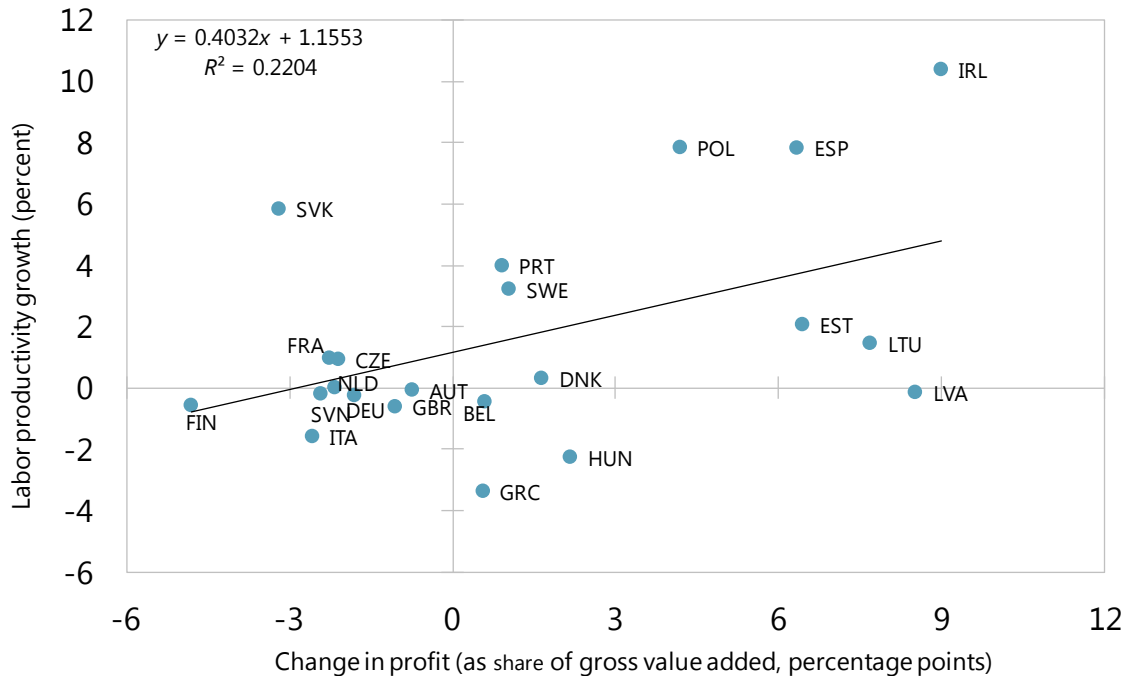
Sources: Haver Analytics; IMF, World Economic Outlook database; and IMF staff calculations.

Poorer employment outcomes reflect, in part, that countries with larger increases in profit shares saw bigger output drops and bigger increases in labor productivity (Figure 3.13). The increase in productivity likely indicates restructuring by enterprises to produce the same output with fewer workers. It may also denote a composition effect because sectors with lower labor productivity (including, in particular, the construction sector in some countries) were hit disproportionally by the crisis.[10]

The combination of a sharp increase in labor productivity and a decline in output is strikingly different from the positive relationship observed during normal times. Between 2003 and 2008, faster GDP growth was associated with higher labor productivity growth (Figure 3.14, top panel). Between 2008 and 2011, this relationship broke down, and labor productivity growth was fastest in some of the countries with the largest output declines (Figure 3.14, bottom panel).

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[10]For instance, Central Bank of Ireland (2011) points out that while employment contracted considerably more than predicted by GDP in Ireland, this was partially a compositional effect. Output in the high-profit broad chemical sector increased to 2011 while value added from the low-productivity, employment-intensive construction sector fell over the same period.

Figure 3.14. Real GDP and Labor Productivity Growth
(Percent)

2003–08

$y = 0.6661x - 2.1097$
$R^2 = 0.7487$
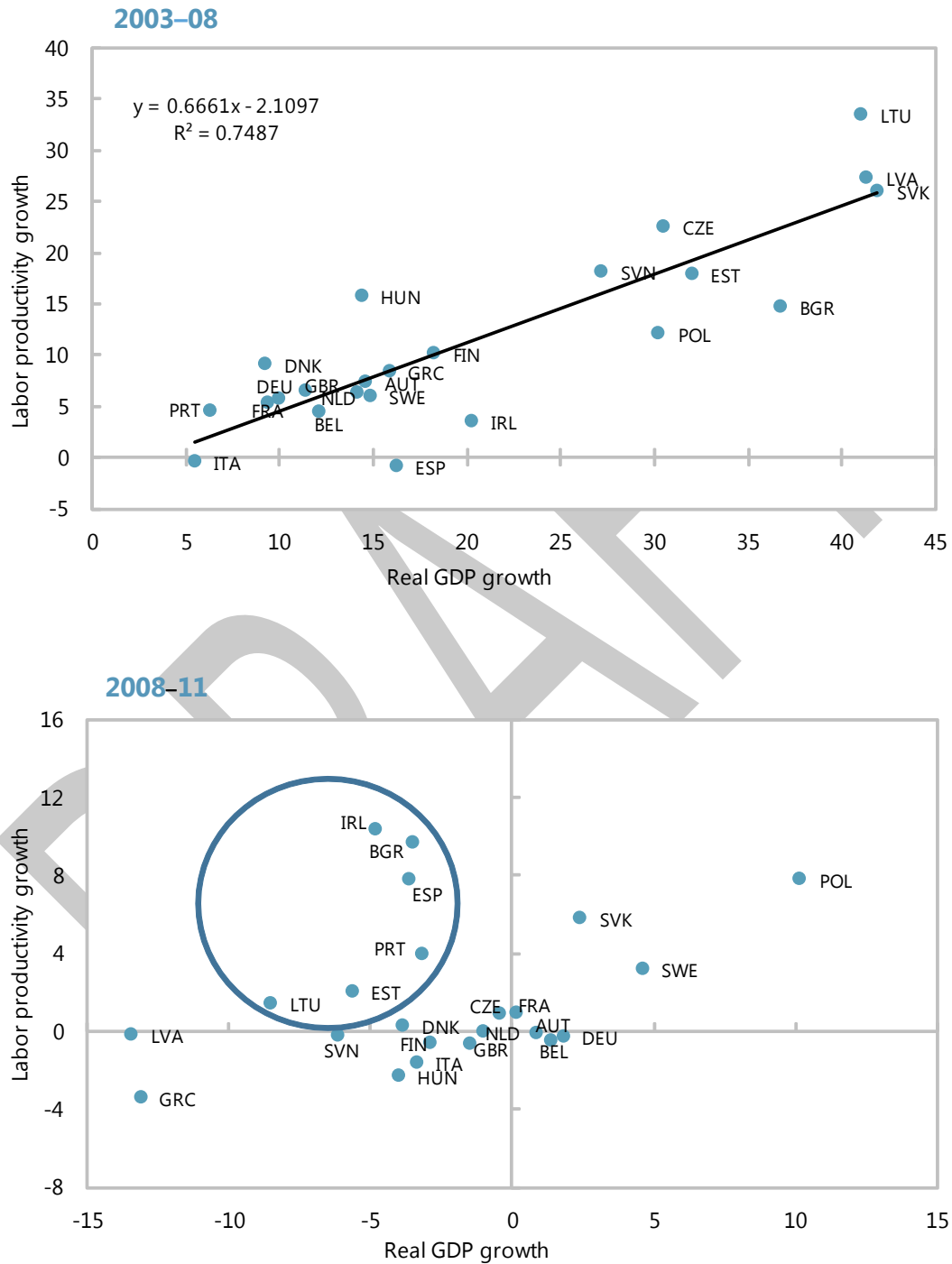
2008–11

Sources: IMF, World Economic Outlook database; and IMF staff calculations.

Figure 3.15. Change in Profit Share of Nonfinancial Corporate Sector versus Employment Growth Not Explained by Real GDP Growth, 2008–11
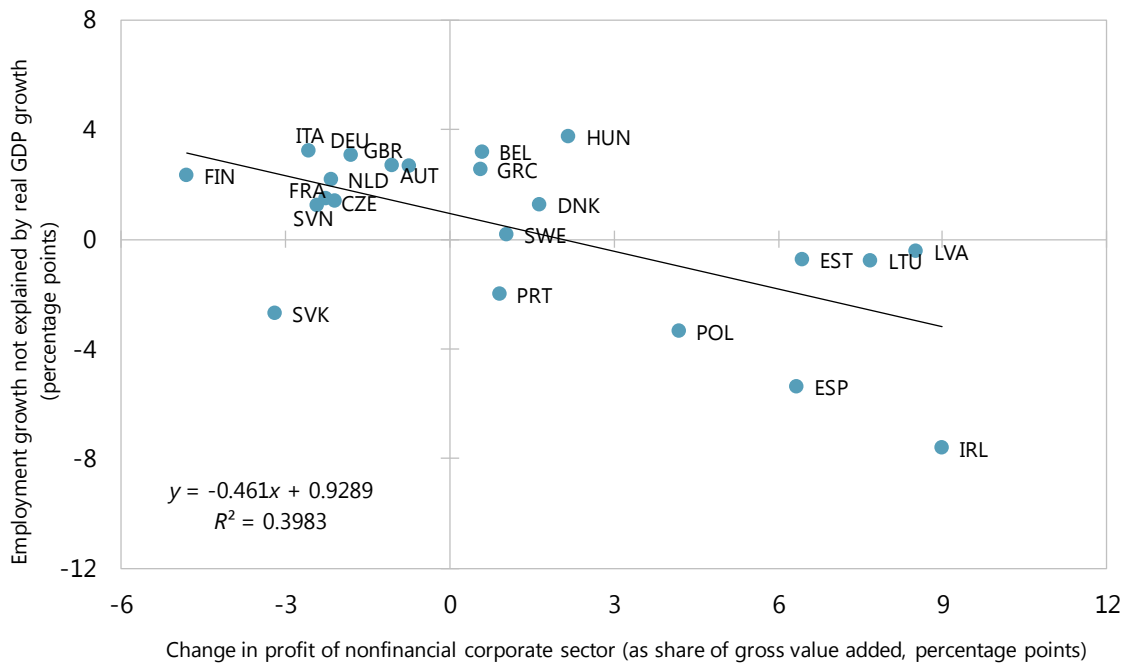
Sources: Haver Analytics; and IMF, World Economic Outlook database.
Note: The sample is slightly different from previous figures because Bulgaria is excluded as the result of missing information.

Changes in profit shares can explain much of the residuals in the GDP–employment growth scatter chart in the top panel of Figure 3.1 (Figure 3.15). The increase in profit share and the residual in the GDP–employment growth scatter chart are strongly correlated; countries that had sharp increases in profit shares had worse employment outcomes than would be expected given their output changes.

The Role of Labor Market Duality

European countries exhibit large differences in the duality of their labor markets. In 2007, almost a third of employment in Spain consisted of temporary contracts, whereas in the Baltics, the share was less than 5 percent (Figure 3.16).

Labor market duality is another likely factor behind the large differences in employment growth. For a given a level of output, increases in profit shares—that is, declines in wage shares—can be brought about through either reductions in employment or reductions in wages. In countries with high degrees of labor market duality—under which insiders are well protected but a significant group of workers are on temporary contracts—much of the adjustment can be expected to occur through employment reductions rather than wage cuts because insiders—who set wages—have little incentive to adjust, while outsiders can easily be fired.

Figure 3.16. Share of Temporary Employment, 2007
(Percent)
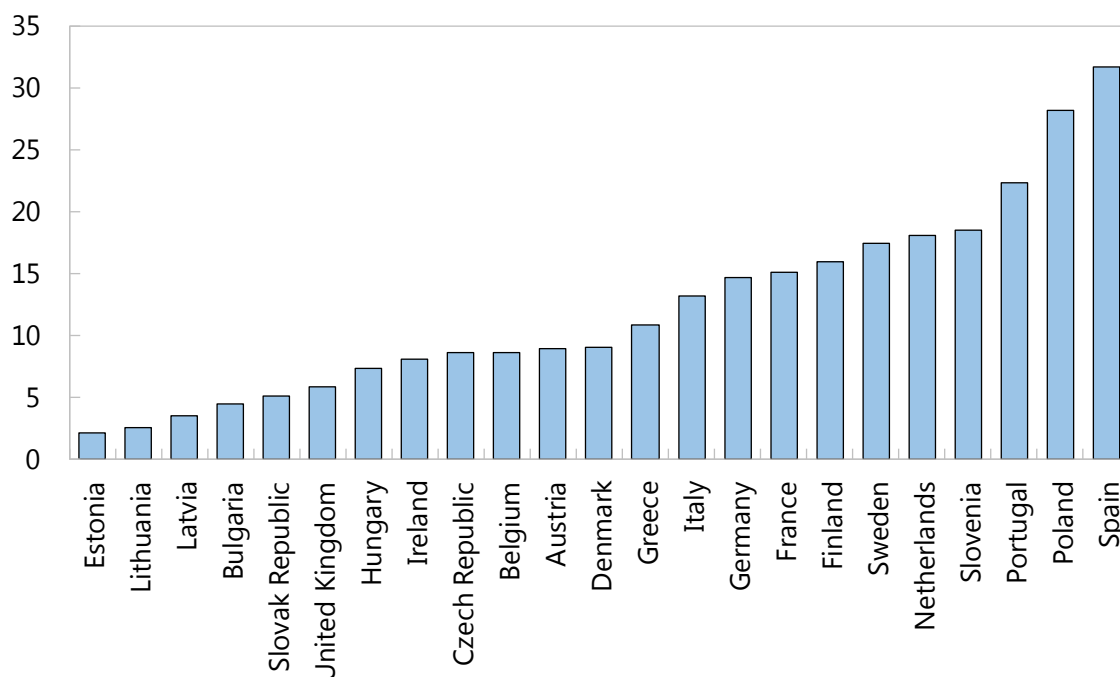
Sources: International Institute of Labor Studies (2012); and Organization for Economic Cooperation and Development Statistics (stats.oecd.org/).

The evidence shows that in countries with high shares of temporary employment, real wage growth is much less sensitive to unemployment changes. The top panel of Figure 3.17 shows the beta coefficients in the regression *real wage growth* = α + β × *unemployment rate$_t$* for the 2000–11 period. In countries on the far left of the figure, real wages adjust relatively strongly in response to unemployment, whereas in countries on the far right, there is very little adjustment.

The bottom panel of Figure 3.17 shows that there is a strong relationship between wage sensitivity and the degree of labor market duality—the higher the share of temporary employment, the less responsive real wages are to unemployment rates.

To the extent that reductions in firms' wage bills result from firms' efforts to improve profits, larger wage reductions can help mitigate employment losses. The more wages adjust, the smaller are the employment reductions needed to reduce the wage bill. This tradeoff is reflected in the relatively larger employment losses that occur in dual labor markets.

Figure 3.17. Real Wage Sensitivity and Labor Market Duality

Real Wage Sensitivity to Unemployment Rate

Note: Coefficients from regressing real wage growth on unemployment using 2000–11 data, with smaller values indicating stronger real wage declines in response to higher unemployment rates.

Real Wage Sensitivity to Unemployment Rate and Labor Market Duality

$$y = 0.0403x - 0.9124$$
$$R^2 = 0.2371$$
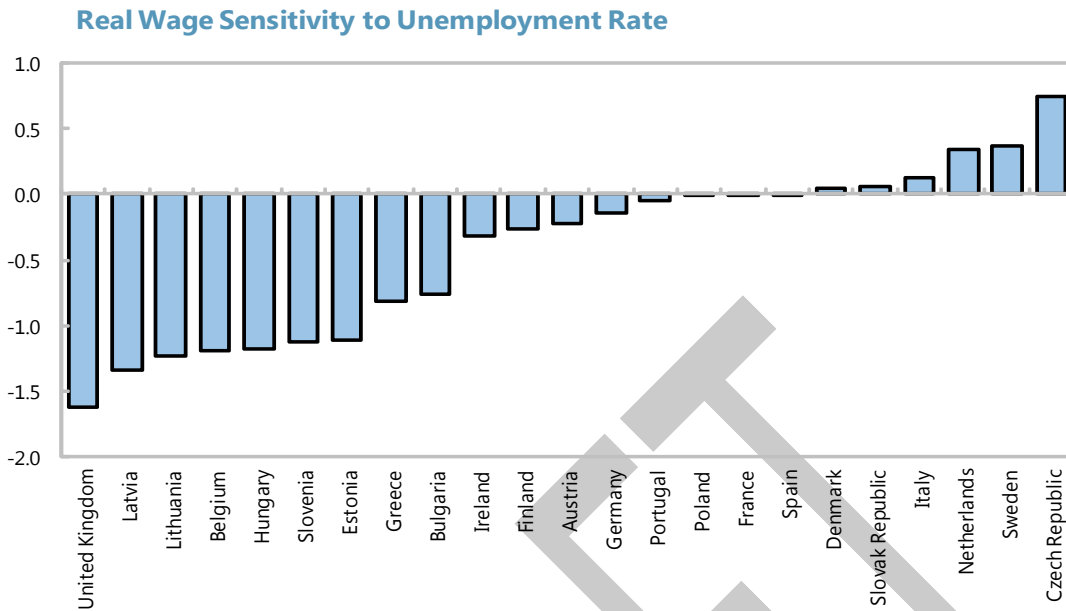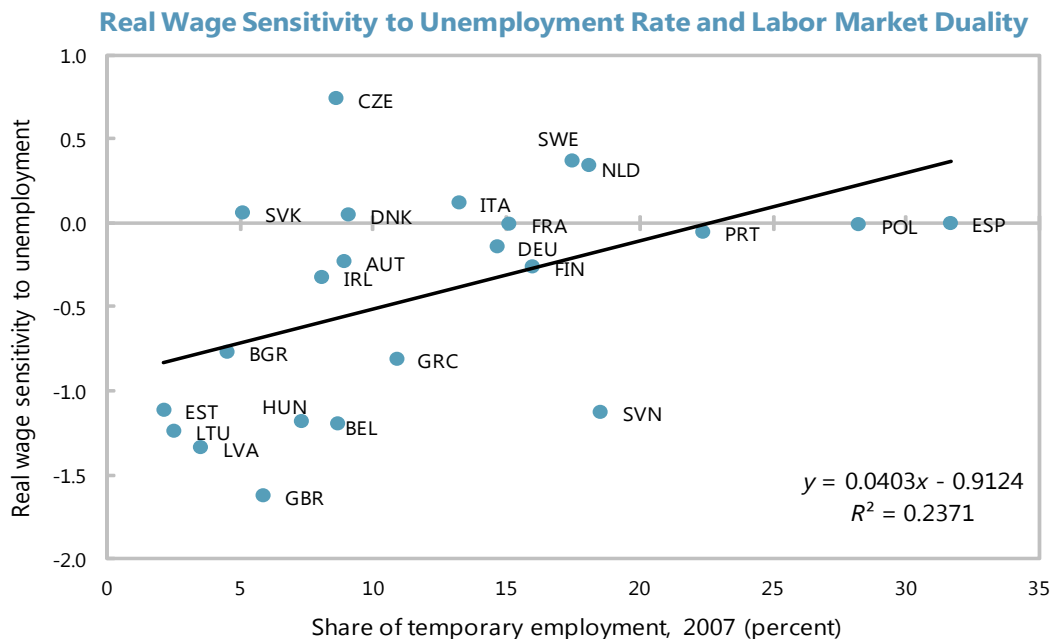
Sources: International Institute of Labor Studies (2012); Organization for Economic Cooperation and Development Statistics (stats.oecd.org/); IMF, World Economic Outlook database; and IMF staff calculations.

Note: Romania is excluded because the relatively small increase in its unemployment rate is not consistent with the sharp drop in employment of employees.

Econometric Analysis

Econometric regression analysis confirms that the three factors discussed so far (real GDP growth, corporate balance sheet repair, and labor market duality) all contributed to the large cross-country differences in employment growth during 2008–11:[11]

- Real GDP growth was the most important factor behind differences in employment growth, contributing to about two-thirds of the cross-country differences (Table 3.1, Columns 1 and 2).

- Profit share increase was the second most important factor. When included in the regression alone, it explained about one-third of the cross-country variation (Table 3.1, Columns 3 and 4); and when added to a regression that also included real GDP growth, it improved the R^2 from 0.64 (Table 3.1, Column 1) to 0.80 (Table 3.1, Column 5). The regression takes into account the fact that the profit share increase may be endogenous by using the precrisis debt increase and profit share decline as instrumental variables.[12]

- Adding the share of temporary employment further improved the fit of the model, raising the R^2 from 0.84 (Table 3.1, Column 6) to 0.89 (Table 3.1, Column 8).[13]

The results are robust to introducing other precrisis imbalance measures into the model. Two often discussed imbalance measures—current account deficits and the size of the construction sector—are considered in the regressions in Table 3.2. When included alone with real GDP growth, the relationship between these two measures (in levels or as precrisis changes) and employment growth during the 2008–11 period was indeed strong. But when they are added to the model (Column 8 of Table 3.1), they are not statistically significant and do not seem to bring any extra explanatory power, while the original regressors all remain highly significant. Admittedly, the various precrisis imbalance measures tend be correlated. Countries in which corporate debt increased rapidly during the boom years often had high and widening current account deficits as well.[14]

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[11] Detailed data information is provided in Tables 3A.1 and 3A.2 in the appendix to this chapter.

[12] Both instrumental variables have strong links with the profit share change during the crisis period, as shown in Table 3.3.

[13] Column 8 includes a dummy variable for the Slovak Republic because it is an outlier in that its share of temporary workers did not seem to have a significant impact on its employment losses during the sample period. The results are robust to dropping any other single country from the sample.

[14] By contrast, the correlation between the size of the construction sector and the buildup of corporate debt was very low.

Table 3.1. Determinants of Employment Growth during 2008–11

Dependent variable: Employment growth, 2008–11	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	OLS	OLS	IV	IV	IV	IV	IV	IV
Real GDP growth, 2008–11 (percent)	0.757*** (0.126)	0.783*** (0.129)			0.553*** (0.109)	0.571*** (0.102)	0.615*** (0.113)	0.681*** (0.096)
Nonfinancial corporate profit change[1] (percentage points, as share of gross value added)			−1.281*** (0.282)	−1.386*** (0.307)	−0.669*** (0.175)	−0.755*** (0.167)	−0.682*** (0.169)	−0.812*** (0.143)
Share of temporary employment in 2007 (percent)							−0.110 (0.067)	−0.182*** (0.059)
Dummy variable for the Slovak Republic		−3.242 (3.218)		−5.353 (4.653)		−5.483** (2.316)		−7.710*** (2.103)
Constant	−2.119*** (0.727)	−1.906** (0.757)	−2.332** (0.962)	−1.952* (1.055)	−1.756*** (0.557)	−1.349** (0.546)	−0.203 (1.086)	1.377 (0.997)
Observations	22	22	22	22	22	22	22	22
R^2	0.643	0.661	0.344	0.323	0.807	0.841	0.830	0.890

Note: IV = instrumented variables; OLS = ordinary least squares. Standard errors are in parentheses. Regressions in Columns 2, 4, and 6 include a dummy variable for the Slovak Republic. The inclusion of the dummy is not essential for the regressions in Columns 2, 4, and 6, but allows consistent comparisons with the regression in Column 8.
[1]Instrumented by the debt increase and profit share decline during 2003-08.
*, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

**Table 3.2. Check on Other Precrisis Imbalance Measures**

Dependent variable: Employment growth, 2008–11	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Current account deficits, 2008 (percent of GDP)	−0.286**	0.081							0.066	
	(0.106)	(0.106)							(0.113)	
Increase of current account deficits, 2003–08			−0.432**	0.009						−0.019
(percentage points, as share of GDP)			(0.182)	(0.171)						(0.172)
Size of construction sector (percent of gross value added)					−0.890***	0.304			0.245	
					(0.260)	(0.351)			(0.351)	
Increase in size of construction sector, 2003–08							−0.475	0.524		0.528
(percentage points, as share of gross value added)							(0.416)	(0.365)		(0.374)
Real GDP growth, 2008–11 (percent)	0.536***	0.751***	0.615***	0.686***	0.630***	0.731***	0.728***	0.715***	0.778***	0.706***
	(0.137)	(0.126)	(0.128)	(0.122)	(0.108)	(0.113)	(0.128)	(0.098)	(0.143)	(0.125)
Nonfinancial corporate profit change[1]		−0.855***		−0.814***		−0.904***		−0.867***	−0.919***	−0.863***
(percentage points, as share of gross value added)		(0.177)		(0.160)		(0.214)		(0.159)	(0.232)	(0.174)
Share of temporary employment in 2007 (percent)		−0.202***		−0.184**		−0.217**		−0.178***	−0.227**	−0.173**
		(0.068)		(0.079)		(0.077)		(0.060)	(0.084)	(0.080)
Dummy variable for the Slovak Republic		−8.645***		−7.749***		−9.314***		−10.274***	−9.760**	−10.215***
		(2.612)		(2.321)		(3.057)		(2.863)	(3.399)	(3.039)
Constant	−1.570**	1.593	−1.601**	1.407	4.258**	−0.158	−1.641*	0.998	0.312	0.934
	(0.667)	(1.102)	(0.690)	(1.185)	(1.950)	(2.035)	(0.834)	(1.040)	(2.104)	(1.223)
Observations	22	22	22	22	22	22	22	22	22	22
R^2	0.741	0.885	0.725	0.889	0.779	0.875	0.666	0.892	0.875	0.893

Note: Standard errors are in parentheses.
[1]Instrumented by the debt increase and profit share decline during 2003–08.
*, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Figure 3.18. Decomposition of Employment Growth, 2008–11
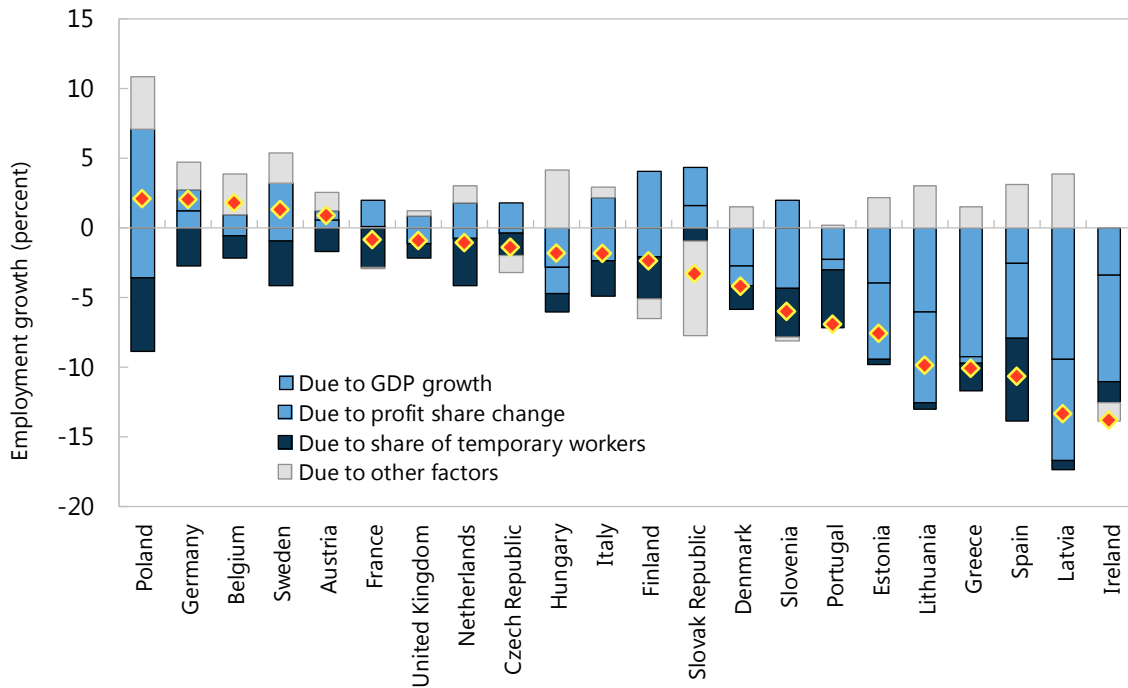
Sources: Haver Analytics; IMF, World Economic Outlook database; and IMF staff estimates.
Note: Decomposition is based on the regression in Column 8 of Table 3.1.

An analysis of the quantitative contribution of each of the three factors confirms the important role of the increase in corporate profits in the large drop in employment that occurred in a number of countries. Figure 3.18 shows the quantitative contribution of each of the factors to employment growth, using the results of the regression analysis. It shows that among all the countries in which employment dropped by more than 7 percent, with the notable exception of Greece,[15] the increase in profits accounted for more than 50 percent of job losses.[16] For example, in Latvia, where employment decreased by 13 percent during 2008–11, about 7 percentage points were accounted for by the increase in the profit share.

Labor market duality contributed significantly to employment reductions in a few countries as well. Among the countries with employment declines, the contribution of labor market duality exceeded 4 percentage points in Spain, Poland, and Portugal.

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[15] In Greece, which did not have a corporate borrowing boom before the crisis, the drop in employment largely seems to reflect the drop in output.

[16] The impact of profit share increases on employment is even larger if the impact of profit share increases on GDP growth is taken into account. In countries in which profit shares increased sharply, GDP growth was very negative (Figure 3.11).

Table 3.3. Explanation of Nonfinancial Corporate Profit Share Change during 2008–11

Dependent variable: Profit share change 2008–11	(1)	(2)	(3)
Debt increase 2003–08	0.138***		0.064
	(0.036)		(0.040)
Profit share change 2003–08		−0.660***	−0.488***
		(0.135)	(0.170)
Constant	−1.422	0.608	−0.470
	(0.996)	(0.634)	(0.915)
Observations	22	22	22
R^2	0.422	0.544	0.597

Note: Standard errors are in parentheses.
*, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

The change in profit share of the nonfinancial corporate sector during 2008–11 is closely linked to the precrisis profitability decline and debt increase (Table 3.3). Countries with larger precrisis debt increases and more severe profitability declines tended to have larger increases in profit shares during the crisis period. The two factors together accounted for almost 60 percent of the variation in cross-country profit share increases during 2008–11.

Regression of employment growth on the *precrisis* deterioration in the profit share and increase in debt explains two-thirds of the cross-country variation in employment growth between 2008 and 2011 (Table 3.4, Column 3), suggesting that the mechanism described in this chapter has been important.

Table 3.4. Employment Growth during 2008–11 and Precrisis Balance Sheet and Profitability Deterioration

Dependent variable: Employment growth, 2008–11	(1)	(2)	(3)
Nonfinancial corporate sector debt-to-GDP	−0.180***		−0.090*
ratio change, 2003–08 (percentage points)	(0.040)		(0.043)
Nonfinancial corporate sector profit change,		0.837***	0.594***
2003–08 (percentage points, as share of gross value added)		(0.151)	(0.182)
Constant	−0.437	−3.120***	−1.596
	(1.112)	(0.707)	(0.980)
Observations	22	22	22
R^2	0.500	0.606	0.680

Note: Standard errors are in parentheses.
*, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively.

Policy Implications

The analysis in this chapter suggests that the large employment losses in many countries have been the result of a corporate adjustment process that helped restore the financial health of the corporate sector. It is noteworthy that profits in several of the most crisis-affected countries, after sharply deteriorating in the precrisis years, have rebounded strongly. Although the adjustment has deepened the recession, it has also helped set the stage for renewed growth.

It is difficult to predict when the corporate adjustment will have run its course. There is no "norm" for the profit share, and preboom levels may have been too low given the increased debt level. However, signs are appearing in at least some of the crisis-hit countries that the process may be nearing its end. In Ireland, the profit share stopped increasing in 2012, and the wage bill ended its decline (Figure 3.19). These signs are also visible in employment, which started growing again, and unemployment, which has started to come down.

The results also suggest that there is a tradeoff between wage adjustment and employment losses and that in some countries employment losses would have been smaller if wages had adjusted more. To restore profits, firms need to reduce the wage bill, which can occur through either price adjustment or quantity adjustment. The less wages adjust, the higher will be the decline in employment. Countries with dual labor markets tend to have less adjustment of wages, and consequently have seen larger declines of employment. Wage adjustment is preferable to employment adjustment because the former helps distribute the burden more equitably, while the latter negatively affects human capital and the potential growth rate.

The way in which the corporate sector adjusts matters greatly for other sectors. The impact on aggregate demand, which depends to a large degree on employment decisions, will affect private households' ability to repair their balance sheets. And in an adverse outcome with large employment losses and pronounced increases in non-performing loans, banks may require additional help from the sovereign, in turn complicating and worsening public debt dynamics. Yet, as Chapter 4 shows, such difficulties need not dominate; history provides examples of successful consolidations in, and despite, adverse conditions.

Figure 3.19. Ireland: The Resumption of Employment Growth

Firms' efforts to increase the profit share seem to have ended...

Profit Share
(Percent of value added, four-quarter moving average)

...and firms are no longer reducing the wage bill.

Wage Bill
(Billions of euros, four-quarter moving average)

Employment growth has turned positive...

Employment Growth
(Percent, year-over-year)

.... and the unemployment rate has started to decline.

Unemployment Rate
(Percent)

Source: Haver Analytics.

Appendix 3A. Data for Regression Analysis

Table 3A.1 Data Sources and Variable Construction

Variable name	Data sources	Variable construction	Remarks[1]
Employment growth, 2008–11 (percent)	IMF, World Economic Outlook database	= 100 × (total employment 2011/total employment 2008 − 1)	
Real GDP growth, 2008–11 (percent)	IMF, World Economic Outlook database	= 100 × (real GDP 2011/real GDP 2008 − 1)	
Nonfinancial corporate sector profit share change, 2008–11 (percentage points)	Haver Analytics (EUDATA, Annual Integrated Economic & Financial Accounts by Sector)	= profit share 2011 − profit share 2008, where profit share = 100 × (1 − compensation of employees/gross value added)	Compensation of employees series code: Y*ND1 Gross value added series code: Y*NB1G
Nonfinancial corporate sector profit share change, 2003–08 (percentage points)	Haver Analytics (EUDATA, Annual Integrated Economic & Financial Accounts by Sector)	= profit share 2008 − profit share 2003, where profit share = 100 × (1 − compensation of employees/gross value added)	Compensation of employees series code: Y*ND1 Gross value added series code: Y*NB1G
Nonfinancial corporate debt-to-GDP ratio change, 2003–08 (percentage points)	Haver Analytics (EUDATA, (1) Annual Integrated Economic & Financial Accounts by Sector, and (2) Harmonized ESA95 GDP)	= debt-to-GDP ratio 2008 − debt-to-GDP ratio 2003, where debt-to-GDP ratio = 100 × nonfinancial corporate sector debt stock (securities other than shares + loans)/GDP	Nonfinancial corporate sector securities other than shares series code: C*LCSO Nonfinancial corporate sector loans series code: C*LCLO GDP series code: A*GDPE
Share of temporary employment, 2007 (percent)	OECD, Online OECD Employment database (http://stats.oecd.org/Index.aspx?DatasetCode=TEMP_I); International Institute of Labor Studies (2012)		For data from OECD, the selection is "all persons (sex)" + "total (age)" + "dependent employment (employment status)." Information for Latvia and Lithuania was retrieved from IILS (2012).
Current account deficits, 2008 (percent of GDP in U.S. dollars)	IMF, World Economic Outlook database		+ indicates current account deficits
Increase in current account deficits, 2003–08 (percentage points, as share of GDP in U.S. dollars)	IMF, World Economic Outlook database	= current account deficits in 2008 − current account deficits in 2003	+ indicates increase of current account deficits
Share of construction sector in gross value added, 2008 (percent)	Haver Analytics (EUDATA, Harmonized ESA95 GDP)	= 100 × gross value added of construction/gross value added	Construction gross value added series code: A*VCSN Gross value added series code: A*GVAN
Increase in size of construction sector, 2003–08 (percentage points, as share of gross value added)	Haver Analytics (EUDATA, Harmonized ESA95 GDP)	= share of construction sector 2008 − share of construction sector 2003	Construction gross value added series code: A*VCSN Gross value added series code: A*GVAN

[1]In the series codes, * stands for the 3-digit country codes used in the IMF *International Financial Statistics*.

Table 3A.2   Data for Econometric Analysis

IFS code	Country	Employment Growth, 2008–11 (percent)	Real GDP Growth, 2008–11 (percent)	Nonfinancial Corporate Profits-to-GDP Ratio Change, 2008–11 (percent)	Nonfinancial Corporate Profits-to-GDP Ratio Change, 2003–08 (percent)	Nonfinancial Corporate Debt-to-GDP Ratio Change, 2003–08 (percent)	Share of Temporary Employment, 2007 (percent)	Current Account Deficit in 2008 (percent of GDP in U.S. dollars)	Increase in Current Account Deficits, 2003–08 (percentage points, as share of GDP in U.S. dollars)	Share of Construction Sector in Gross Value Added, 2008 (percent)	Increase in Size of Construction Sector, 2003–08 (percentage points, as share of gross value added)
112	United Kingdom	−0.9	−1.5	−0.1	1.0	13.8	5.9	−1.0	0.7	7.6	0.5
122	Austria	0.9	0.8	−0.6	1.6	4.6	8.9	4.9	3.2	7.1	−0.3
124	Belgium	1.8	1.4	−0.6	1.7	11.7	8.7	−1.3	−4.7	5.8	0.8
128	Denmark	−4.2	−3.9	1.7	−2.1	31.1	9.1	2.9	−0.6	6.0	0.7
132	France	−0.9	0.1	−2.9	1.0	9.3	15.1	−1.7	−2.5	6.6	1.3
134	Germany	2.0	1.8	−1.8	4.3	−2.8	14.6	6.2	4.3	4.2	−0.2
136	Italy	−1.8	−3.4	−2.5	−3.2	16.5	13.2	−2.9	−2.1	6.4	0.6
138	Netherlands	−1.1	−1.0	−1.6	2.7	−6.7	18.1	4.3	−1.3	5.9	0.2
144	Sweden	1.3	4.6	1.7	2.3	19.7	17.5	9.0	2.1	5.2	0.6
172	Finland	−2.4	−2.9	−3.7	−1.3	19.1	16.0	2.6	−2.2	7.3	1.3
174	Greece	−10.1	−13.1	0.8	0.6	19.9	10.9	−14.9	−8.4	6.8	0.2
178	Ireland	−13.8	−4.8	9.3	−9.8	74.6	8.1	−5.7	−5.7	7.0	−0.9
182	Portugal	−6.9	−3.2	0.5	−1.7	20.7	22.4	−12.6	−6.2	7.3	−0.4
184	Spain	−10.7	−3.7	6.7	−1.0	48.5	31.7	−9.6	−6.1	13.6	1.5
935	Czech Republic	−1.4	−0.5	−2.1	−0.1	−0.6	8.6	−2.1	3.9	6.8	0.1
936	Slovak Republic	−3.3	2.4	−2.9	4.2	−7.9	5.1	−6.6	−0.7	9.6	5.1
939	Estonia	−7.6	−5.6	5.8	−7.9	35.9	2.1	−9.2	2.1	9.8	3.3
941	Latvia	−13.3	−13.5	9.9	−14.2	32.3	3.5	−13.2	−5.1	10.1	3.8
944	Hungary	−1.8	−4.0	2.2	1.3	39.6	7.3	−7.4	0.6	4.9	−0.6
946	Lithuania	−9.9	−8.5	7.7	−6.0	19.4	2.5	−13.3	−6.5	11.2	4.3
961	Slovenia	−6.0	−6.2	−2.9	0.5	34.5	18.5	−6.2	−5.4	8.4	2.1
964	Poland	2.1	10.1	3.9	3.1	1.3	28.2	−6.6	−4.1	7.7	1.5
	Minimum	−13.8	−13.5	−3.7	−14.2	−7.9	2.1	−14.9	−8.4	4.2	−0.9
	Maximum	2.1	10.1	9.9	4.3	74.6	31.7	9.0	4.3	13.6	5.1
	Mean	−4.0	−2.5	1.3	−1.0	19.7	12.5	−3.8	−2.0	7.5	1.2
	Standard deviation	5.0	5.3	4.2	4.7	19.7	7.9	6.9	3.8	2.2	1.6

Sources: International Institute of Labor Studies (2012); Haver Analytics; and IMF, World Economic Outlook database.
Note: IFS = *International Financial Statistics*.

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