Chapter 4
Crisis, unemployment and internal devaluation in Spain

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1. Introduction

The Spanish unemployment rate in 2007 was 8.2 per cent, after an outstanding period of strong economic growth. This figure was very similar to the EU28 average of 7.1 per cent. In 2014, however, the Spanish rate of unemployment was 24.4 per cent and significantly above the EU28 average, which had increased to 10.3 per cent. During those seven years, 3.3 million jobs were lost in Spain, 16 per cent of total employment in 2007. The aim of this chapter is to analyse the main reasons behind this huge rise in unemployment, with particular attention to the impact of the strategy of 'internal devaluation' implemented by the government.

Needless to say, this upward trend in unemployment is related to the decline of economic activity, but employment elasticity to GDP has been also higher in Spain, especially during the Great Recession of 2008–2009. Although the decrease in GDP was very similar in Spain and the EU28 during these two years, job destruction was notably higher in Spain (Figures 1 and 2). According to the ECB (2012), the different nature of the shocks hitting each economy can be a crucial factor in explaining why employment elasticity to GDP differs so remarkably across EU countries (for example, the bursting of a construction bubble usually has a more prolonged effect than any other kind of shock, also entailing more intense labour adjustments). Other relevant circumstances that tend to enlarge the fall in employment in a recession are high levels of debt or a substantial proportion of temporary contracts.

By the same token, Myant and Piasna (2014) argue that the increase in unemployment in recent years is associated with structural changes that affect particular sectors, such as construction. They play down the functioning of the labour market – and especially wage 'flexibility' – as a relevant mechanism for explaining the differences in employment development.

Figure 1 **Real GDP, Spain (2008Q2=100)**

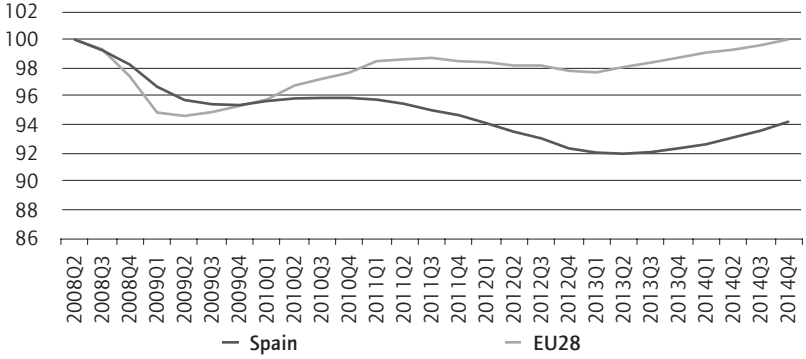
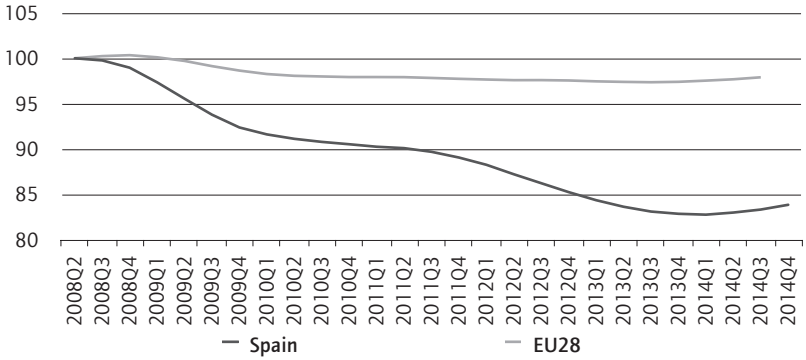


Figure 2 **Employment, Spain (2008Q2=100)**



Source: Eurostat.

Nevertheless, the European economic authorities and some mainstream economists point out that it is precisely the absence of wage flexibility and other supposed 'rigidities' in the labour market that have caused the greater increase in unemployment rates in some countries such as Spain. Labour market reforms and wage devaluation are recommended for economies more affected by the economic crisis.

We take a different view. In this chapter we shall attempt to show that a combination of structural factors and mistaken macroeconomic policies to fight the crisis provide a sound explanation of what is going on in the Spanish labour market.

Regarding the former argument, the strong impact of the crisis on construction and manufacturing explains more than 80 per cent of the fall in Spanish employment during these years. Furthermore, this has led to long-term and low-qualified unemployment.

In fact, the substantial fall in temporary employment during the two first years of the economic crisis is not a symptom of a 'too rigid' labour market but, on the contrary, evidence that employment in Spain is too volatile. In turn, this is due to the sectoral composition of production and the excessive proportion of temporary contracts: it has little to do with rigid wage bargaining.

With respect to our second argument, restrictive macroeconomic policies implemented in Spain and other peripheral countries between 2011 and 2013 triggered a second recession with severe effects on employment. The combination of fiscal austerity and labour market reforms in pursuit of internal devaluation has strangled domestic demand, while not increasing external demand, which would have offset the negative consequences of the former.

The high indebtedness of Spanish households and corporations is also relevant in this state of affairs because these agents have to reduce their spending in order to service their debt and to diminish their debt ratios ('balance sheet recession', see Koo 2008). Once more, internal devaluation aggravates this restrictive effect because of 'debt deflation'.

The chapter is organised as follows. Section 2 provides a brief account of the main trends in employment and unemployment in Spain since 2008. In Section 3, we analyse the sectoral distribution of job losses and the characteristics of the unemployed. Section 4 examines the effects of the macroeconomic policies applied by the Spanish government on GDP and employment, with particular attention to internal devaluation. Finally, we offer some conclusions.

2. Aggregate trends in employment and unemployment

In this section, we provide some stylised facts about the Spanish labour market since the beginning of the financial and economic crisis. Our period runs from 2008 to 2014. With due caution, we associate the first two years (2008 and 2009) with the shock to the construction industry,

whose full effects were partially compensated by some fiscal expansion measures (adopted under the auspices of the G20). The following four years (from 2010 to 2013) are those in which labour market reforms (in 2010, 2011 and 2012) take place, combined with severe fiscal austerity and the reverberations of the bursting of the real estate bubble (including forced saving to deal with debt servicing, tightening credit conditions because of the rise in non-performing loans). Finally, Spain recovered positive GDP and employment growth in 2014, mainly due to falling interest and exchange rates, the downward trend in oil prices and some easing of budgetary policy.

Table 1 **Main labour market indicators, Spain**

Spain	2008Q2	2014Q4	Difference	% of change
Employment	20684.6	17344.2	-3340.4	-16.1%
Employment rate (% pop>15)	53.6%	44.5%	-9.1	
Permanent employees	11858.9	10857.1	-1001.8	-8.4%
Temporary employees	5200.4	3428.7	-1771.7	-34.1%
Temporary rate (% employees)	30.5%	24.0%	-6.5	
Part-time employment	2375.1	2758.8	383.8	16.2%
Part-time employment rate	11.5%	15.9%	4.4	
Unemployed	2081.1	5610.4	3529.3	169.6%
Unemployment rate	9.1%	24.4%	15.3	
Population over 15 years	38601.7	38953.3	351.6	0.9%
Active population	22765.7	22954.6	188.9	0.8%
Inactive population	15836.1	15998.7	162.7	1.0%
EU28	**2008Q2**	**2014Q3**	**Difference**	**% of change**
Employment	221924.3	217271.5	-4652.8	-2.1%
Employment rate (% pop>15)	53.4%	51.7%	-1.7	
Permanent employees	158021.0	156061.7	-1959.3	-1.2%
Temporary employees	26639.6	25263.7	-1375.9	-5.2%
Temporary rate (% employees)	14.4%	13.9%	-0.5	
Part-time employment	40124.1	44412.0	4287.9	10.7%
Part-time employment rate	18.1%	20.4%	2.3	
Unemployed	16510.6	24954.7	8444.1	51.1%
Unemployment rate	6.9%	10.3%	3.4	
Population over 15 years	415757.2	420598.8	4841.6	1.2%
Active population	238434.9	242226.1	3791.2	1.6%
Inactive population	177322.3	178372.7	1050.4	0.6%

Note: Unless otherwise indicated, all the data included in the tables are annual averages (thousands).
Source: Eurostat.

With regard to employment, we can see in Table 1 that 3.3 million jobs have been wiped out by the crisis in Spain, proportionally more than in the EU28 (4.6 million). Most employment destruction took place during the two recessions suffered by the Spanish economy: between the third quarter of 2008 and the fourth quarter of 2009 (1.6 million jobs disappeared) and between the second quarter of 2011 and the second quarter of 2013 (1.4 million). Nevertheless, annual average employment decreased steadily from the onset of the crisis to the second quarter of 2014.

The labour market reforms have contributed to the rise of job precarity, especially among young people. Job losses are particularly prevalent among those with temporary contracts – because of lower firing costs – and the ratio of temporary employees has decreased from 30.5 per cent to 24 per cent. However, this ratio is still higher than the EU average (14 per cent) and this reduction has taken place simultaneously with the loss of more than 1 million permanent contracts (over 2.8 million employees less).

The number of part-time jobs has also increased substantially despite the generalised job destruction, accounting for 16 per cent of total employees at the end of 2014, 4.4 percentage points more than in 2008. Therefore, total hours have decreased even more than total employment during the whole period (–18 per cent versus –16 per cent). In addition, 7 per cent of employees had a temporary and a part-time contract simultaneously.

Indeed, the bulk of the recent increase in employment is again concentrated in temporary contracts. Between the fourth quarter of 2013 and the fourth quarter of 2014 the number of employees with temporary contracts increased by 173,000 and the number of permanent employees by only 43,000.

According to the Labour Force Survey, 14 per cent of the new jobs created during the first three quarters of 2014 had a working week of less than 10 hours, and only 53 per cent reached the usual full-time working week of 40 hours. The average number of hours was 31 for the new jobs created during 2014, while this average was 37 hours per week in the case of employees working for the same firm for more than four years. These differences have increased during the crisis, and especially after the labour market reform of 2012.

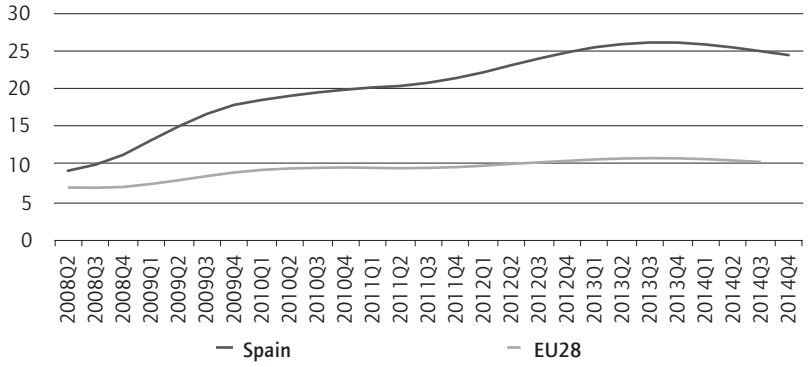
Table 2 **Employees by age and type of labour contract, Spain**

Spain	2008	2010	2012	2014
Total employees	16861.3	15592.3	14573.4	14285.7
% Part-time	11.8%	13.0%	14.5%	15.9%
% Temporary	29.1%	24.7%	23.4%	24.0%
Total 15-29	4162.1	3106.8	2395.2	2139.7
% Part-time	15.8%	19.8%	24.0%	27.8%
% Temporary	48.5%	45.1%	47.3%	51.9%
Total 30-60	12126.6	11911.3	11596.2	11530.6
% Part-time	10.3%	11.3%	12.6%	13.9%
% Temporary	23.3%	20.1%	19.1%	19.7%
Total 60 or more	572.6	574.2	582.0	615.4
% Part-time	15.2%	15.9%	16.5%	16.3%
% Temporary	11.2%	10.6%	10.2%	8.2%

Source: Eurostat.

This destruction of employment led to a rise in unemployment – in absolute values and also as a percentage of the active population – to reach almost 27 per cent in the third quarter of 2013 (Figure 3). Although the effects of the bursting of the real estate bubble were partially offset by an expansionary fiscal policy (until May 2010), unemployment increased in 2008 and 2009 by more than 8 percentage points. Since then, fiscal austerity and labour market reforms have led to an additional increase of roughly another 6 percentage points.

Figure 3 **Unemployment rate, Spain, 2008Q2–2014Q4**



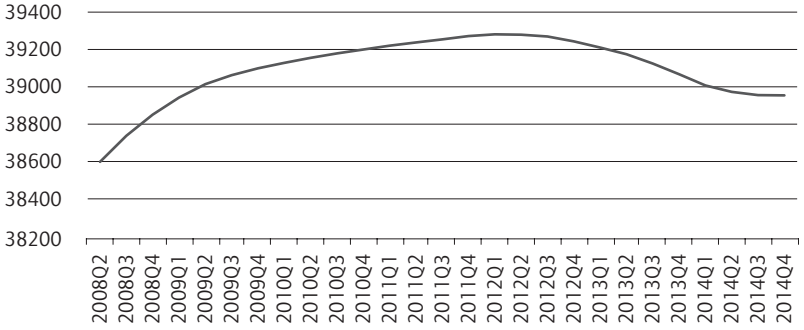
Source: Eurostat.

The active population had been growing rapidly during the previous upswing, mainly due to the arrival of immigrants. Between the onset of the crisis (2009) and 2012, it remained fairly stable at the aggregate level, but it has been decreasing steadily since then. There were 489,000 fewer active people in 2014 than in 2012. Although this is partially explained by the reduction in total population over 15 years of age (Figure 4), it is also due to discouragement: the inactive population increased by 189,000 people (Figure 5).

It is remarkable that the number of actives aged between 16 and 29 declined by 475,000 people during these two years, and migration and discouragement are two relevant explanatory factors, besides demography. On the one hand, 197,000 people of these ages left Spain in 2013 and 2014: 177,000 foreigners (700,000 since 2008) and 20,000 Spaniards. The net migratory flow (immigrants less emigrants) is negative (–46,000). On the other hand, the activity ratio also decreased significantly, from 66 per cent in 2009 to 58 per cent in 2014.

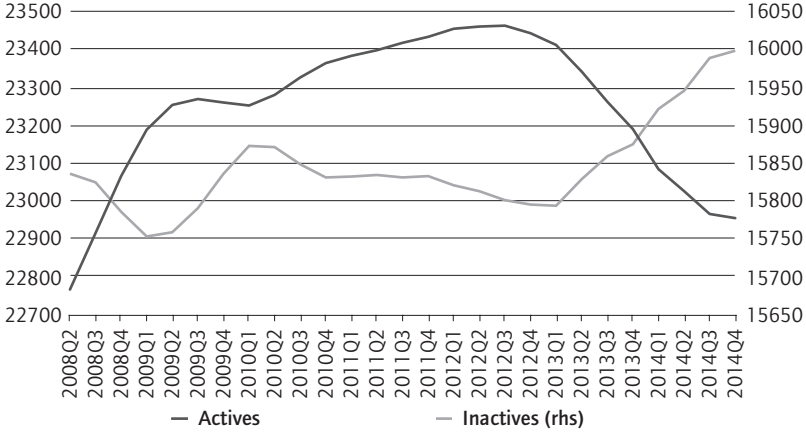
Considering this increase in discouraged workers and those working part-time involuntarily, Felgueroso (2014) points out that the official rate of unemployment underestimates the real importance of labour underutilisation in Spain. Using the same measures as the Bureau of Labor Statistics in the United States he finds that the U6 rate reaches 37.7 per cent in Spain (and 21.3 per cent in the EU28). The numerator of this ratio is the sum of unemployment, discouraged workers and those working part-time for economic reasons and the denominator is active population plus discouraged workers.

Figure 4 **Total population over 15 years of age, Spain, 2008Q2–2014Q4**



Source: Eurostat.

Figure 5 **Active and inactive population, Spain, 2008Q2–2014Q4**



Source: Eurostat.

3. Sectoral composition of employment and some characteristics of the unemployed

The employment collapse in some particularly important economic sectors confirms the adequacy of the structural change hypothesis to explain the evolution of labour market figures in Spain because two sectors – manufacturing and construction – account directly for 80 per cent of all job losses (Table 3).

Specifically, the fall in employment in construction accounts for 64 per cent of those in work in it in 2007, but it is also substantial in manufacturing (roughly 30 per cent jobs lost). Regarding employment directly related to public services, this continued to increase until the end of 2011, but has declined significantly since then, as a consequence of budgetary cuts (Table 4). Annual average employment in public administration, defence, education and health care suffered a reduction of 256,000 jobs between 2011 and 2014.

The impact of the collapse of construction on Spanish unemployment is even higher if we take into account the 'employment multiplier', the effect of an increase in production in one economic sector on employment in other sectors.

Using input-output techniques and data collected from the WIOD Database (Timmer *et al.* 2012), the total labour requirements necessary to satisfy the final demand for each domestic product ($\mathbf{l}_t$ or "vertically integrated labour" according to Pasinetti, 1973) is obtained by the following equation:

$$[1] \qquad \mathbf{l}_t = \mathbf{a_{nt}}\,[\mathbf{I}-\mathbf{A}]^{-1} \cdot <\mathbf{y}>$$

where $\mathbf{a_n}$ is a vector of the labour requirements directly required to produce one million euros of sectoral gross output, $[\mathbf{I}-\mathbf{A}]^{-1}$ is the usual Leontief inverse and $<\mathbf{y}>$ is a diagonal matrix calculated from vector $\mathbf{y}$ which represents the annually produced physical final demand by sector, including private and public consumption, exports, gross fixed capital formation and changes in inventories and valuables.

This is shown in Table 5, disaggregated for 16 industries, for 2007, 2009 and 2011. Input/output data are not available after 2011, so we have estimated vertically integrated labour for 2014 by multiplying the direct employment of each sector in that year by the employment multiplier[1] in 2011.

Four vertically integrated sectors accounted for 56 per cent of total employment in 2007: manufacturing (19 per cent), construction and real estate (18 per cent), accommodation and catering (10 per cent), and wholesale and retail trade (9 per cent). Another 20 per cent was employment related to public services (education and health)[2] or public administration and defence.

Table 5 also shows the backward and forward linkages among sectors. In 2007, 6,442,000 workers were occupied in producing intermediate goods and services, used as inputs for other sectors. Construction is one sector in which the labour devoted to satisfying the intermediate consumption of other sectors – the column labelled 'out', which indicates forward linkages – is lower than the labour induced in other sectors to satisfy its own (the column labelled 'ind', which stands for a measure of backward linkages). These figures make clear its capacity to put other sectors' workers in motion. This is also the case with regard to other activities strongly affected

1. Ratio between vertically integrated labour associated with the final demand in a sector and direct labour in the same sector.
2. We should concede that not all employees in education and health services are civil servants. Nevertheless, a very large proportion of these services is provided by the public sector.

by the crisis, such as manufacturing, the public sector (after 2011) and accommodation and catering. The opposite applies to professional, administrative and support services, transport and mining and quarrying, which are strongly dependent on other sectors' input requirements.

All of this highlights once more the over-specialisation of the Spanish economy in construction and real estate activities in the recent past, as well as the major impact that the bursting of the real estate bubble has had on total employment. As Table 6 shows, the reduction in the number of jobs directly or indirectly associated with these sectors reached 2.3 million in absolute terms between 2007 and 2014, or 69 per cent of the total reduction in employment in the Spanish economy. This is even clearer between 2007 and 2009, when job losses related to construction and real estate amounted to 82 per cent of the reduction in employment across the whole economy.

This fall in employment directly and indirectly related to construction is not a consequence of 'too high' wages; more 'flexible' wages would not have prevented it. Spain had been accumulating imbalances during the previous boom period: specifically, skyrocketing private household debt and an outsized construction industry.

In 1997, household debt began to grow, particularly to fund the purchase of houses. As Dejuán and Febrero (2011) explain, this is partly due to demographic factors (baby boomers reaching their thirties and a high property ownership rate in Spain) and other causes related to the creation of the euro zone (falling interest rates and enhanced capital movement). On the supply side, the number of dwellings increased hugely, but house prices rose dramatically as well, exacerbated by speculation.

The construction sector grew at twice the rate of GDP over ten years, a pace that was difficult to maintain. Between 1997 and 2007, there were 6.25 million housing starts, and one in five new jobs was created in the construction sector. In 2007, the weight of the building industry was much larger than in the EU as a whole, while employment in the manufacturing sector fell. Nevertheless, this growth pattern had become exhausted in 2007, for several reasons (Uxó, Paúl and Febrero 2011).

First, household debt had reached very high levels and housing prices had tripled in ten years. Although initially debt has an expansionary effect, insofar as it finances higher spending, the burden of debt service

has severely detrimental effects in the long term. Thus, at the same time such as residential investment falls, the debt service resulting from previous years rises inexorably, provoking an increase in 'forced savings'. Besides this, the ECB had begun to raise interest rates in late 2005.

Second, the housing market was already saturated: nearly 7 million dwellings had been built in the previous decade and in 2007, 700,000 units more were started, although the number of unsold dwellings was estimated at 500,000. By 2009, the stock of unsold dwellings amounted to 688,000 units, 2.7 per cent of the total stock. And the previous social and demographic factors that had led to the initial increase in demand for new houses disappeared.

Therefore, economic recovery could not be grounded once again on the construction industry. The real problem is that once construction halted its momentum, no other productive sector took over as locomotive of the economy, because of the lack of aggregate demand. This resulted, in turn, in a rise in unemployment that aggravated the problem of household debt. As we will see, wage depression and fiscal austerity made matters even worse. The only sector in which employment registered a significant increase between 2007 and 2011 was the aggregation of public administration, education and health care, whose share in total employment grew from 20 per cent to 25 per cent. However, this single positive trend was interrupted in 2011 due to the adoption of fiscal austerity.

Table 6 also highlights a generalised decline in the level of employment related to manufacturing, where only electricity, gas and water supply showed a slight positive trend during 2007–2009. A similar trend applies with regard to accommodation and catering, which includes tourism, the other sector in which the Spanish economy is highly specialised. Nevertheless, the reduction in employment has clearly been less significant in this case (5.3 per cent in 2007–2011 and 0.1 per cent in 2011–2014).

Table 4 **Private and public employment, Spain, 2008–2014 ('000)**

	2008	2010	2012	2014
Public employment	3006.7	3209.6	3112.4	2925.7
Private employment	17463.0	15514.9	14520.3	14241.6

Source: Eurostat.

Table 3 **Employment by economic activity, Spain**

Activities NACE 2		Thousands				Change between 2007 and 2014			Change between 2011 and 2014		
		2007	2009	2011	2014	Thousands	%	% of total	Thousands	%	% of total
Agriculture, forestry and fishing	A	866.2	788.1	755.3	738.2	-128.1	-14.8%	3.9%	-17.1	-2.3%	1.5%
Mining and quarrying	B	59.3	44.4	42.0	32.5	-26.9	-45.3%	0.8%	-9.6	-22.7%	0.8%
Manufacturing	C	2995.5	2549.4	2349.7	2123.8	-871.7	-29.1%	26.3%	-225.9	-9.6%	19.6%
Electricity, gas and water supply	D-E	201.7	213.8	213.0	204.0	2.3	1.2%	-0.1%	-9.0	-4.2%	0.8%
Construction	F	2759.2	1889.8	1403.9	981.2	-1778.0	-64.4%	53.7%	-422.7	-30.1%	36.7%
Wholesale and retail trade	G	3116.0	2990.5	2962.5	2858.2	-257.8	-8.3%	7.8%	-104.3	-3.5%	9.1%
Transport	H	964.6	923.8	899.3	852.7	-111.9	-11.6%	3.4%	-46.6	-5.2%	4.0%
Accomodation and food service activities	I	1456.6	1423.3	1401.1	1405.0	-51.6	-3.5%	1.6%	3.9	0.3%	-0.3%
Information and communication	J	567.2	533.3	533.3	508.5	-58.7	-10.3%	1.8%	-24.8	-4.6%	2.2%
Financial and insurance activities	K	508.0	487.5	464.6	453.7	-54.3	-10.7%	1.6%	-10.9	-2.3%	0.9%
Real estate activities	L	108.5	91.9	96.3	100.5	-8.0	-7.3%	0.2%	4.3	4.4%	-0.4%
Professional, scientific and technical activities; administrative and support services	M-N	1814.8	1793.4	1767.7	1733.0	-81.8	-4.5%	2.5%	-34.7	-2.0%	3.0%
Public administration, defence	O	1257.6	1387.8	1452.8	1302.0	44.5	3.5%	-1.3%	-150.7	-10.4%	13.1%
Education	P	1147.8	1180.1	1206.1	1142.8	-5.0	-0.4%	0.2%	-63.4	-5.3%	5.5%
Human health and social work activities	Q	1243.3	1352.6	1462.5	1420.6	177.3	14.3%	-5.4%	-41.9	-2.9%	3.6%
Arts, entertainment and recreation; other services	R-U	1513.4	1457.3	1411.6	1412.5	-100.9	-6.7%	3.0%	1.0	0.1%	-0.1%
Total	A-U	20579.6	19106.9	18421.4	17269.2	-3310.4	-16.1%	100.0%	-1152.2	-6.3%	100.0%
Construction + real estate	F+L	2867.7	1981.7	1500.2	1081.7	-1785.9	-62.3%	53.9%	-418.4	-27.9%	36.3%
Public administration, defence, education, health and social services	O-Q	3648.6	3920.5	4121.4	3865.4	216.8	5.9%	-6.5%	-256.0	-6.2%	22.2%

Source: Eurostat.

Table 5 **Direct and indirect labour, Spain, 2007, 2011, 2014 ('000)**

Activities NACE 2		2007					
		l_{direct} T		out	$l_{vert\ integ}$ T		ind
Agriculture, forestry and fishing	A	866.2	4.20%	397.0	584.6	2.80%	113.9
Mining and quarrying	B	59.3	0.30%	48.1	19.7	0.10%	8.4
Manufacturing	C	2995.5	14.60%	1229.2	3916.2	19.00%	2166.3
Electricity, gas and water supply	D-E	201.7	1.00%	96.5	177.2	0.90%	72.2
Construction	F	2759.2	13.40%	370.9	3528.3	17.10%	1141.7
Wholesale and retail trade	G	3116.0	15.10%	1589.5	1944.1	9.40%	413.0
Transport	H	964.6	4.70%	550.7	696.3	3.40%	283.2
Accomodation and food service activities	I	1456.6	7.10%	100.3	2041.7	9.90%	686.9
Information and communication	J	567.2	2.80%	283.6	409.8	2.00%	126.0
Financial and insurance activities	K	508.0	2.50%	234.7	366.3	1.80%	92.5
Real estate activities	L	108.5	0.50%	30.9	257.8	1.30%	182.0
Professional, scientific and technical activities; administrative and support service activities	M-N	1814.8	8.80%	1006.1	1092.6	5.30%	282.0
Public administration, defence	O	1257.6	6.10%	90.5	1464.5	7.10%	295.0
Education	P	1147.8	5.60%	57.9	1175.5	5.70%	81.0
Human health and social work activities	Q	1243.3	6.00%	52.8	1462.8	7.10%	269.5
Arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies	R-U	1513.4	7.40%	303.4	1442.2	7.00%	228.6
		20579.6	**100.00%**	**6442.2**	**20579.6**	**100.00%**	**6442.2**

Note: l_{direct} – Number of workers required to obtain the total output for each sector, of which out accounts for the workers producing the part of that output used as intermediate consumption by the other sectors. That is, the number of jobs associated with agriculture, forestry and fishing in 2007 was 929,300, of which 425,400 were producing the share of this sectoral output that the other sectors required as inputs for their production process.

$l_{vert\ integ}$ – Number of workers associated with the production of the final demand for each sector, of which 'ind' accounts for the total number of jobs induced in the other sectors. For example, the total number of workers required to satisfy the final demand of agriculture, forestry and fishing in 2007 was 624,000, of whom 120,000 were employed in the other economic sectors to produce the inputs used by agriculture, forestry and fishing.

Source: WIOD Database and authors' elaboration.

Table 5 **Direct and indirect labour, Spain, 2007, 2011, 2014 ('000) (Cont.)**

Activities NACE 2		2011		
		l_{direct}	T	out
Agriculture, forestry and fishing	A	755.3	4.10%	343.6
Mining and quarrying	B	42.0	0.20%	30.1
Manufacturing	C	2349.7	12.80%	818.2
Electricity, gas and water supply	D-E	213.0	1.20%	107.3
Construction	F	1403.9	7.60%	230.7
Wholesale and retail trade	G	2962.5	16.10%	1498.5
Transport	H	899.3	4.90%	492.9
Accomodation and food service activities	I	1401.1	7.60%	99.6
Information and communication	J	533.3	2.90%	272.9
Financial and insurance activities	K	464.6	2.50%	200.0
Real estate activities	L	96.3	0.50%	28.6
Professional, scientific and technical activities; administrative and support service activities	M-N	1767.7	9.60%	1039.7
Public administration, defence	O	1452.8	7.90%	105.0
Education	P	1206.1	6.50%	59.0
Human health and social work activities	Q	1462.5	7.90%	59.4
Arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies	R-U	1411.6	7.70%	285.4
		18421.4	**100.00%**	**5671.0**

Note: l_{direct} – Number of workers required to obtain the total output for each sector, of which out accounts for the workers producing the part of that output used as intermediate consumption by the other sectors. That is, the number of jobs associated with agriculture, forestry and fishing in 2007 was 929,300, of which 425,400 were producing the share of this sectoral output that the other sectors required as inputs for their production process.
$l_{vert\ integ}$ – Number of workers associated with the production of the final demand for each sector, of which 'ind' accounts for the total number of jobs induced in the other sectors. For example, the total number of workers required to satisfy the final demand of agriculture, forestry and fishing in 2007 was 624,000, of whom 120,000 were employed in the other economic sectors to produce the inputs used by agriculture, forestry and fishing.
Source: WIOD Database and authors' elaboration.

We conclude this section with a brief review of the distribution of the unemployed according to various criteria. Table 7 shows that the unemployment rate is highest among those under 29 years of age (indeed, for those below 24 years of age unemployment is well over 50 per cent). Unemployment is also much higher among those with lower levels of education, although, surprisingly, it is greater for those with a tertiary education than for those with upper secondary education.

Table 5 **Direct and indirect labour, Spain, 2007, 2011, 2014 ('000) (Cont.)**

2011 (cont.)			2014					
$l_{vert\ integ}{}^{T}$		ind	$l_{direct}{}^{T}$		out	$l_{vert\ integ}{}^{T}$		ind
517.1	2.80%	105.4	738.2	4.30%	332.9	511.0	3.00%	105.7
21.0	0.10%	9.1	32.5	0.20%	22.9	16.4	0.10%	6.8
3579.1	19.40%	2048.1	2123.8	12.30%	719.0	3270.9	18.90%	1866.1
190.1	1.00%	84.5	204.0	1.20%	101.7	184.1	1.10%	81.9
1867.0	10.10%	693.9	981.2	5.70%	154.0	1319.3	7.60%	492.1
1846.5	10.00%	382.3	2858.2	16.60%	1430.5	1801.3	10.40%	373.6
696.1	3.80%	289.7	852.7	4.90%	459.6	667.3	3.90%	274.2
1925.0	10.40%	623.6	1405.0	8.10%	75.9	1951.8	11.30%	622.7
371.2	2.00%	110.8	508.5	2.90%	262.8	357.9	2.10%	112.2
369.2	2.00%	104.6	453.7	2.60%	193.2	364.6	2.10%	104.1
236.7	1.30%	169.0	100.5	0.60%	27.1	249.7	1.40%	176.3
943.6	5.10%	215.4	1733.0	10.00%	1012.4	935.3	5.40%	214.7
1638.4	8.90%	290.7	1302.0	7.50%	79.6	1484.6	8.60%	262.2
1225.6	6.70%	78.4	1142.8	6.60%	44.2	1174.2	6.80%	75.6
1668.0	9.10%	264.9	1420.6	8.20%	41.2	1638.2	9.50%	258.8
1326.9	7.20%	200.6	1412.5	8.20%	269.7	1342.5	7.80%	199.7
18421.4	**100.00%**	**5671.0**	**17269.2**	**100.00%**	**5226.6**	**17269.2**	**100.00%**	**5226.6**

The distribution of unemployment by industry is presented in Table 8, where we also include the duration of unemployment by industry. It should be noted that those unemployed for more than one year are shifted from their corresponding industry to the column 'Unemployed more than one year'. This explains why the unemployment figures for construction are lower than expected. But the most striking fact is the huge amount of people unemployed for more than two years, who account for almost 40 per cent of the total unemployed in 2014 (50 per cent if we include those who have never worked).

Finally, we take into consideration unemployment related to previous occupation (Table 9). We see that in 2014, apart from the long-term unemployed, the highest unemployment rate corresponds to occupations that require low qualifications, particularly, service and sales workers (restaurants, hotels, trade) and elementary occupations.

Table 6 **Changes in vertically integrated labour, Spain**

Activities NACE 2, vertically integrated employment	Change 2007 to 2011			Change 2011 to 2014		
	Thousands	%	% of total	Thousands	%	% of total
Agriculture, forestry and fishing	-67.5	-11.5%	3.1%	-6.1	-1.2%	0.5%
Mining and quarrying	1.3	6.8%	-0.1%	-4.6	-21.8%	0.4%
Manufacturing	-337.1	-8.6%	15.6%	-308.2	-8.6%	26.7%
Electricity, gas and water supply	13.0	7.3%	-0.6%	-6.0	-3.2%	0.5%
Construction	-1661.4	-47.1%	77.0%	-547.6	-29.3%	47.5%
Wholesale and retail trade	-97.6	-5.0%	4.5%	-45.2	-2.4%	3.9%
Transport	-0.3	0.0%	0.0%	-28.7	-4.1%	2.5%
Hotels and catering	-116.7	-5.7%	5.4%	26.8	1.4%	-2.3%
Information and communication	-38.6	-9.4%	1.8%	-13.3	-3.6%	1.2%
Financial and insurance activities	2.9	0.8%	-0.1%	-4.7	-1.3%	0.4%
Real estate activities	-21.1	-8.2%	1.0%	13.1	5.5%	-1.1%
Professional, scientific and technical activities; administrative and support services	-149.1	-13.6%	6.9%	-8.2	-0.9%	0.7%
Public administration, defence	173.9	11.9%	-8.1%	-153.8	-9.4%	13.3%
Education	50.1	4.3%	-2.3%	-51.4	-4.2%	4.5%
Human health and social work activities	205.2	14.0%	-9.5%	-29.8	-1.8%	2.6%
Arts, entertainment and recreation; other services	-115.3	-8.0%	5.3%	15.6	1.2%	-1.4%
Total	-2158.2	-10.5%	100.0%	-1152.2	-6.3%	100.0%
Construction + real estate	-1682.5	-44.4%	78.0%	-534.6	-25.4%	46.4%
Public administration, defence, education, health and social services	429.2	10.5%	-19.9%	-235.0	-5.2%	20.4%

Source: WIOD Database and authors' elaboration.

Table 7 **Unemployed by age and level of education, Spain**

Ages	2008	2010	2012	2014
15-29, thousands of unemployed	1012.1	1566.6	1770.3	1651.6
Up to lower secondary education				1088.2
Upper secondary				204.5
Tertiary				358.9
Unemplyment rate	18.20%	31.70%	40.30%	41.00%
30-54, thousands of unemployed	1402.9	2707	3531.1	3611.5
Up to lower secondary education				2395.6
Upper secondary				357
Tertiary				858.8
Unemplyment rate	9.40%	17.20%	21.90%	22.70%
55 or older, thousands of unemployed	177.1	362.7	503.2	586.5
Up to lower secondary education				532.1
Upper secondary				33.4
Tertiary				69.5
Unemployment rate	6.90%	13.40%	17.00%	19.20%

Source: Eurostat.

Table 8 **Unemployed by industry and duration of unemployment, Spain**

	2008	2010	2012	2014
Agriculture	132.3	215.5	277.7	258.80
Up to 3 months	56.7	83,075	108.05	101.1
3-12 months	75.6	132.4	169.6	157.7
Unemployment rate	13.77%	21.52%	27.20%	25.50%
Manufacturing	213.1	266.1	315	243.10
Up to 3 months	90.4	75,325	93.35	70.4
3-12 months	122.7	190.8	221.7	172.7
Unemployment rate	6.18%	9.12%	11.26%	9.43%
Construction	422.1	501.9	429.4	295.20
Up to 3 months	186.3	143	115.7	86.5
3-12 months	235.8	358.9	313.7	208.7
Unemployment rate	14.65%	23.31%	26.99%	23.06%
Services	958.7	1446.8	1720.5	1574.10
Up to 3 months	372.4	447.7	524.8	494.8
3-12 months	586.3	999.1	1195.7	1079.3
Unemployment rate	6.43%	9.59%	11.50%	10.73%

Table 8 **Unemployed by industry and duration of unemployment, Spain (Cont.)**

	2008	2010	2012	2014
More than 1 year, number of unemployed	635.4	1853.7	2572	2930.70
Unemployment rate	2.75%	7.93%	10.97%	12.73%
More than 2 years, number of unemployed	256.9	787.7	1487.2	2324.30
Never in job, number of unemployed	230.4	352.3	490	547.70
Unemployment rate	1.00%	1.51%	2.09%	2.38%

Note: The classification of unemployed by industries depends on the sector where they were working when they became unemployed.
Source: Labour Force Survey (INE).

Table 9 **Unemployed by previous occupation, Spain**

Total unemployed, 2014	5301.85
Managers	0.50%
Professionals and technicians	2.91%
Clerical support workers	2.94%
Services and support workers	2.99%
Services and sales workers	11.31%
Skilled agricultural, foresty and fishery workers	0.72%
Craft and related trade workers	6.97%
Plant and machine operators and assemblers	2.90%
Elementary occupations	13.47%
Armed forces occupations	0.02%
Unemployed more than 1 year	55.28%

Note: 'Total unemployed' here includes only those who had worked at some time during the last 12 months.
Source: Eurostat.

4. Internal devaluation, fiscal austerity and employment

At the beginning of the Great Recession (2008–2009), the Spanish government implemented an economic policy aimed at reviving domestic demand through an expansive fiscal programme, coinciding with the proposals issued by the G20, the European Plan for Economic Recovery and the IMF. In fact, the Spanish fiscal stimulus package was one of the most expansive in the world (2.3 per cent of GDP in 2009), partly because Spain had considerable fiscal room to manoeuvre. Of course, one of the

outcomes of this expansive policy – and of the crisis itself – was the increase in the fiscal deficit (–11.1 per cent in 2009) and public debt (53.1 per cent of GDP in 2009: a rise of 17 percentage points in two years).

In 2010, the Spanish government curbed public spending, due to the sovereign debt crisis and pressure from other governments and the European Commission. Since that year, Spanish budgetary policy has been strongly restrictive and pro-cyclical.

The economic authorities argued initially that fiscal consolidation could be associated with an expansion of private domestic demand through some 'non-Keynesian effects' such as expectations of future tax cuts, decreasing interest rates or more confidence on the part of investors (Alesina 2010 summarises these arguments, while Romer 2012 provides an opposing point of view). Quite to the contrary, fiscal austerity has been systematically associated with lower growth during the crisis, which the IMF (2012) interprets as strong evidence for the underestimation of fiscal multipliers.

The Spanish government has finally recognised that fiscal austerity is detrimental to domestic demand in the short run and now argues that its positive effect will come in the long run in the form of higher potential growth and job creation (for example, Spanish government, 2013). Theoretically, this would be the outcome of a combination of improving fiscal finances, leading to a reduction in interest rates and the rebalancing of the external sector due to the recovered competitiveness derived from internal devaluation, with structural reforms accelerating the convergence towards full employment. However, potential growth is not independent of real aggregate demand growth. Austerity measures depress output and employment in the short run, but they have longer-lasting consequences. Ball (2014) offers clear evidence of this long-term damage from the Great Recession in OECD countries, including Spain. This implies less productive capacity, which could provoke a higher contraction of the tax base and thus a new rise in the deficit and public debt over GDP ratios. Lower production and a persisting public deficit might lead to a vicious circle.

Febrero and Bermejo (2013) provide a non-orthodox interpretation of the causes that drove the Spanish economy into recession and the limitations of the economic policies applied by the government. In this section, we focus on the role played by competitiveness derived from the internal devaluation strategy in the expected economic recovery. As is well known

(Alexiou and Nellis 2013), this process allows a country to achieve a lower inflation rate than its competitors, and in the case of the euro area it is frequently emphasised that this should be mainly the result of lower wage growth in countries with external deficits. If inflation in neighbouring countries does not change, this would mean an improvement in competitiveness and contribute to a correction of the current account deficit. Moreover, it is also expected that this boost to external demand would trigger an export-led growth recovery, helping to reduce unemployment.

Unfortunately, as we will show, these theoretical benefits have not been achieved and falling wages and fiscal austerity have contributed decisively to the increase in unemployment in Spain.

4.1 Evolution of wages and unit labour costs

Figures 6 and 7 present the evolution of nominal wages in Spain using two different indicators: the officially registered collective agreements signed by employers and trade unions and the effective wage cost per employee as estimated by the Quarterly Survey of Labour Costs, conducted by the INE (Spanish Statistical Office). They show a remarkable decrease in the rate of growth of nominal wages since the onset of the crisis, and especially after 2010. The average annual growth rate of the wage cost per employee was 3.6 per cent between 2001 and 2007, but it has been near to zero since then, with a negative rate of –0.4 per cent between the third quarter of 2012 and the end of 2014. If we consider real wages (deflated with the consumer price index) the loss of purchasing power since the end of 2009 is 8 per cent. In fact, wage moderation in Spain is even sharper when composition effects are taken into account, because job destruction has been concentrated on lower skilled workers who, on average, receive lower wages (Puente and Galán 2014).

Although the growth rate of nominal wages increased during the first recession of 2008–2009 in relation to the expansive period of 2000–2007, different causes can explain this. First, many collective agreements had been signed in previous years in a context of strong economic growth and with an average period of application of more than three years. Furthermore, although employment had been decreasing in the construction sector since the end of 2007, industrial employment began to shrink later, and the expectations of the social partners and the economic authorities did not fully anticipate the acute downturn that took

Figure 6 **Average annual growth of nominal and real wages, Spain (%)**

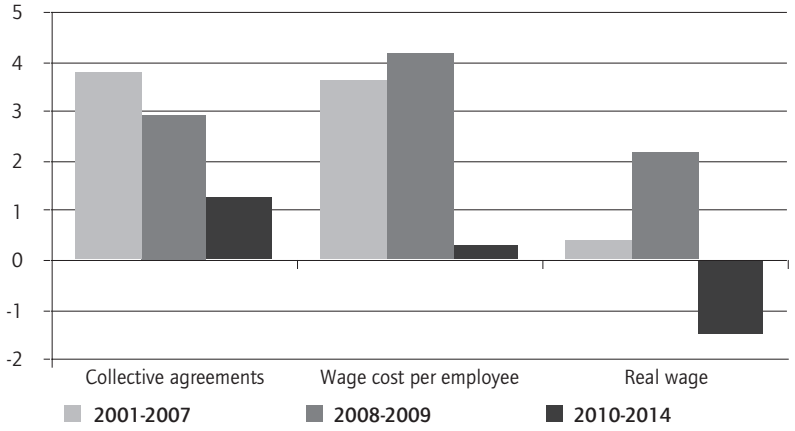
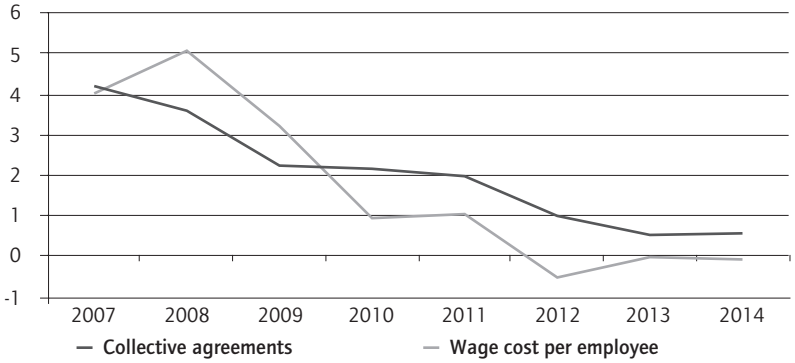


Figure 7 **Annual growth of nominal wages, Spain (%)**



Source: Ministerio de Empleo y Seguridad Social; Instituto Nacional de Estadística; authors' elaboration.

place from the third quarter of 2008. Second, the wage growth signalled in the collective agreements was indeed decreasing during 2008 and 2009, but most employment losses affected temporary workers, whose wages were on average one-third of the those of employees with a permanent contract. This composition effect explains that average wages were growing faster than the collectively agreed rate. Finally, the inflation rate in 2007 had been 2 percentage points higher than what was anticipated when nominal wages had been bargained, and the corresponding compensation was paid in 2008.

This evolution of wages is, on the one hand, the result of the economic crisis itself, which has weakened the position of workers in collective bargaining. Spanish trade unions and employers' organisations signed two Agreements for Employment and Collective Bargaining (ANEC) in 2010 and 2012 that included guidelines for limited wage growth between 2010 and 2014. For example, the second set a maximum growth rate of 0.5 per cent for 2012 and 0.6 per cent for 2013. The target for 2014 was conditioned by the evolution of real GDP in 2013 and the growth rate for wages was finally set at less than 0.6 per cent.

On the other hand, wage moderation is also the result of the deliberate adoption of various policy measures, especially those affecting the wages of public employees and the labour market reforms.

Civil servants' wages were cut in 2010 and 2012, and frozen in 2011, 2013 and 2014. These measures are usually presented as part of the fiscal consolidation policy, but it should be remembered that the Euro Plus Pact highlights the signalling effect of public sector wages for the private sector (see Marzinotto and Turrini 2014 for an analysis of the relationship between wages in the public sector and manufacturing).

Nevertheless, the economic policy decisions that had a more direct impact on wage bargaining were the labour market reforms passed in 2010, 2011 and, above all, 2012. Specifically, the last one involved very radical changes in three decisive areas related to wage determination:

(i) *Collective bargaining*: firm-level agreements were given priority in a broad set of areas, including wage determination; employers were given increased possibilities to opt out of the conditions laid down in sectoral or national agreements, as well as unilaterally to change working conditions previously agreed with employees above the minimum levels established in the collective agreement; and past agreements were to expire one year after their termination.
(ii) *Dismissal costs and procedures*: the economic conditions for dismissal and reduction of redundancy payments were redefined; administrative authorisation for collective dismissals was eliminated.
(iii) *Hiring possibilities*: a new type of permanent contract was introduced for firms with fewer than 50 employees (the vast majority of Spanish companies) with a period of one year with no dismissal compensation; more flexible conditions for training and apprenticeship contracts, as well as part-time hiring.

Izquierdo, Lacuesta and Puente (2013) aim to divide the development of nominal wages into a factor related to the economic crisis, and another one related to these legal changes in the labour market. They estimate a wage equation, including the situation of the labour market in their independent variables, and particularly the rate of unemployment, the evolution of labour productivity and the inflation rate. Then, analysing the residuals of this equation, they conclude that since 2010, and especially after 2012, the downward trend of nominal wages cannot be explained exclusively by the evolution of these variables, and that the labour market reform has deepened wage 'moderation'.

From the point of view of employers, unit labour costs are more relevant than wages per employee. Using national accounts data, they can be measured at the aggregate level by the ratio between nominal compensation per employee[3] and real average productivity.

Figure 8 takes the last quarter of 2000 as the base and reveals that Spanish unit labour costs recorded an upward trend until the last quarter of 2009, when they were 16 per cent higher than the euro-area average. Since then, there has been a continued reduction of unit labour costs and the difference with the euro area was only 3 per cent at the end of 2014. This pattern of unit labour costs is the result of both the behaviour of compensation per employee and the evolution of productivity, which has made a positive contribution to reducing unit labour costs. In any case, this increase in labour productivity is not explained by production increases but by an even greater decrease in the number of workers employed and by the sectoral composition of job losses.

In Figure 9 we present the evolution of real unit labour costs, which compare real wages per employee and average productivity, or real output per employee. In this case we use the GDP deflator instead of the CPI, because we are interested in real wages from the employer's viewpoint. This ratio has followed a clear downward trend since 2009, because the real compensation per employee has grown steadily less than average productivity. Consequently, real unit labour costs were 8.5 per cent lower in 2014 than in 2009.

According to the neoclassical account of labour demand, this difference should have translated into higher levels of employment, but Figures 10

3. It includes not only wages, but also social contributions and dismissal compensation.

Figure 8 **Nominal unit labour costs, Spain (2000Q4=100)**

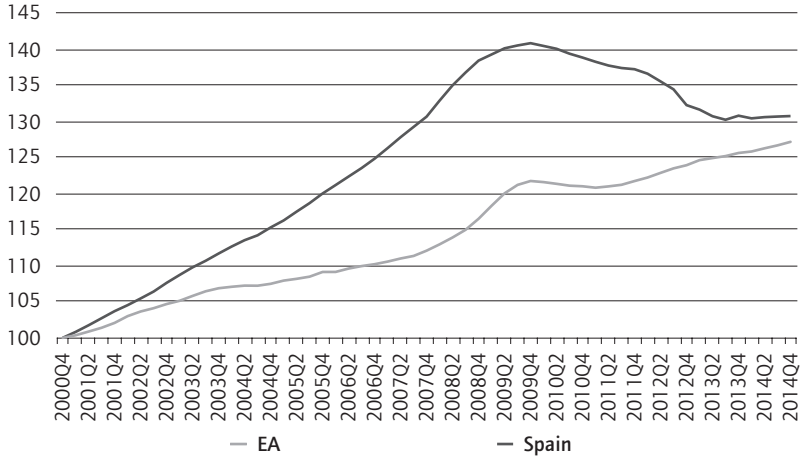
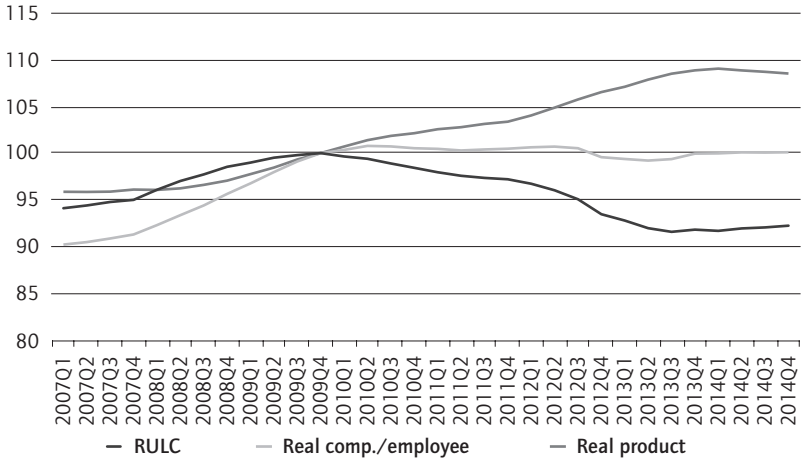


Figure 9 **Real unit labour costs, Spain (2009Q4=100)**



Source: Eurostat and authors' elaboration.

and 11 show very clearly that wage moderation has not caused this hoped-for effect at the aggregate level in Spain. On the contrary, we observe a negative relation between real unit labour costs and employment, showing that lower wages have not kept people in a job. Indeed, this is not surprising. First, a large part of the increase in Spanish unemployment is related to the collapse of specific branches of activity and there is a large

Figure 10 **Real labour costs and unemployment, Spain**

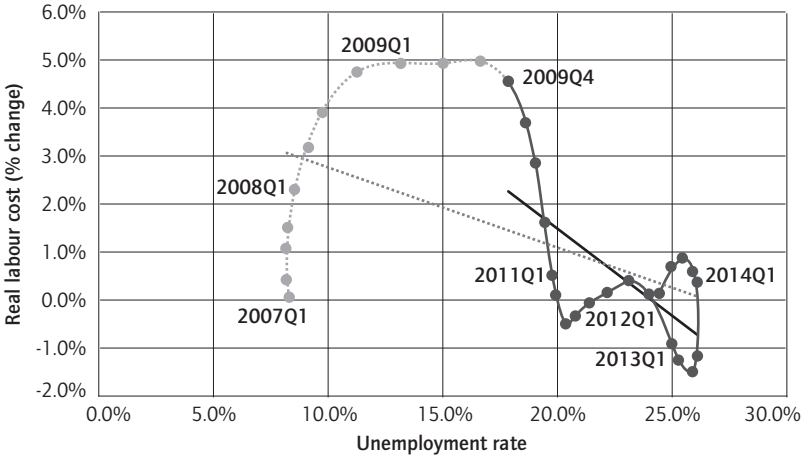
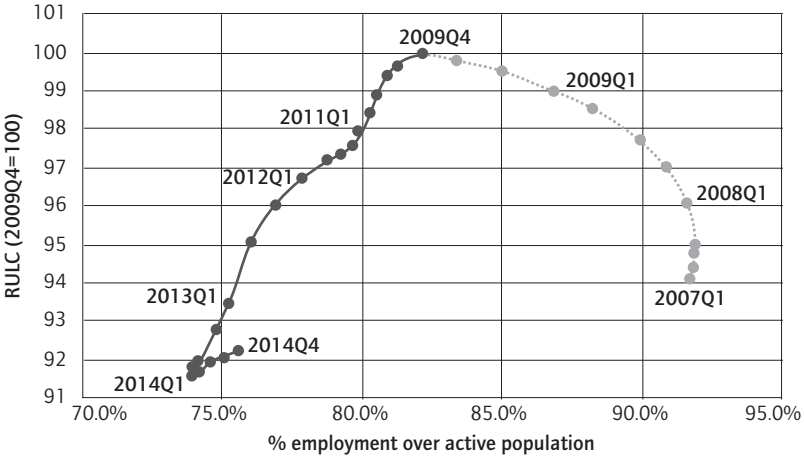


Figure 11 **Real unit labour costs and employment, Spain**



Note: Each point corresponds to a successive quarter. Dotted line: 2007Q1 to 2009Q3.
Bold line: 2009Q4 to 2014Q4. In Figure 10, the dotted trend line corresponds to the whole period, but the bold one only to the second part.
Source: Eurostat and authors' elaboration.

proportion of long-term unemployed with low qualifications. In these cases, cutting pay levels has little effect on employment. Second, labour demand depends more on the expected demand for goods and services produced by firms than on labour costs. But wage restraint has had a

strong negative effect on domestic demand without triggering enough external demand, as we will show in the next section.

Looking at the sectoral level, we have not found any systematic relationship between real wage growth and employment.

First, it is true that between 2007 and 2011, all sectors except for financial and insurance activities and public administration, defence, education, health care and social work activities experienced falls in employment and wage increases. However, the rises in employment in the aforementioned sectors were not accompanied by lower salaries.

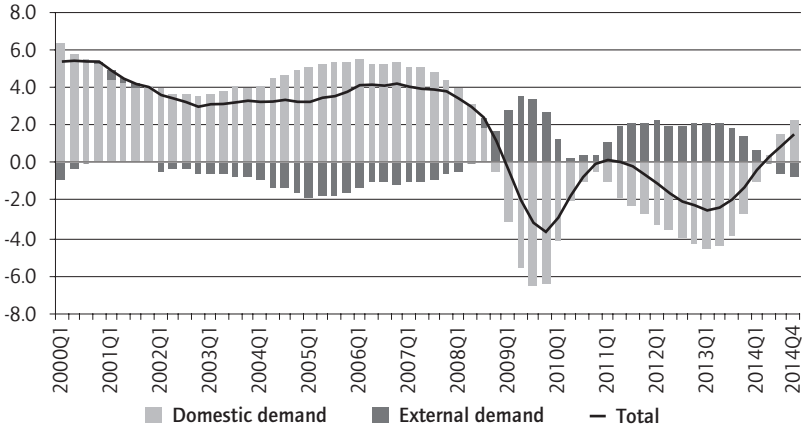
During 2011–2014, real wages fell by 10.5 per cent in real estate activities, and employment grew by 5 per cent in these years. However, the fall in wages in other sectors – such as wholesale and retail, transport, accommodation and catering – was compatible with new employment losses. Furthermore, public administration, defence, education, health care and social work activities changed from rising trends in employment (10 per cent) and wages (2 per cent) in 2007–2011 to a combined fall both in employment (5 per cent) and wages (1 per cent).

4.2 Downward trend in domestic demand

Figure 12 shows the contribution to GDP growth of domestic and external demand in Spain. The period prior to the crisis was characterised by a strong contribution of domestic demand and a negative contribution of external demand. By contrast, the external sector made a positive contribution from 2008 to 2013, but it was not sufficient to offset the negative contribution of domestic demand. Figure 13 represents, in turn, the contribution to growth of the different components of domestic demand since 2010.

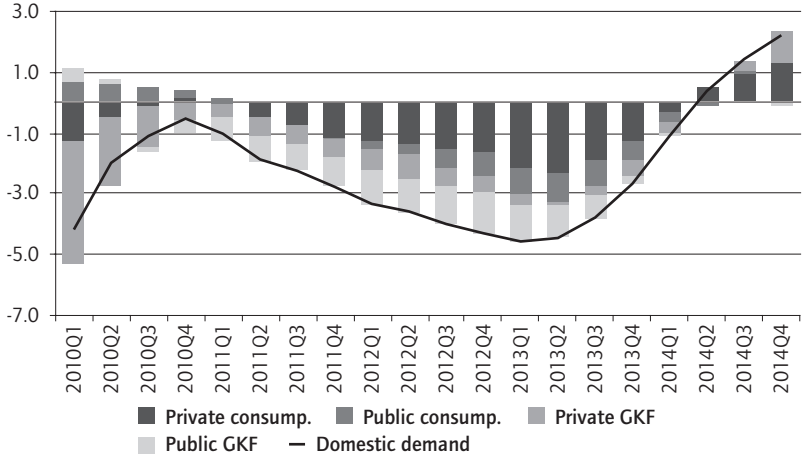
Regarding public demand, the restrictive effect of austerity policies on unemployment is not only derived from the cuts in public employment that we have seen in the previous section, but also from the negative contribution to growth of both public consumption and public investment and their multiplier effect. In real terms, the sum of these two components of aggregate demand was 16.5 per cent lower in 2014 than in 2009. In this same period, the negative contribution to growth of public demand explains 40 per cent of the total drop in domestic demand.

Figure 12 **Contribution of domestic and external demand to GDP growth, Spain, 2000Q1–2014Q2**



Source: Eurostat and authors' elaboration.

Figure 13 **Contribution of components of domestic demand to GDP growth, Spain, 2001Q1–2014Q4**



Note: GKF: gross capital formation
Source: INE and authors' elaboration.

In fact, most of the fiscal adjustment in Spain is due to cuts in public expenditure (24.4 billion euros between 2010 and 2013, or 2.3 per cent of 2010 GDP). The Spanish government has also raised some taxes (direct taxes on income, but above all indirect taxes, such as VAT), but the increase in public revenue (19.4 billion euros, 1.8 per cent of 2010 GDP) has been systematically lower than forecast. In our opinion, this is the consequence of the strong negative impact on effective demand of these decisions, which are instigating a vicious circle of cumulative losses of output and tax revenues, along with a further explosion of the stock of public debt over GDP. Because of this, deficit targets are not being reached and further austerity measures have been taken that have again increased unemployment. The authorities set a fiscal deficit target of 3 per cent GDP for 2013 when the fiscal consolidation strategy was adopted in 2010; however, the current deficit has been 7.1 per cent GDP (or 6.6 per cent without taking into account the bailouts of financial institutions). This failure to meet the target is due mainly to the slump in GDP and the consequent reduction in tax revenues, not to public expenditure.

Private consumption also registered negative growth rates in real terms during this period, especially in 2012 and 2013, when wage restraint was more intense. At the end of 2013, household final consumption was 7 per cent lower than in 2009 in real terms (Figure 14). In those two years, the average negative contribution to growth of private consumption was 1.7 percentage points. Undoubtedly, this drop is the result of decreasing household disposable income, which is derived mainly from wages (Figure 15). During 2008 and 2009, household nominal disposable income increased despite the fall in GDP, mainly due to expansive fiscal policies. However, the savings rate also rose for precautionary reasons and nominal consumer spending fell in 2009. From 2010, household income began to diminish because of job destruction, fiscal consolidation and decreasing wages, and we can see both a reduction in the savings rate and an increase in nominal spending. However, both real and nominal consumption fell from 2011 to 2013.

According to Arce, Prades and Urtasum (2013), the propensity to save decreases during phases of very sharp declines in income, for example because of the existence of minimum consumption thresholds for certain goods. When the level of available funds reaches unusually low levels, households cannot adjust their consumption by the same proportion.

Figure 14 **Private final consumption, Spain (2009Q4=100)**

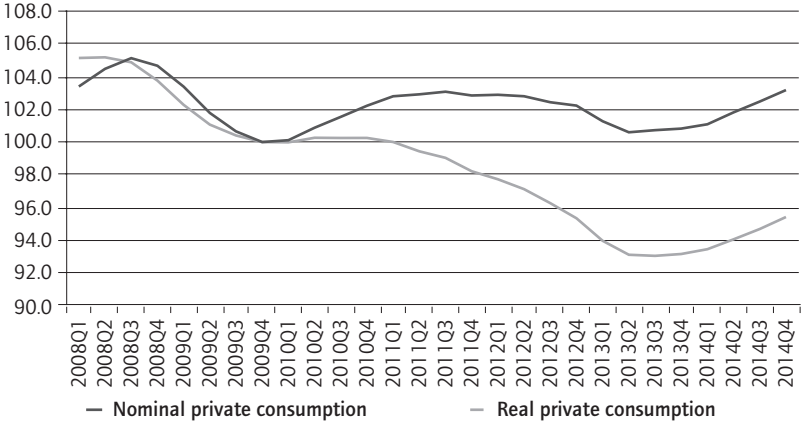
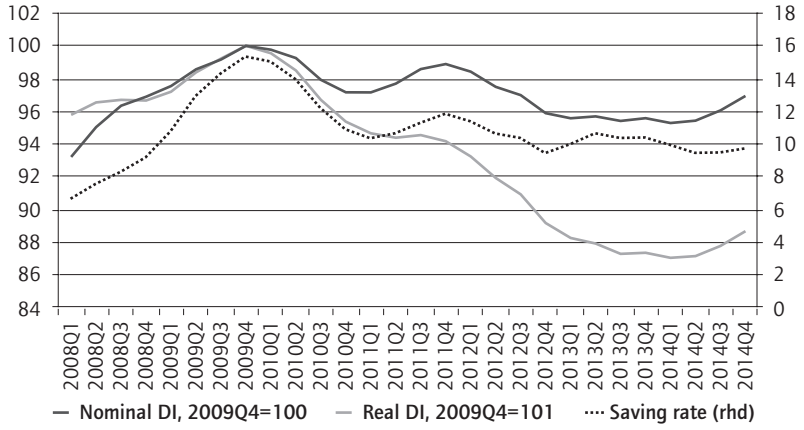


Figure 15 **Disposable income, Spain (2009Q4=100) and savings rate (%)**



Note: DI: Disposable income
Source: Eurostat, INE and authors' elaboration.

Cuts in savings are considerably more pronounced in households with lower incomes, although this is not possible in the case of households with a high level of debt, because they have to set aside a portion of their disposable income to repay it ('forced savings'). Data from the Banco de España confirm that households with outstanding mortgage debt increased their savings rate between 2006 and 2009 by a greater proportion and reduced it by a lower amount than other households in

the period 2009–2011. In other words, they adjusted their consumption more intensively.

This reveals that economies that have become heavily indebted in a short period of time and have experienced large current account imbalances, such as Spain, risk suffering from debt deflation when trying to rebalance their external sector through wage devaluation. When outstanding debt is high, falling wages increase the burden of debt servicing, reducing private consumption, which in Spain is roughly 60 per cent of GDP.

Figure 16 illustrates the evolution of new borrowing and debt servicing over household disposable income since mid-2000. New household borrowing peaks in late 2006, preceding the burst of the real estate bubble, and then it declines until the present, with the exception of a weak rebound in 2011, which is explained by some fiscal benefits linked to the purchase of a house. Since late 2007 debt service payments have been between 10 per cent and 13 per cent of household disposable income. This represents 'forced saving' to cancel past debt and which is going to remain high because most of this indebtedness (around 77 per cent in mid-2014) is long term (mortgage debt).

The consequences of this 'forced saving' on household consumption can be observed in Figure 17. Although total outstanding household debt reached a ceiling in late 2007 and then declined because of deleveraging, 'forced saving' (in Figure 17) remains relatively high, as already noted. With new borrowing at nearly zero, this means that current household net disposable income, after discounting borrowing and debt servicing, is roughly 10 per cent lower. According to our calculations, since mid-2012 Spanish households have been spending (consumption plus gross fixed capital formation) almost the same as their disposable income (after debt servicing), while simultaneously reducing their outstanding debt.

Theoretically, the reduction in consumption expenditure could be compensated by higher investment by firms whose profitability was increasing. In fact, falling labour costs and rising profit margins have led to an increase in the disposable income of Spanish corporations. However, we have seen in Figure 13 that investment made a negative contribution to growth during the whole of this period. This can be explained by the very low levels of capacity utilisation due to stagnating demand and the fact that firms devoted their increasing incomes to reducing debt more than to productive investment. Internal devaluation

has thus had a negative effect on domestic demand, contributing to increasing unemployment.

Figure 16 **Borrowing and debt service payments over households' gross disposable income, Spain, 2000Q2–2014Q4**

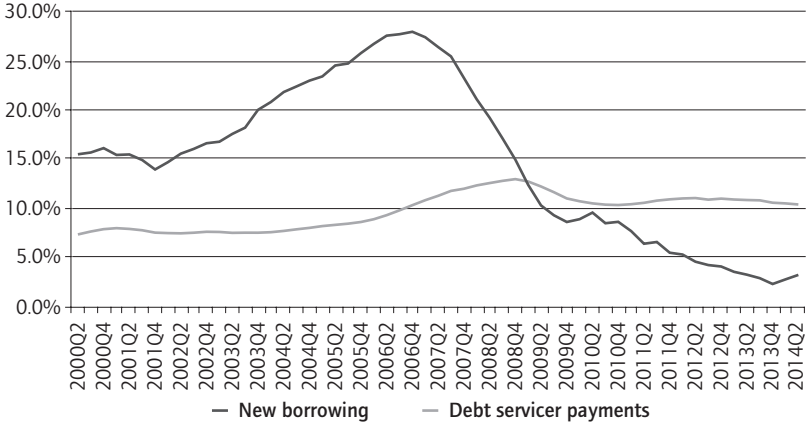
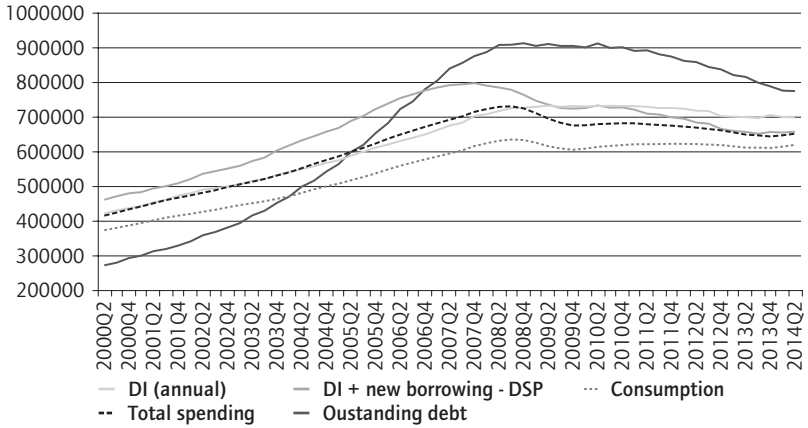


Figure 17 **Household disposable income, outstanding debt and total spending, Spain, 2000Q2–2014Q4 (million euros)**



Note: Disposable income (DI) includes interest paid on bank debt. New borrowing is calculated as the difference between outstanding bank debt in period t+1 minus outstanding debt in t plus paid principal on debt, divided by household disposable income. Debt service payments (DSP) accounts for paid principal on debt plus interest, divided by disposable income as well. Total spending includes household consumption expenditure and gross fixed capital formation.
Source: Banco de España, INE and authors' elaboration.

4.3 Internal devaluation and net exports' contribution to growth

We shall first provide some information about the aggregate evolution and changes in the composition of Spanish exports and imports.

The share of Spanish exports in world exports declined slowly and monotonically from 2.18 per cent in 2007 to 1.90 per cent in 2012, and then rebounded to 1.97 per cent in 2013. Two branches are of particular importance: manufacturing and tourism. With regard to manufacturing, chemical products, vehicles and food and drinks play a central role, and to a lesser extent, refined oil and metal products. The vehicles sector exports 19 per cent of its production, followed by chemical products with 15 per cent. These percentages are larger than in 2005, on average, which indicates that when domestic demand is strong, producers prefer to sell their output within national borders.

Imports show a larger decline during this period. Manufacturing and mining and quarrying (crude oil, particularly) explain almost 80 per cent of the total. Vehicles, chemicals and food and beverages account for around one-third of manufacturing imports in 2013. Imported manufactured goods account for a higher percentage of GDP when GDP grows faster (in 2007) and a smaller percentage when it grows slower.

European and Spanish authorities agreed that falling labour costs would not only help to rebalance the external sector by improving competitiveness, but also lead to a boost from net exports that would be enough to restore economic growth and reduce unemployment. However, these expected results have not materialised. First, although wages and unit labour costs have decreased, real effective exchange rates have improved much less, calculated by production prices or export prices. These are more appropriate measures of competitiveness than relative unit labour costs (Wood 2014). Second, the improvement in external balances observed in Spain since 2010 is explained mainly by the collapse of imports, which is the result of low relative demand, not of the (weak) improvement in competitiveness.

4.3.1 Changes in price competitiveness

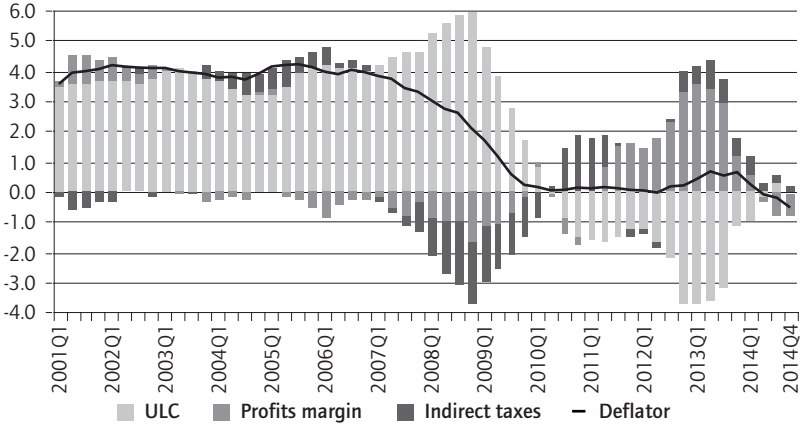
To assess price competitiveness we use the real effective exchange rate vis-à-vis 37 major trading partners, obtained using unit labour costs (REER-ULC), the GDP deflator (REER-DEF) or the price deflator of exports (REER-EXP). Taking 2000 as the base year, Spain registered a real appreciation until the middle of 2008, but its competitiveness has improved since then. Nevertheless, although real appreciation has largely been corrected in terms of unit labour costs, real depreciation has been much lower measured in terms of the GDP deflator, and even smaller in terms of export prices. REER-ULC has decreased by 13 per cent, REER-DEF by 9 per cent and REER-EXP by only 5 per cent. That means that real appreciation from 2000 still stands at 14 per cent if the REER-DEF or the REER-EXP are used, despite the strong wage devaluation. This clearly shows the limitations of the internal devaluation strategy, for at least three reasons.

First, divergences between the real exchange rates based on unit labour costs and those obtained using the GDP or exports deflators correspond to the different degree to which changes in labour costs are passed on to prices in a country and its competitors. Indeed, although inflation rates have slowed down, wage devaluation has only very partially been passed on to prices in Spain: unit labour costs have declined, but prices accumulated a 0.7 per cent rise between 2009 and 2014.

The growth rate of the GDP price deflator depends not only on unit labour costs, but also on profit margins and indirect taxes. Using data from national accounts (Uxó, Paúl and Febrero 2014), we can calculate the contributions of these three components on the rate of inflation, which are shown in Figure 18. Although the average annual growth rate of the GDP deflator was very moderate between 2010 and 2014 (0.2 per cent), it does not reflect the substantial contraction of unit labour costs (–1.4 per cent), due to the significant increase in profit margins registered since the implementation of internal devaluation policies started (1.1 per cent). Furthermore, the increase in indirect taxes has also made a positive contribution to rising prices (0.5 per cent).

Second, the rest of the euro zone has also registered inflation rates clearly below 2 per cent, as measured by the GDP deflator. A symmetric adjustment of competitiveness would require that the countries that previously had weak wage growth and external surpluses have inflation

Figure 18 **Contributions to the growth rate of the GDP deflator, Spain, 2001Q1–2014Q3**



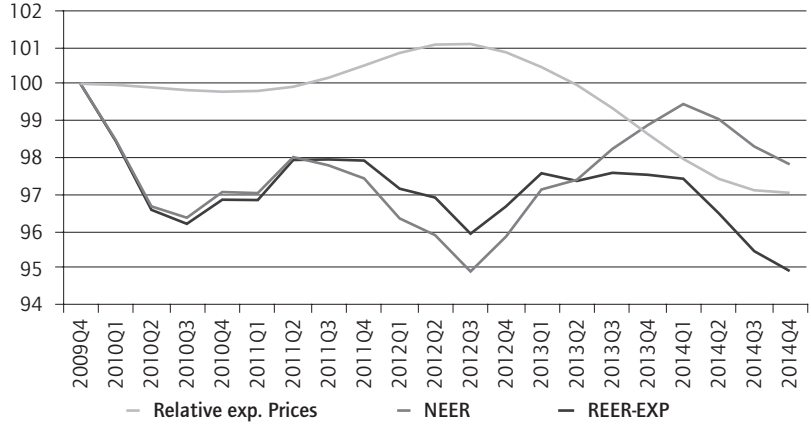
Source: Eurostat and authors' elaboration.

rates above 2 per cent for some time. However, the maintenance in the core of the monetary union of a slow wage growth policy requires peripheral countries to implement bigger wage cuts, causing a deflationary bias in the euro area as a whole.

Third, the appreciation of the euro from mid-2012 to the beginning of 2014. To a large extent, this is also a consequence of the asymmetric nature of the rebalancing of current accounts in the euro area. The attempt to generalise a model of export-led growth across countries, and the continuity of surpluses in the core countries, have caused a nominal appreciation of the common currency, with an adverse effect on the net exports of other members of the monetary union. In Figure 19 the evolution of REER-EXP has been divided between the cumulative change in the relative prices of exports and the variation in the nominal exchange rate, always in relation to the last quarter of 2009. We can see that while the depreciation of the euro contributed, until mid-2012, to reducing the Spanish REER, its appreciation more than offset the improvement observed in relative prices between that quarter and the end of 2013. Mainly due to the change in the monetary policy applied by the ECB, this trend reversed in 2014.

Although the effect on price competitiveness has been limited, it is true that declining wages have led to higher profitability in the tradable goods sector since 2010, and this factor has shifted the decision to increase

Figure 19 **Components of REER-EXP, Spain, 2009Q4–2014Q4**



Note: REER-EXP: Real effective exchange rate-Relative Export Prices Indicator, NEER: Nominal Effective Exchange Rate.
Source: European Commission and authors' elaboration.

production in plants located in Spain, whose output is exported (Salas Fumás 2014).

4.3.2 Changes in exports and imports

Spain went from net borrowing of over 10 per cent in 2008 to net lending in 2013, mainly because of the improvement in its balance of goods and services. This change made the foreign sector go from making a negative contribution to growth before the crisis, to a positive contribution from 2010 to 2013. Some interpret these two facts as confirmation that the strategy of internal devaluation is finally achieving the desired results and that it should be valued positively.

However, the change in the behaviour of the foreign sector is better explained by the collapse of domestic demand than by changes in relative prices (real depreciation), and the collapse of imports has contributed in a fundamental way to the present positive contribution of external demand to growth. So it can hardly be attributed to a 'successful' internal devaluation and it is unlikely that it will suffice to offset the stagnation (or contraction) of domestic demand and initiate a process of sustainable economic recovery.

Table 10 shows the evolution of exports and imports in real terms, and their contribution to economic growth, comparing the periods 2010–2013 and 2000–2007 (we do not consider 2008–2009 when world trade collapsed). Although the average annual growth rate of exports has improved slightly in Spain, there has been a much more substantial change in the behaviour of imports. Specifically, while they were growing in real terms at an annual rate of 8 per cent, negative growth rates were registered between 2010 and 2013.

Table 10 **Exports and imports real rates of growth and contributions to GDP growth, Spain**

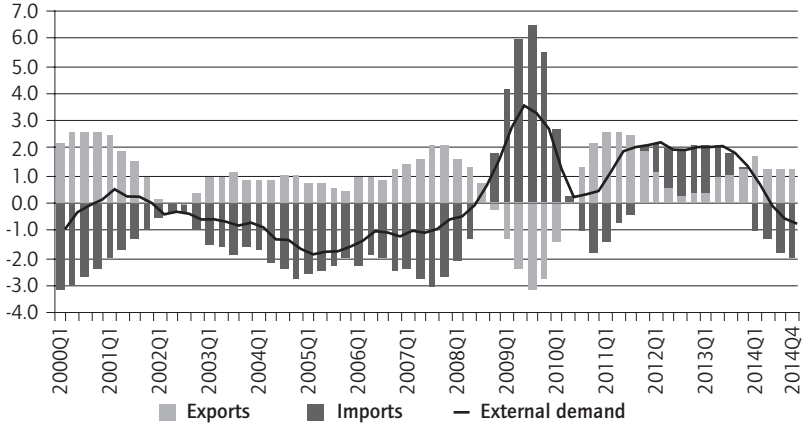
Spain		2000-2007	2010-2013	2014
Contribution to GDP growth	Domestic demand	4.6	-2.9	0.7
	External demand	-0.8	1.6	-0.2
	Exports	1.2	1.1	1.4
	Imports	-2.0	0.5	-1.5
Real rate of growth	Exports	4.9	4.3	4.6
	Imports	7.3	-1.6	5.9

Note: Average of the annual rate of growth corresponding to each quarter.
Source: Eurostat, European Commission and authors' elaboration.

The decline in imports also explains how the external sector has come to make a positive contribution to growth, not the increase in exports (Figure 20). Exports already made a positive, and very similar, contribution to GDP between 2000 and 2007. In contrast, the annual contribution of imports to GDP growth went from –2.0 to 0.5 percentage points.

Furthermore, this change in net exports corresponds almost entirely to the sharp contraction in domestic demand and not to the effects of improved competitiveness. To confirm this hypothesis, Uxó, Paúl and Febrero (2014) estimate an autoregressive distributed lag model in which the Spanish balance of goods and services depends on the ratio between domestic demand in the OECD as a whole divided by Spanish domestic demand, and on the real effective exchange rate. The signs of the long-run elasticities so obtained are the theoretically expected ones: an increase in OECD relative demand improves net exports and a rise in the REER (loss of competitiveness) worsens them.

Figure 20 **Contribution of exports and imports to GDP growth, Spain, 2000Q1–2014Q2**

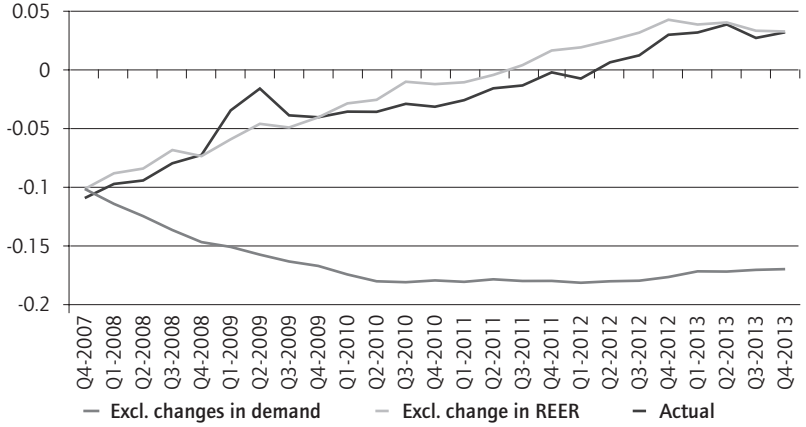


Source: Eurostat and authors' elaboration.

Using these results, in Figure 21 we compare the actual values of net exports with two hypothetical values. First, we calculate the hypothetical evolution of net exports assuming that relative demand has maintained its value at the level of the fourth quarter of 2007 (bold line). Second, we suppose that export prices have remained constant at the level of the fourth quarter of 2007 (dotted line). That is, in the first case we eliminate the effect on the external balance of the different evolutions of domestic demand, while in the second case we remove the effect of variations in competitiveness, and only the changes in relative demand are taken into account. The results are categorical. If there had been no fall in domestic demand in Spain, the rapid correction of the current account deficit would not have happened. In contrast, even holding the relative prices of exports constant, the improvement in the external balance would have been practically the same; that is, changes in aggregate demand alone explain almost all of the adjustment in the external balance.

The behaviour of net exports in 2014 confirms these findings. Once the Spanish economy recovered a positive growth rate, fuelled mainly by the consequences of the ECB's new monetary policy, falling oil prices and a less restrictive fiscal policy, imports began to increase and external demand started to make a negative contribution to growth.

Figure 21 **Net exports, Spain (actual and simulated values)**



Source: OECD Economic Outlook and authors' elaboration.

All of this calls into question the idea that internal devaluation is likely to trigger an export-led resumption of growth in the periphery EU member states. Although the contribution of net exports is indeed positive, it is not sufficient to offset the collapse in domestic demand and unemployment is increasing as a consequence of wage restraint.

5. Concluding remarks

In this chapter, we have focused on two main drivers of skyrocketing unemployment in Spain since 2008. First, structural changes caused by the bursting of the real estate bubble; second, macroeconomic policies induced by the Troika and adopted with the acquiescence of the Spanish government that consist chiefly of fiscal consolidation – supposedly to fight the sovereign debt crisis – and structural reforms, focused mainly on the labour market, to rebalance the external sector by means of internal devaluation and also to encourage firms to hire more labour.

Against the mainstream view that holds that employment increases with labour market 'liberalisation' – falling wages are supposed to increase the amount of labour demanded and wage devaluation is supposed to improve exports because of higher competitiveness – we have found a negative correlation between this decrease in wages, or more broadly, labour costs and employment. Moreover, we have discovered that (i) falling wages have

made no substantial contribution to rebalancing the external sector (net exports have increased because of a fall in imports caused by a shrinking aggregate demand); (ii) there has been no competitiveness gain, chiefly because higher profit margins and higher indirect taxes have offset lower labour costs; and (iii) household disposable income is lower and the burden of debt servicing is higher, weakening private consumption expenditure, which accounts for roughly 60 per cent of GDP. In sum, falling wages have been detrimental to employment because they have contributed to weakening domestic demand.

The crisis has hit the youngest cohorts in the labour market harder, with signs of dualisation. However, although the labour market reforms implemented between 2010 and 2012 did manage to bring down wages and dismantle benefits to employed and unemployed alike, they failed to reduce precarity, particularly among people under 29 years of age. Nearly 50 per cent of the 5.5 million unemployed in Spain have been either unemployed for two years or more or have never worked, and there are very high percentages of employed people with part-time or temporary labour contracts.

The increase in Spanish employment since the second quarter of 2014 should not be interpreted as a positive outcome of internal devaluation policies and falling wages, because the economic and social consequences of this kind of policy were nothing short of devastating between 2011 and 2013. The current recovery has little to do with austerity policy and is more probably due to the change in monetary policy, some easing of fiscal policies and the fall in oil prices. Finally, the new jobs are more precarious and worse paid.

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