

# Explaining performance differences in Europe during the recession

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Thanks to:

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*The recession that hit most countries from mid-2008 was on a scale not seen since the end of the Second World War. In Europe, activity declined very much at the same time, but the slide in growth was not on the same scale in the major European countries: the recession was very pronounced in Germany and in Italy, but affected France and Spain less, while the United Kingdom was somewhere in the middle.*

*Two types of explanation can be given to understand these differences in trajectory between the European countries during the recession. The first gives the leading role to the shocks that affected the European economy: underneath what would appear to be identical shocks in principle, the crisis in fact hit European economies asymmetrically, according to the degree of exposure of their banking sectors to the financial crisis or to the geographical focus of their foreign trade, among other things. The second explanation, on the other hand, points to differences in the transmission of these shocks through the behaviour of the economic players in each country: faced with a shock that was largely of the same nature, it is the behaviour of households and businesses and the reactions of the public authorities that therefore lie behind the divergences in the results observed in Europe, in this view.*

*However, the shocks that hit the European economies would appear to be highly comparable. In particular, the financial crisis brought about a similar tightening of financing terms around Europe, despite differences in the direct exposure of banking sectors from one country to another. In addition, the unprecedented slide in world trade did not show any pronounced differentiation between countries according to the geographical structure of their trade, with the European countries suffering similar declines in their foreign demand.*

*It is therefore the second explanation that largely prevails in the analysis conducted in this article: the origin of the differences in results does not lie so much in the exposure of their banking sectors to the financial crisis or in the size of the property bubbles, as in differences in the reactions of the economic players in the different countries.*

*The singularity of France can be seen in the country's absence of specific handicaps. It was largely spared by the recession, at least in terms of activity, because its growth is less export-dependent than that of Germany, and also because its exports held up better than those of its major European partners in the slide in world trade; it was also hit less hard by the property crisis than were Spain or the UK; its households and businesses were less in debt than their Spanish or British counterparts, and its stimulus plan succeeded in buoying up household purchasing power and therefore demand, unlike in Italy. In employment, however, our country fared less well than Italy and Germany.*

## Explaining performance differences in Europe during the recession

### Widely differing performances among European countries during the crisis

The economic recession that hit most countries from mid-2008 was on a scale not seen since the end of the Second World War. In Europe, activity declined very much at the same time, but the slide in growth was not on the same scale in the major European countries. The purpose of this article is to explain the differences in performance in Europe during the crisis, focusing on the five large European countries: Germany, Spain, France, Italy and the United Kingdom.

### Activity declined at the same time but to different extents

Activity in the main European countries started contracting in Q2 2008, which is to say seven to eight months after the start of the financial crisis triggered in summer 2007 by the subprimes crisis. As a comparison, Japan also entered recession in Q2 2008, while activity in the United States began to fall in Q3. This simultaneous start of the recession in the major developed countries is therefore striking. In addition, the recession was of an unprecedented scale in all the advanced countries, the deepest since the Second World War.

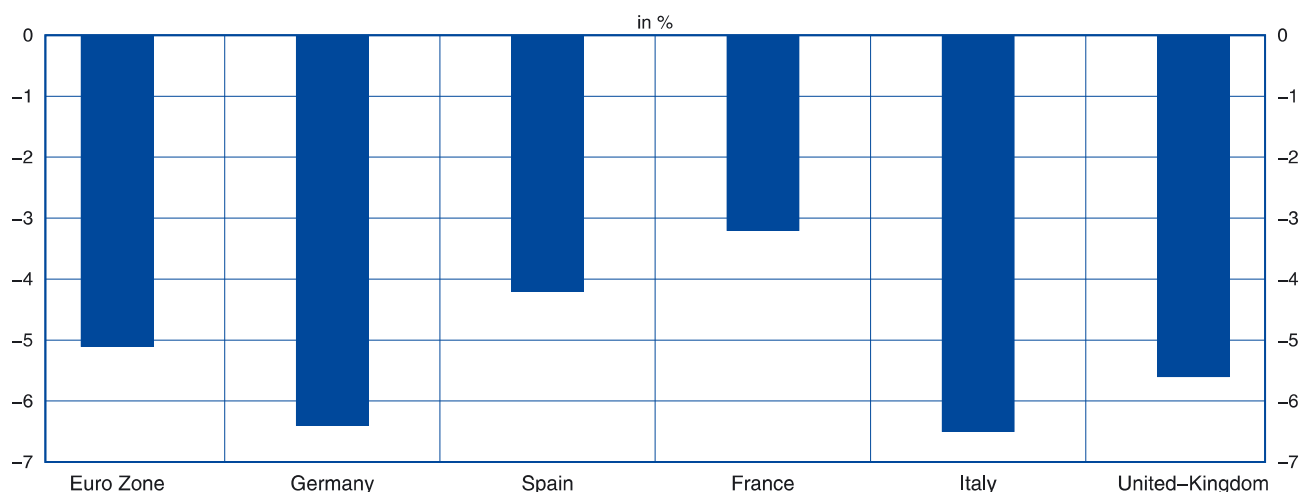
*Performances of the European countries examined over the period Q2 2008-Q2 2009*

To treat all the European countries on an even footing, we have defined the recessionary episode on the basis of a common timeframe stretching from Q2 2008 to Q2 2009, inclusive. Over this period, depending on the country, GDP did not necessarily fall back in each quarter - Germany and France came out of the recession in Q2 2009, for example. But choosing such a set timeframe makes it possible to treat all the countries on an even basis in the face of shocks that hit them simultaneously, in principle. It also allows us to test whether response times were different in the crisis.

*Activity fell mainly in late 2008-early 2009*

Until Q3 2008, the decline in activity was limited and relatively homogenous in the different European countries, but they soon followed relatively diverging courses: significant differences appeared when the crisis deepened in winter 2008-2009.

1 - Cumulative fall in GDP from Q2 2008 to Q2 2009



Sources: Eurostat, INSEE calculations

## Explaining performance differences in Europe during the recession

For example, the decline in activity was particularly marked in Germany, where GDP fell by 2.4% in Q4 2008, then by 3.5% in Q1 2009. In Italy and the United Kingdom, the recession at the start of 2009 was also very pronounced. Spain and France would appear to have held up better, with GDP contracting by around 1% to 1.5% over the same period.

### *The fall in activity was sharper in Germany and Italy*

When we calculate the cumulative total of the falls in GDP over our timeframe (change between Q1 2008 and Q2 2009), a fairly clear ranking is defined (see *graph 1*): Germany and Italy are seen to be the two countries where the recession was the most marked (falls in GDP in the region of 6.5%). The United Kingdom is in a median position (5.6%). Finally, in France and Spain, the fall in activity may be considerable but it is more limited (3.3% in France, 4.2% in Spain). This ranking changes if we take as our reference the growth rates prevailing prior to the crisis: the singular case of France stands out even more (see *box 1* “Compared with average growth before the crisis, France was less affected than its neighbours”).

### **Box 1 - Compared with average growth before the crisis, France was less affected than its neighbours**

A comparison of the falls in activity during the period of the recession provides a ranking of the five large European countries. This must be compared, however, with the situations of these European countries prior to the crisis. Growth was more dynamic then in Spain and the United Kingdom, but more moderate in France, Germany and Italy.

When the drop in activity recorded during the recession is compared with average growth before the crisis, the ranking we observe is somewhat different (see *table*). In this case, Spain is in a

less favourable position. The United Kingdom, which had relatively dynamic growth before the crisis, also moves down the list. On the other hand, Italy and Germany, which had weaker growth rates prior to the crisis, move up the ranking somewhat.

All in all, this examination brings the positions of Germany, Spain, Italy and the United Kingdom closer together. It emphasises, however, the singularity of France during the recession. ■

#### **Loss of growth in relation to the average rate before the crisis**

	%				
	Germany	Spain	France	Italy	United Kingdom
Average quarterly growth between 1995 and 2007	0.4	0.9	0.5	0.3	0.7
Cumulative fall in GDP from Q2 2008 to Q2 2009 inclusive	-6.3	-4.2	-3.3	-6.5	-5.6
Loss of growth in relation to the average rate before the crisis	-8.3	-8.8	-6.0	-8.2	-9.2

Sources: Eurostat, INSEE calculations

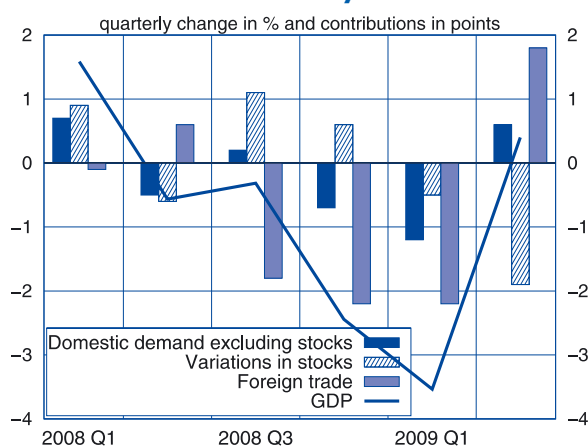
### **Demand: components affected differently during the recession**

An accounting analysis of the decline in activity based on the major components of demand provides an initial insight into the origin of the differences in growth between the European countries during the recession (see *graph 2*).

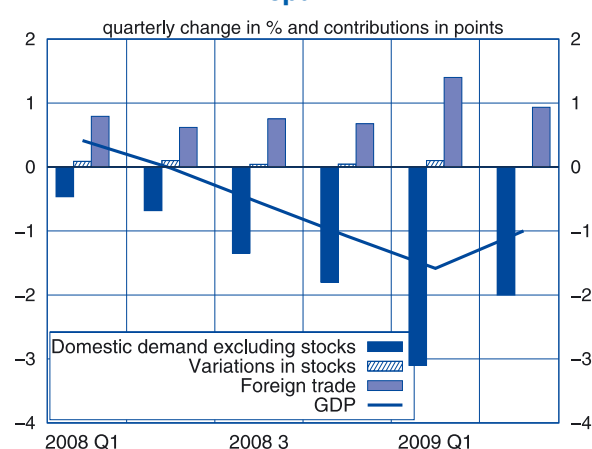
# Explaining performance differences in Europe during the recession

## 2 - Contributions of the major components to GDP changes

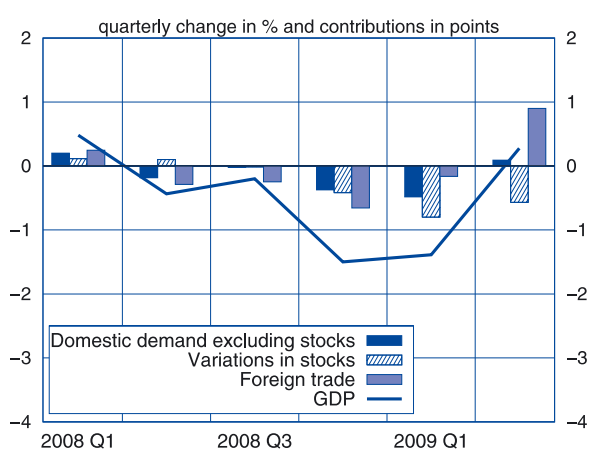
### Germany



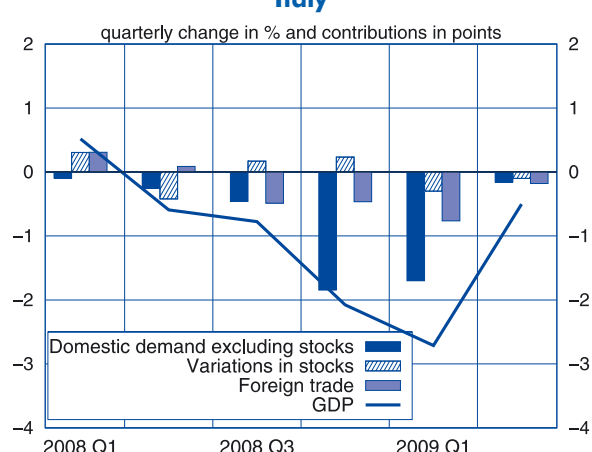
### Spain



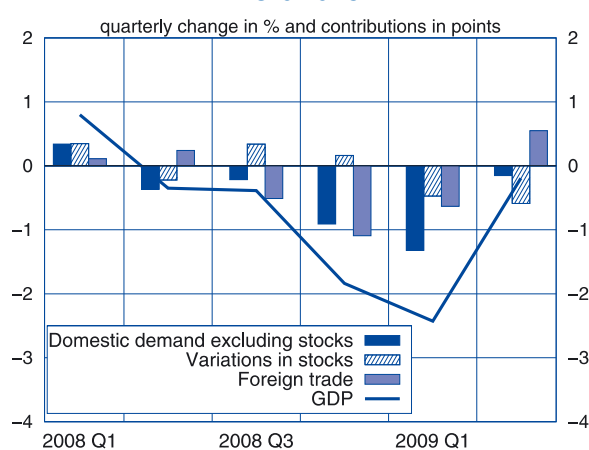
### France



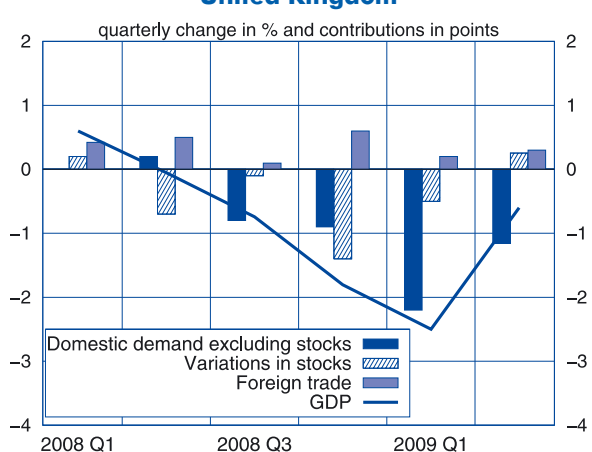
### Italy



### Euro zone



### United Kingdom



Sources: Eurostat, INSEE calculations

*The impact of foreign trade was particularly important in Germany*

The impact of the slide in world trade was not felt in the same way in all the countries. The contribution of net exports to GDP varies widely. In Spain and the United Kingdom, this contribution remained positive due to the sharp fall in imports. In Germany, on the other hand, foreign trade contributed over two percentage points to the decline in growth. In France and in Italy, the contribution of foreign trade to growth remained negative in Q4 2008 and Q1 2009, but more moderately so.

## Explaining performance differences in Europe during the recession

*Inventory was run down earlier in France and the United Kingdom*

Another differentiating point concerns changes in inventory. Stocks were run down in part because of the high inventory levels in certain sectors of activity, in particular automobiles, and because of the sharp contraction in outlets. This was relatively desynchronised. The fall in stocks explains almost half of the slide in activity in France at the turn of the year 2009 and the whole of the drop in the United Kingdom in Q4 2008. In Germany, it was only in the first half of 2009 that an adjustment in stocks was observed.

*Domestic demand had a stabilising effect in France*

Finally, domestic demand played a noticeably different role in the large European countries. In France, the relative buoyancy of domestic demand helped to limit the scale of the recession. In the other countries, however, and notably in Italy, Spain and the United Kingdom, the decline in domestic demand explains a significant part of the fall in activity.

### Supply: a generalised fall in industrial production, but variable in its scale

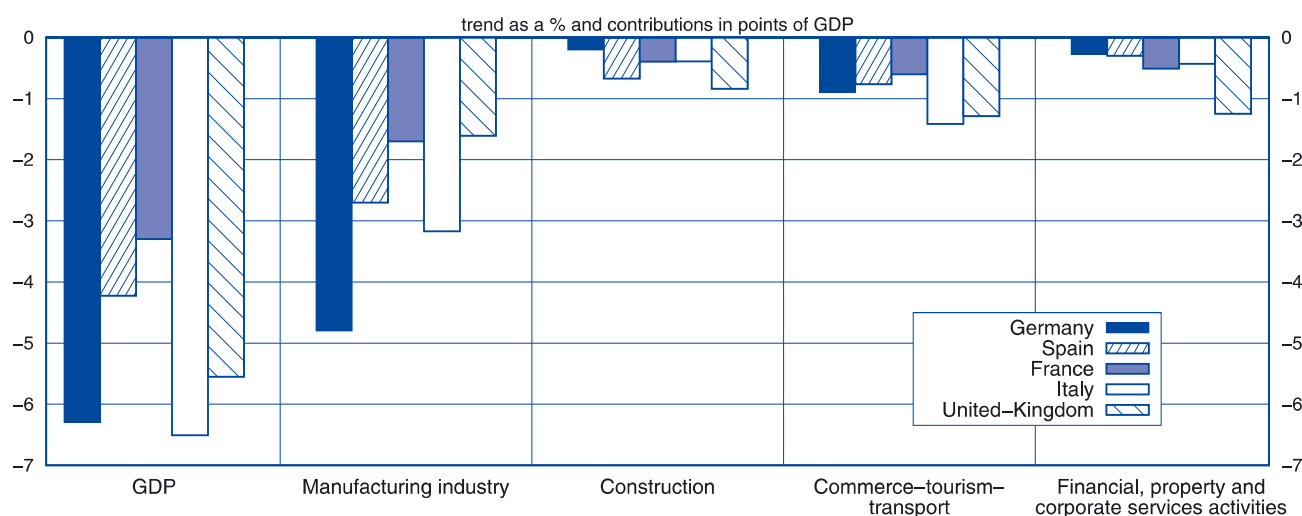
On the supply side, the generalised fall in industrial production was the main explanatory factor of the fall in activity in Europe in accounting terms. But the scale of this effect differed from one country to another: these differences can be explained primarily by national production system structures.

*The contribution of the industrial sector to the fall in activity was greater in Germany and Italy*

The contraction in industrial sector output had a particularly pronounced impact in Germany. In Italy, the contribution of the industrial sector to the fall in activity was also very great (see graph 3). These two countries suffered from the structure of their production systems: as the world trade shock caused a sharper contraction in global demand for industrial goods, and the weight of the industrial sector is greater in Germany and Italy than in neighbouring countries (see table 1).

The United Kingdom seems to have been disadvantaged by the importance of the financial and property sectors to its economy. In Spain, however, the slide in activity in the construction sector seems to have had little impact on growth, given the weight of the sector and the scale of the shock suffered by the housing market.

**3 - GDP change and cumulative contributions of the main branches from Q2 2008 to Q2 2009**



How to read the graph: quarterly contributions calculated using an approximate formula (variation in volume multiplied by the weight in value in the previous quarter).  
Source: Eurostat

## Explaining performance differences in Europe during the recession

This can be partly explained by the support of the public authorities for the public works sector (see box 3 “*Stimulus plans of comparable scale*”). In contrast, investment in residential building did really collapse (see section on “*Differences in Europe during the recession also come from the reactions of domestic demand*”).

*Production system differences can only explain part of the difference in performances*

However, structure effects only explain part of the difference in growth performances. For example, the contribution of the industrial sector to the fall in activity in Germany was three times that in France, but the effect specific to the respective weights of the industrial sectors in France and Germany accounts for only half of this gap.

In addition, to reduce differences in performance solely to structure effects would be to suppose that the shocks affecting the European economies did so in a uniform manner from one country to another, and that the countries reacted in similar fashion. This twofold hypothesis is unlikely: although the origin of the recession does lie in factors that were largely common to the European economies (financial crisis, contracting world trade), the size and nature of the shocks may have differed between countries. The next part explores this idea, before going on to look at the ways in which these shocks were transmitted, which is to say at the behaviour of agents in the crisis.

Table 1

**Breakdown of total value added by key sectors in 2007**

	%			
	<b>Manufacturing industry</b>	<b>Construction</b>	<b>Financial activities</b>	<b>Total</b>
Euro zone	18	6	5	29
Germany	24	4	4	32
Spain	15	12	5 (*)	32
France	12	6	5	23
Italy	19	6	5	30
United Kingdom	12	6	8	26

(\*)Share in 2005 (no later figures on this classification level)  
Source: Eurostat

### Largely common shocks

Seen from the European economies, the financial crisis had a number of major consequences: tougher financing terms for private agents leading to a fall in demand, a property crisis and a slump in world trade in winter 2008-2009. We will examine whether these shocks affected the European countries differently and whether they explain the differences in performance observed during the recession.

### All the countries faced a rise in risk premiums and tighter credit terms.

Characterising the size of the financial shock for each of the European countries is somewhat artificial, given that financial markets are largely integrated. However, it is possible to study the initial shock by measuring the direct exposure of banks to the crisis. This approach must be completed by a description of the shock perceived by private agents through the changes to their financing terms.

## Explaining performance differences in Europe during the recession

*Direct exposure of European banking systems to the financial crisis was not identical...*

The crisis initially spread through Europe via a financial channel. European banks were forced to carry out asset write-downs on those assets linked to American real-estate loans or other assets that were losing value. Switzerland and the United Kingdom were the most exposed countries judging by the write-downs published by the main European banks. Their great exposure is due to the weight of their financial systems and their interdependence with the American system: the amount of the write-downs comes to 14% and 9% of their GDP, respectively. The other countries were less affected in relative terms: in Germany and Spain, the amount of the write-downs has today reached 2% of GDP; the amount is a little lower for France and Italy (respectively 1.5% and 1% of GDP). This is consistent with the IMF appraisal of the asset losses of the French banks as being less than those of their European counterparts. [7]

Derivatives linked to credit default risks <sup>(1)</sup> also reflect the confidence investors on financial markets have in the banks. The estimated default risk for French banks was lower than that of their European counterparts. For example, the risk associated with the junior debt <sup>(2)</sup> of French banks was 36% lower than that for Euro Zone banks at the height of the crisis in March 2009, and 24% lower in June.

The link between the level of write-downs and tightening credit standards is a difficult one to establish. A deteriorating balance sheet may admittedly push a bank to reduce its credit offering to preserve its solvency ratio, but on the European level, the mistrust that paralysed financial markets in the wake of the Lehman Brothers bankruptcy in autumn 2008 was general and affected all the European banks. This general shift largely swept away any differences in initial exposure to the subprime crisis, causing refinancing difficulties for all banking institutions. The financial shock therefore hit the European countries on a comparable scale.

*... but the tightening of financial terms for private agents seems relatively uniform*

Seen from the point of view of households and businesses, the tightening of financial terms was therefore relatively homogenous throughout Europe. As far as businesses are concerned, the terms banks applied to granting loans became tougher in the main European countries. Germany stands out somewhat by its less pronounced tightening than in the other main European countries in the course of 2008 (see graph 4a). Regarding consumer credit, access terms were tightened less in Germany and France than in Italy and the United Kingdom. On real-estate loans, the Spanish banks tightened their terms considerably and lastingly as early as 2007; Germany stands out once again in that terms were tightened less than in neighbouring countries (see graph 4b).

The rises in interest rates on bank loans were considerable and comparable throughout Europe during the crisis. For businesses, the interest rate shock would therefore seem to have been the same in all the countries of Europe, despite the fact that the different banking systems were not affected to the same extent. The slide in interest rates was also synchronised, starting in October 2008 and falling rapidly in all countries: it was the reflection first of the fall in base rates, and then of a move towards more moderate risk premiums (see graph 5). Outstanding credit figures reflect this increased scarcity in supply and in demand, slowing down in all the European countries. This slowdown was particularly pronounced in Spain, where outstanding credit now varies in the same way as that of its major neighbours, whereas it was much more dynamic prior to the crisis (see graph 6).

(1) Measured by premiums on Credit Default Swaps (CDS), securities based on credit default risks.

(2) Relatively risky debt compared with so-called Senior-debt which takes priority in the event of default.

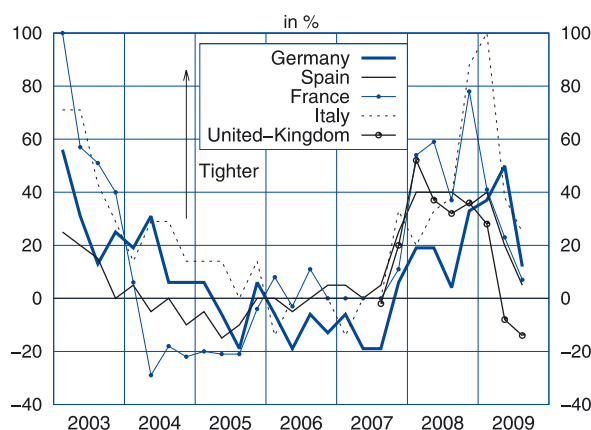


## Explaining performance differences in Europe during the recession

All in all, the financial shock does not seem to be an important differentiating factor in European performances during the recession. However, we shall see later that financial factors did come into play via differences in levels of household and business debt.

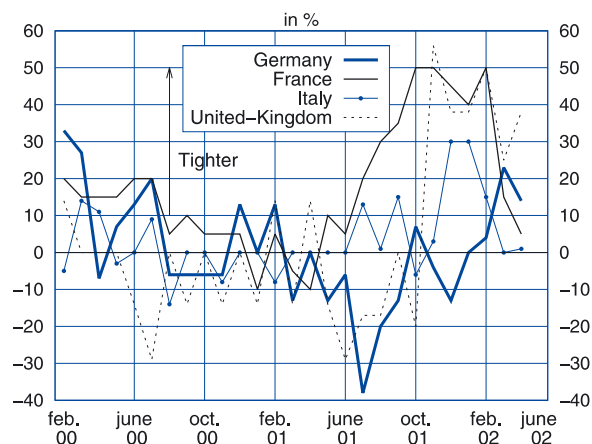
### 4 - Lending terms have been tightened

a - Lending terms to businesses



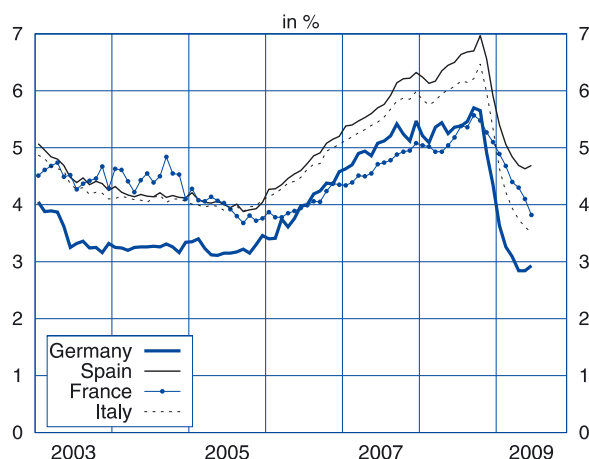
Source: national central banks

b - Mortgage lending terms to households



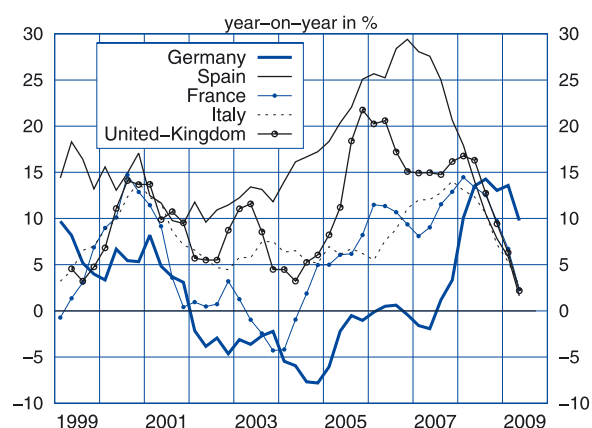
Source: national central banks

5 - Bank interest rates granted to non-financial enterprises



Sources: DataInsight, national central banks

6 - Outstanding bank credit granted to non-financial enterprises



Sources: DataInsight, national central banks

*Germany and Italy spared by the property shock*

The financial crisis had a knock-on effect on property markets on which a large proportion of investments are financed by borrowing. Property markets therefore took a downturn in those countries where the rise in prices and growth in debt had been strongest prior to the crisis. House prices started to fall in particular in Ireland (18%), but also in the United Kingdom (12%), France (8%) and Spain (7%). It should be noted that these falls are moderate when compared with the rises observed over the previous period. The crisis did not trigger any particular correction in Italy or in Germany, however. In the latter, property prices in relation to household incomes had even declined well before the crisis (see graph 7).

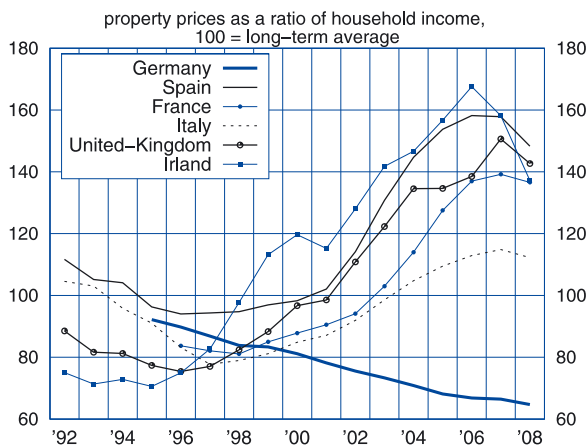


## Explaining performance differences in Europe during the recession

Housing commencements fell very markedly in Ireland, Spain and the United Kingdom, and also in France to a lesser extent. As for property prices, Germany was the exception once again, as there was no initial imbalance to be corrected their (see graph 8).

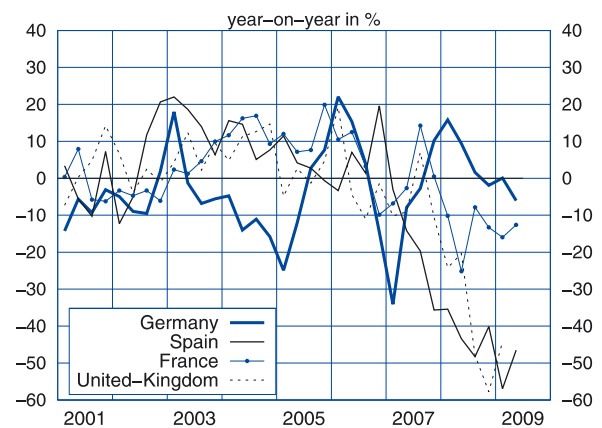
Property sector variations therefore differed between European countries, although the extent of the corrections during the period of the recession remained

### 7 - Rising property prices in most European countries



Source: OECD

### 8 - Housing starts of dwellings



\* building permits for Germany  
Source: DataInsight

modest.

### The slowdown in world trade: a common shock but one that largely penalised Germany and, to a lesser extent, Italy

The crisis was also transmitted to European economies via the world trade channel. The fall in trade is not really an exogenous shock for Europe in that it is partly self-perpetuating: a contraction in activity in one country leads it to scale back its imports, thereby hitting the exports of the other countries whose activity then declines, and so on... However, to simplify the analysis and make comparisons, we will treat the slowdown in foreign demand for the products of the different European countries as being exogenous.

### A fall in the exports of all the major European countries, but different impacts

*An unprecedented contraction in trade*

From mid-2008, the drop in activity around the world led to a contraction in international trade that was unprecedented since the end of the Second World War. Between Q2 2008 and Q2 2009, world trade in goods and services slumped by 13.1% while the slide in trade in goods was even sharper, by 19.0%. <sup>(3)</sup>

*The scale of the fall in exports was greater in Italy and, to a lesser extent, in Germany*

For all the countries, the fall in exports was particularly sharp in Q4 2008 and Q1 2009. It was even more pronounced in Italy and, to a lesser extent, in Germany.

(3) According to IMF figures on world trade in goods and services, and the figures of the Dutch Centraal Planbureau for world trade in goods.

## Explaining performance differences in Europe during the recession

The fall in world trade was not felt by all the countries at the same time. Exports of France, Italy and Spain started to fall in Q2 2008 while those of the United Kingdom and Germany started to decline later. In Q2 2009, there was an upturn in French and Spanish exports, while those of the other countries were still declining slightly.

*In Germany, the fall in exports weighed down more heavily on activity*

This fall in exports weighed down on activity everywhere, but not to the same extent according to the country (see table 2). For example, the fall in world trade affected activity in Germany above all, and in Italy to a lesser extent. It had less of an impact in France, Spain and the United Kingdom.

Although the drop in exports was more pronounced in Italy, it weighed more heavily on activity in Germany: it contributed almost 9 points to the drop in GDP, against over 7 points in Italy. The contribution was comparable in Spain, France and the United Kingdom, at around 4 points of GDP, which is to say half that in Germany.

In accounting terms, these differences in contributions are explained by the weight of foreign trade in GDP. In Germany, for example, exports represent almost half of GDP, against less than 30% in the other European countries. Germany is also more specialised in capital goods, while Spain is more focused on consumer goods (see box 2 “Sector specialisation of the exports of European countries”).

Table 2

### Cumulative fall in GDP and exports, cumulative contributions of exports to growth during the period of the recession

		%		
	GDP	Exports of goods and services	Weight of exports of goods and services in GDP	Contributions of exports of goods and services to GDP
Germany	-6.3	-18.2	47	-8.6
Spain	-4.2	-16.4	27	-4.5
France	-3.3	-15.0	27	-4.1
Italy	-6.5	-24.8	29	-7.4
United Kingdom	-5.6	-12.3	27	-3.7

Sources: national accounts, INSEE calculations

### German exports seem to have distinctly over-reacted to the world trade shock

To move forward in explaining the differences between countries, we must compare the contribution of exports to growth and the trade shock itself. The latter is taken as being the extent of the slowdown in foreign demand, or world demand, for the products of each European country. Traditionally, world demand is calculated as being the sum of the imports of the main trading partners of a country, weighted by the export structure of the country.

*Calculation of a “simulated” contribution of exports to growth*

For each European country, export behaviour is simulated using an equation with the usual determinants of exports: world demand and price competitiveness (see Methodological Annex). This results in a “simulated” contribution of exports to the fall in growth, which is compared to the contribution that was actually observed during the period of recession.

## Explaining performance differences in Europe during the recession

Except for France, none of the models reproduces the effect of exports during the recession precisely: the models underestimate the drop in growth induced by the decline in exports. The unexplained difference is almost zero for France (0.3); it is around 2 points of growth for Spain, Italy and the United Kingdom; it is even higher for Germany, reaching 3.5 points (see table 3).

### *German over-reaction*

The over-reaction of Germany's exports during the recession explains part of its performance gap in relation to the other European countries. This over-reaction translates a behavior that is not shown by the determinants or by the traditional export adjustment delays. Given the method we are using, nor is it linked with the initial size of the shock, which is taken into account in the simulation. Conversely, France's good performance in relation to its partners contributed to making the fall in activity more moderate than that of its partners.

However, this method somewhat overestimates the impact of the impact of the foreign trade shock on growth, because the fall in exports leads mechanically to a drop in imports that lessens the initial impact.

**Table 3**  
**Cumulative contributions of exports of goods and services to GDP during the period of the recession**

		%	
	<b>Contributions observed in national accounts</b>	<b>Contributions simulated using the econometric equations</b>	<b>Difference</b>
Germany	-8.6	-5.3	-3.3
Spain	-4.5	-2.7	-1.8
France	-4.1	-3.8	-0.3
Italy	-7.4	-5.3	-2.0
United Kingdom	-3.7	-2.1	-1.6

Sources: national accounts, INSEE calculations

### **The geographical orientation of trade did not play a role during the crisis**

The "simulated" contribution of exports to the fall in growth as explained by the determinants is around 5 points in Germany and in Italy. It is lower in the other countries. These differences could be explained by the trade shock affecting the European countries asymmetrically, depending in particular on the geographical orientation of trade in the different countries. For example, a country exporting more to a zone or economy that had suffered a particular slowdown would be at a disadvantage when compared with a neighbouring country continuing to export to more dynamic zones.

### *The contribution of exports is broken down into an "orientation" effect and a "weight" effect*

To test this hypothesis, we take the econometric export equations and we replace the world demand specific to each country by an "average" world demand: this first stage makes it possible to trace the export trend that would have been observed in the absence of any geographical orientation effect. The contributions of exports to growth are then recalculated, applying an identical average weight of exports in GDP to all the countries: this second stage cancels out differences in the weight of exports.

The simulated contributions can thus be broken down in this accounting framework into a "geographical orientation" effect and a "weight" effect (see table 4).

## Explaining performance differences in Europe during the recession

**Table 4**  
**Contributions of exports of goods and services to GDP from Q2 2008 to Q2 2009 inclusive, simulated by the econometric models**

	Contributions simulated using the equations	Contributions simulated with average world demand and weight	Difference	Geographical orientation effect	Weight effect
Germany	-5.3	-3.2	-2.1	0.1	-2.3
Spain	-2.7	-2.8	0.1	0.0	0.1
France	-3.8	-3.9	0.1	0.0	0.1
Italy	-5.3	-5.0	-0.4	-0.1	-0.2
United Kingdom	-2.1	-2.0	-0.1	0.2	-0.3

Sources: national accounts, INSEE calculations

*Geographical structures of exports are very similar and did not come into play*

For all the countries, the effect of the geographical orientation of exports on the fall in activity was very small (see table 4). In fact, the characteristics of the world trade shock were largely common to the different countries and the profiles of world demand for the products of each of them were very similar during the recession (see graph 9). This can be explained on the one hand by the fact that the geographical structures of exports are very similar, given the economic similarities between the five European countries being studied. In addition to this, the crisis hit the trading partners of Europe in a comparable way.

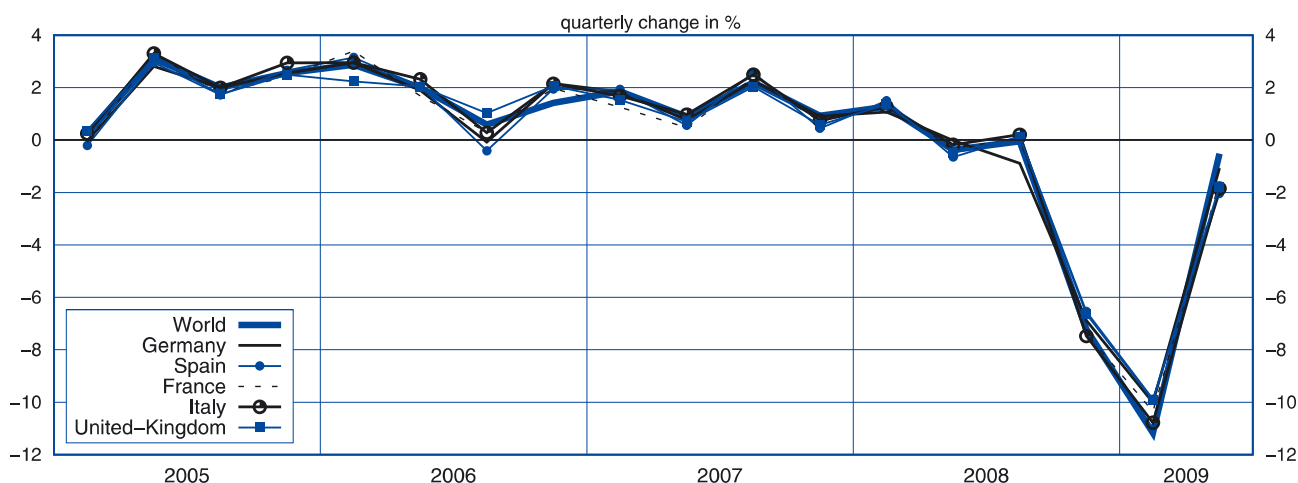
*But the export “weight” effect distinctly penalised Germany*

The “export weight” effect is also low for the countries studied here (around 0.1 points of GDP), except for Germany, where the difference is over 2 points of GDP: if German exports had had a weight in the country’s GDP close to the average for the Euro Zone, their simulated contribution to GDP would have placed Germany in the middle of the European pack (see table 4).

\*  
\* \*

All in all, the geographical orientation of trade cannot explain the differences observed between countries during the crisis. From this point of view, the foreign trade shocks that hit the European economies seem very similar. However, the differences arising from the weight of exports in GDP are clear. To this must be added the specific behaviour of exports, i.e. their degree of “overreaction”, which was particularly strong in Germany. In contrast, French exports suffered less, in comparative terms, from the fall in world trade.

### 9 - World demand fell at the same time and to equal extents



Source: DGTPE

## Explaining performance differences in Europe during the recession

### Box 2 - Sector specialisation of the exports of European countries

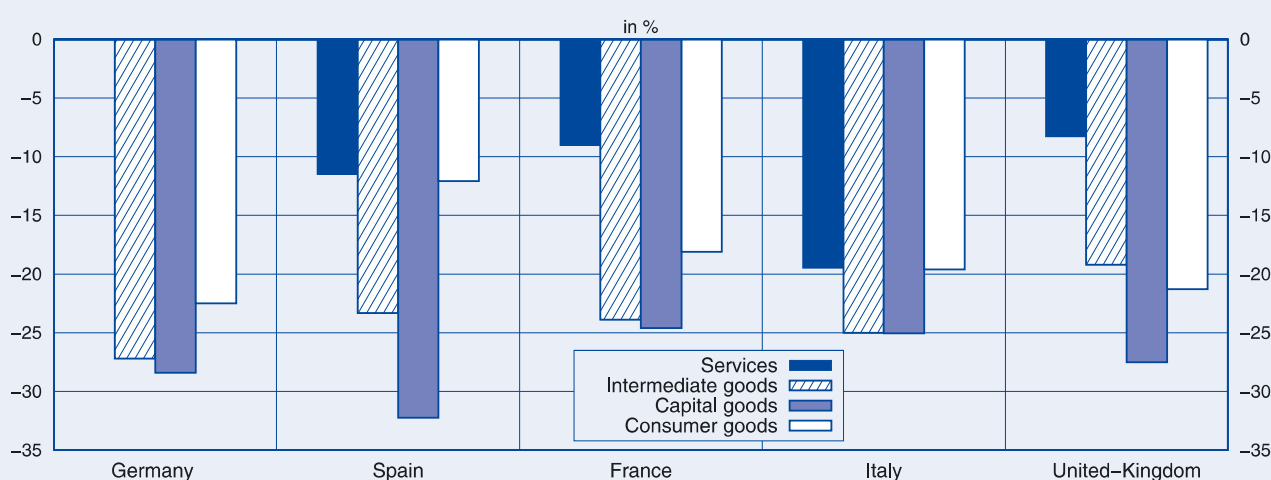
Over the period from Q2 2008 to Q2 2009, the fall in exports of intermediate goods was rather similar in the different European countries (see graph A). Likewise, the drop in exports of capital goods was relatively comparable, except in Spain where it was a little more pronounced. The significant differences concern consumer goods and services.

While the proportion of intermediate goods in exports of European countries is very similar, the same cannot be said of capital goods and consumer goods (see graph B): Germany in particular is more specialized in capital goods than the other

countries. In contrast, Spain is more specialized in consumer goods, the sector in which the fall in exports was the least severe during the crisis.

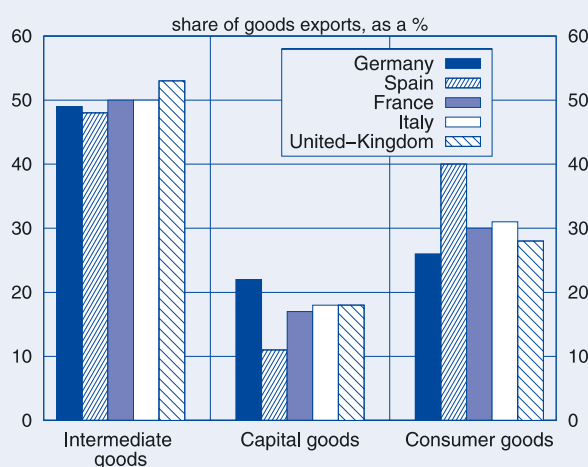
All in all, this sector specialisation can contribute to explaining the German case. On the worldwide level, demand for capital goods suffered much from the sharp contraction in investment. This affected Germany more particularly because the structure of its trade is more focused on this type of goods. However, given their greater weight in exports, it is the exports of intermediate goods that contributed most to the fall in activity in all countries. ■

#### A - Fall in exports per product between the start of 2008 and mid-2009



Sources: national statistical institutes, Eurostat, INSEE calculations

#### B - Spain is more specialised in consumer goods and Germany in capital goods



Source: Eurostat (data 2007)

## Explaining performance differences in Europe during the recession

### Differences in Europe during the recession also come from the reactions of domestic demand

Export behaviour is therefore a first factor explaining the differences observed in Europe during the recession. But adjustments to domestic demand may also have had an influence on the paths in European countries: in particular, adjustments to production factors by businesses and the behaviour of households in consumption and investment in housing. This part therefore aims to clear up these points by focusing on the transmission of the shocks via the private demand channel. The reaction of public demand will also be taken into account as most European governments, with the exception of Italy, decided on and implemented large stimulus plans during the crisis.

### Situation of businesses: debt and falling investment

European businesses had to cope with major difficulties from the beginning of 2008 onwards: financing conditions became tighter while sales outlets shrank on domestic and export markets alike. To these difficulties were added the imbalances that already existed: even before the crisis, corporate debt levels were high in Spain and the United Kingdom.

*Corporate investment collapsed during the recession*

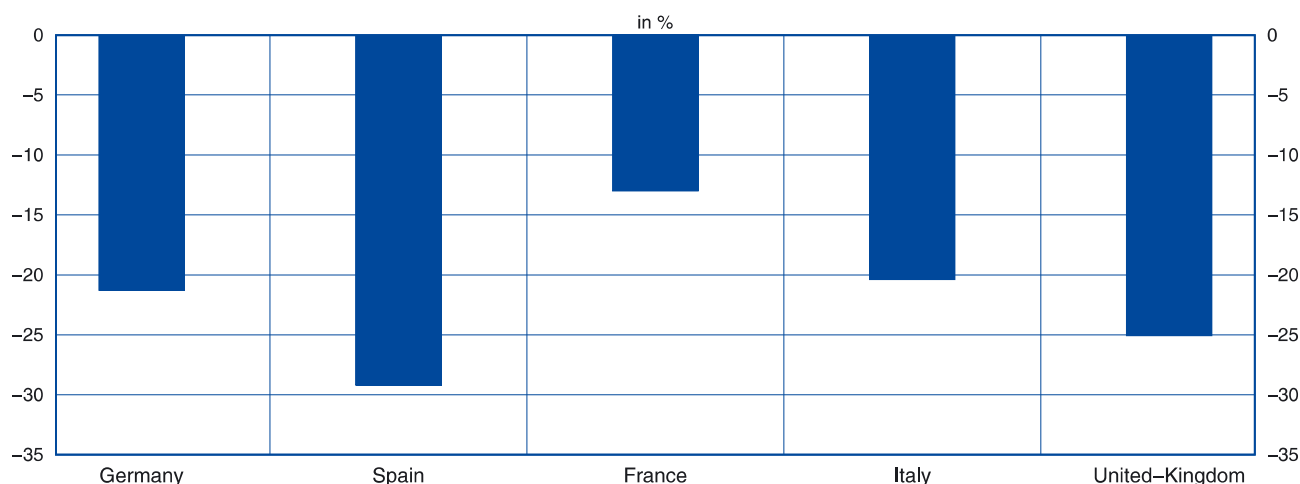
Faced with these difficulties, European entrepreneurs scaled back their investment in capital goods sharply. The fall was spectacular in Spain (almost -30 %, see graph 10) but also in Germany, Italy and the United Kingdom, with drops of over -20%. In France, the fall in investment was smaller (-13%).

In Spain and in Germany, the fall was particularly marked in Q1 2009 and partly explains the sharp drop in domestic demand at the start of the year in both countries. In the United Kingdom, investment reacted with a slight delay, falling sharply in Q2 2009 and thereby extending the contraction in activity in Britain.

*There was an over-adjustment in corporate investment in capital goods in the United Kingdom and especially Spain*

This fall in investment during the recession is largely due to that in activity and should be compared with the contraction in GDP recorded in the different European countries. In the short term, the fluctuations in investment tended to amplify those in activity by the so-called "accelerator" mechanism.

**10 - Cumulative fall in investment in machinery and transport equipment during the period of the recession**



Sources: national statistical institutes, INSEE calculations

## Explaining performance differences in Europe during the recession

Yet it is not always in those countries where activity declined the most that investment expenditure decreased most sharply. This can be seen in graph 11 which compares the cumulative fall in investment in capital goods with the fall in GDP during the recession.

The accelerator effect therefore seems to be distinctly different depending on the country. It is high in Italy and Germany at around 3 (a 1-point drop in activity results in a 3-point contraction in investment). It is higher in France and even higher in the United Kingdom. Above all, the adjustment in corporate investment was the most drastic in Spain during the crisis: the accelerator there is over 6.

*Probably because the debt-level of non-financial enterprises before the crisis was very high in Spain and the United Kingdom*

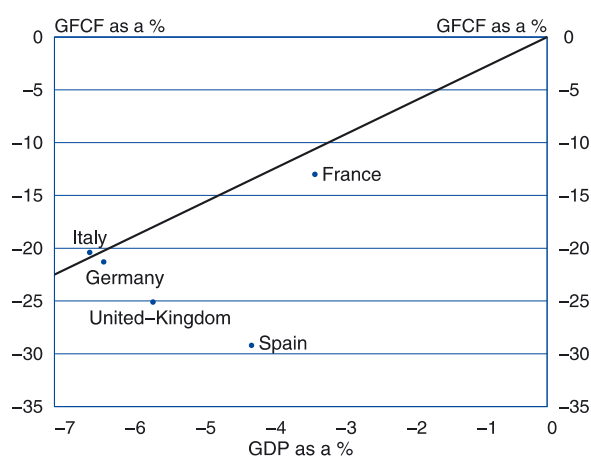
Companies were heavily in debt before the beginning of the crisis in Spain and the United Kingdom, the two countries where capital investment adjusted the most sharply to the fall in activity. There is therefore a negative relationship between the debt ratio of companies before the crisis and the variation in investment then observed (see graph 12). The level of debt may have led to even greater falls in investment as the financing terms for companies generally deteriorated.

In addition, Spain was on a trend of very sustained investment before the crisis: the investment rate among non-financial enterprises (including investment by companies in construction) had reached 37% at its highest in 2007, against a rate of between 18% and 25% in the other four countries (see table 5). This level of investment would seem to have been reached mainly via external financing of the companies: evidence of this can be found in the high debt ratio and the fall in the self-financing ratio <sup>(4)</sup> between 2000 and 2007, sliding from 70% to 30%.

All in all, investment was adjusted more sharply in those countries where the financial situation of businesses was the most fragile before the crisis, which is to say in Spain and, to a lesser extent, in the United Kingdom.

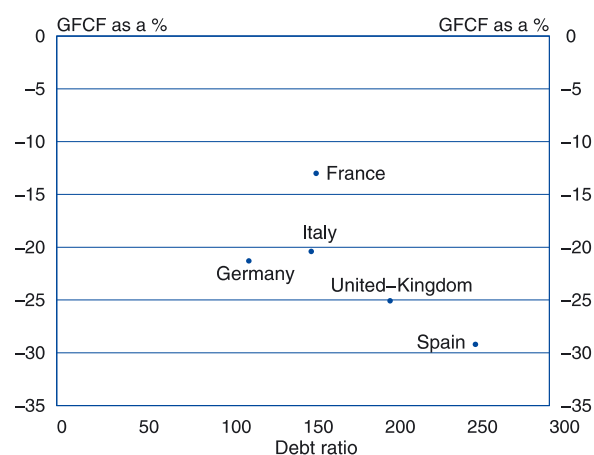
(4) The self-financing rate is the ratio of the gross savings of businesses to their investment.

**11 - Comparison between changes in GDP and in investment in machinery and equipment during the recession**



Sources: Eurostat, INSEE calculations

**12 - Debt ratio in 2007 and change in investment in machinery and equipment during the recession**



How to read the graph: The debt ratio is defined here as the sum of the loans and securities other than shares in the liabilities of non-financial enterprises in relation to the value added of non-financial enterprises.

Sources: Eurostat, INSEE calculations



# Explaining performance differences in Europe during the recession

Table 5

Widely varying situations of businesses prior to the crisis (2007 figures)

	Germany	Spain	France	Italy	United Kingdom
Investment rate	19	36	21	25	18
Self-financing ratio	102	30	70	54	125

Sources: Eurostat, INSEE calculations

## Variable labour market adjustments from one country to another

Labour markets in the European countries show striking differences in the ways they adjusted during the recession. These adjustments were made either through employment itself (Spain, France and the United Kingdom) or via wages (Germany and Italy), and the scale of the adjustments was also variable.

*Employment falling in Spain, maintained in Germany and Italy*

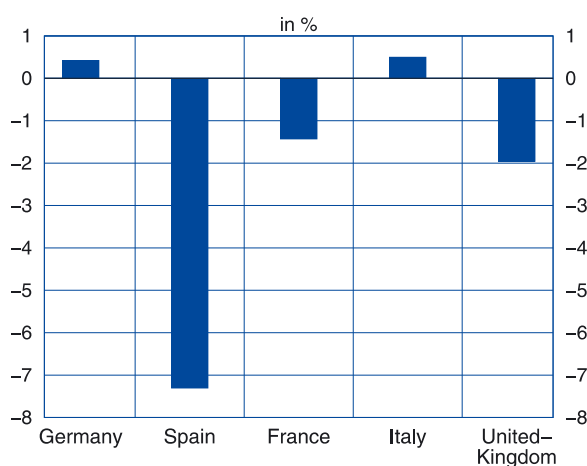
In Germany and in Italy, there was a very strong tendency to hold onto labour through employment support systems (see the focus in the "Germany" note). In France and the United Kingdom, employment adjusted to the fall in activity. In relation to the historic contraction in GDP, the reaction in employment here does not appear to be either stronger or more rapid than in the past. In Spain, however, the adjustment in employment was very violent: employment fell more than GDP over the period Q2 2008 - Q2 2009 (see graphs 13 and 14). Consequently, the unemployment rate soared from 9.2% at the start of 2008 to 17.9% in Q2 2009.

*Average wages per head fell back slightly in Germany and in Italy*

In Germany and in Italy, the level of employment was maintained at the expense of wages. Between the beginning of 2008 and mid-2009, the average wage per head (SMPT) stood still in Germany and fell by 0.4 % in Italy. In contrast, it continued to rise in the other three countries (see graph 15). In all the countries, the biggest shock in terms of average wage per head came in Q1 2009, when it fell almost everywhere.

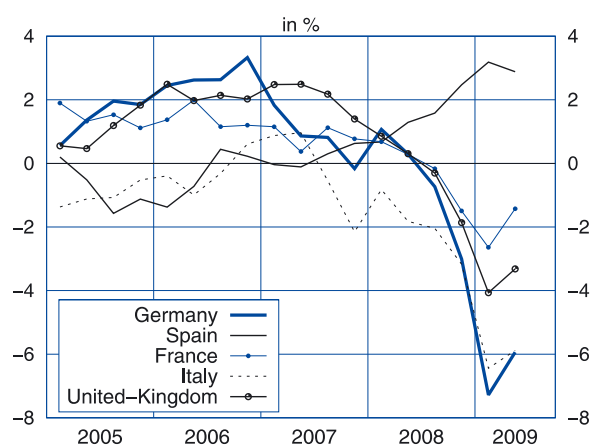
The singular case of Spain should be taken with care in that the variations in GDP, employment and total wages would seem to be very much disconnected.

13 - Changes in employment during the recession



Sources: Eurostat, INSEE calculations

14 - Productivity

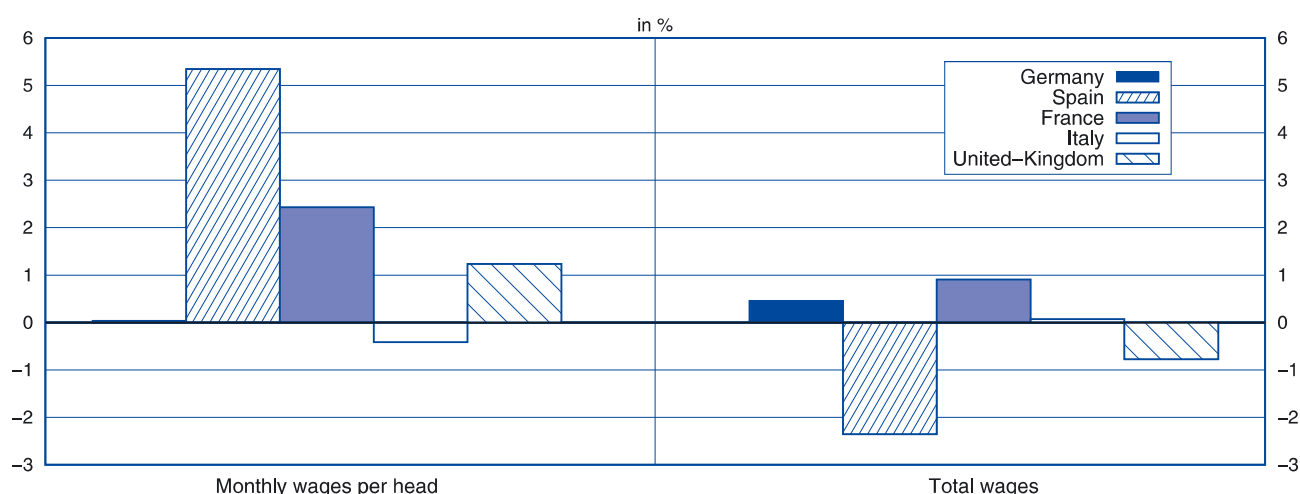


Source: Eurostat

## Explaining performance differences in Europe during the recession

Once the changes in employment and in wages per head have been taken into account, total wages fell in Spain and the United Kingdom between the beginning of 2008 and Q2 2009. They stayed level in the other countries. Ultimately, it is in France that, despite the fall in employment, total wages held up best during the recession.

### 15 - Changes in wages per head and total wages over the period of the recession



Sources: Eurostat, INSEE calculations

### Very different trends in household purchasing power, accentuated by public measures and automatic stabilisers

Changes in wage income are not the only factor explaining variations in the purchasing power of European households during the recession. For instance, in 2009 purchasing power held up in all the European countries except Italy, notably thanks to the various stimulus plans and to the impact of automatic stabilisers.

#### *No budget support for purchasing power in Italy*

Graph 16 compares variations in household income and those in total wages for the years 2008 and 2009. The gap between income and total wages is made up of the incomes of self-employed workers, income from capital, taxes paid and benefits received.

The latter two elements include the impact of the various purchasing-power support measures implemented in the stimulus plans. At the start of 2009 in Europe, State measures were implemented in all European countries, except Italy (see box 3): higher social benefits, distribution of one-off bonuses and tax cuts. The gap between household income and total wages also includes the impact of automatic stabilisers, meaning the fact that during a recession, taxes and social benefits, notably unemployment benefits, soften the shock on household income.

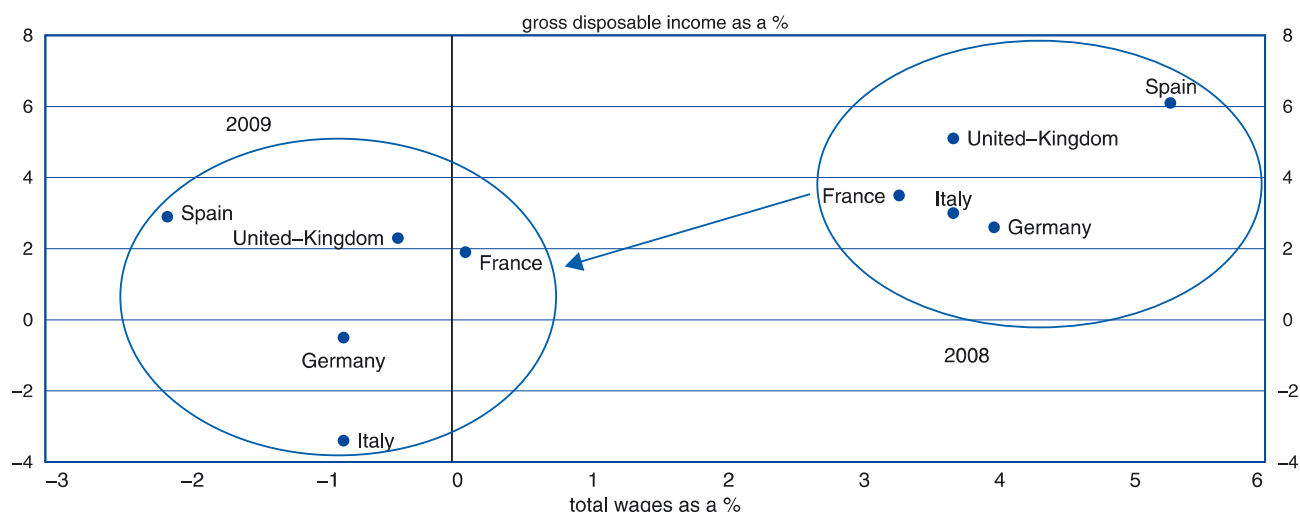
The gaps between the changes in income and total wages widened on the whole in 2008 and 2009, showing the effect of the stimulus measures and automatic stabilisers. In Spain in particular, household income continued to progress despite total wages falling back. This was also the case in the United Kingdom

## Explaining performance differences in Europe during the recession

and France. In Germany, income fell despite the support of the automatic stabilisers. Italy was the exception: income fell more than total wages, due to the drop in non-wage income and the absence of any support measures.

All in all, the differences between the national measures and different reactions on the labour markets contributed to widening the differences in incomes between countries.

### 16 - Income gaps increase in 2009



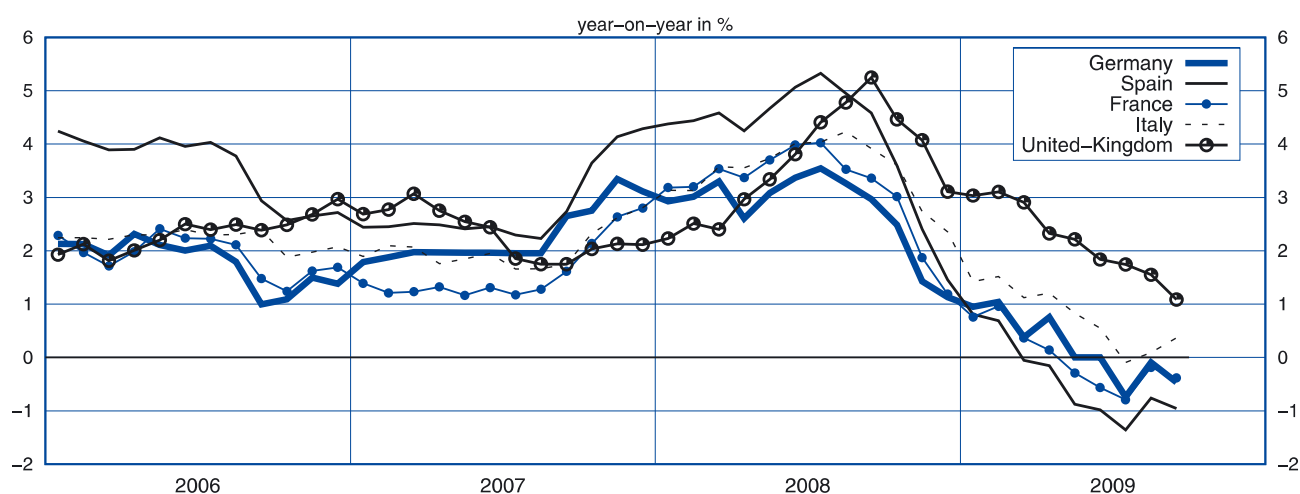
How to read the graph: in 2009 in Spain, the total wages received by households diminished by over 2% (horizontal axis). However, household disposable income progressed by almost 3% (vertical axis).

Sources: national statistical institutes, INSEE calculations and forecast

### The drop in inflation benefited household purchasing power

Household purchasing power was also boosted by the almost-generalised fall in inflation (see graph 17). Inflation slipped under the effects of falling commodity prices until the end of 2008 and general weakness in demand. With the exception of the United Kingdom, where inflation remained higher, prices contributed to buoying up purchasing power, with a greater effect in Spain.

### 17 - Generalised decline in inflation

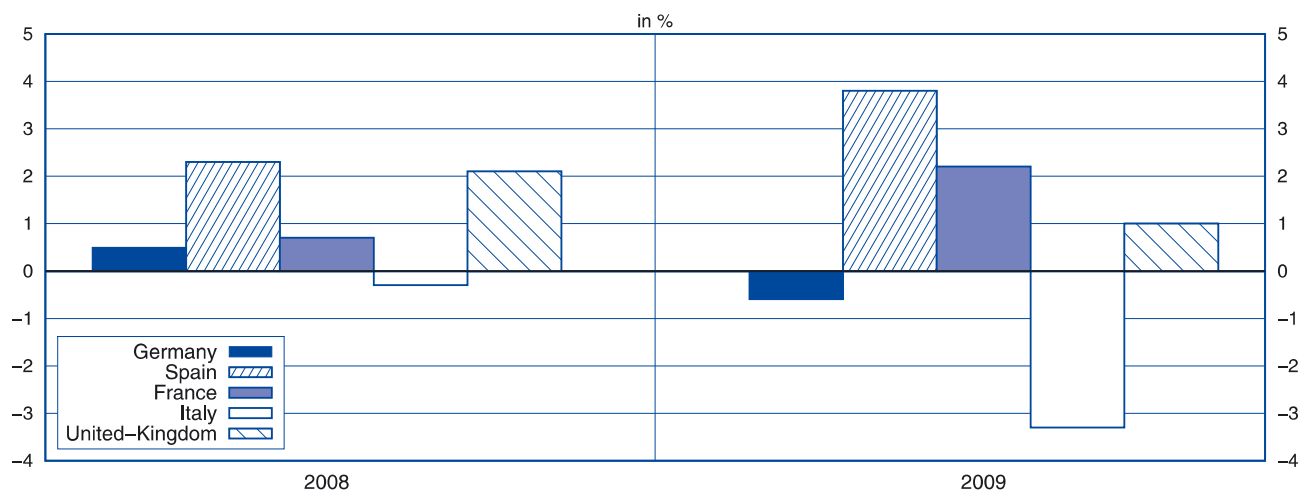


Source: Eurostat

## Explaining performance differences in Europe during the recession

On the whole, once income and price effects are taken into account, household purchasing power continued to rise in 2008, except in Italy. In 2009, it should continue to rise in Spain, France and the United Kingdom, fall back very slightly in Germany, and drop sharply in Italy (see graph 18).

### 18 - Purchasing power seems to be holding up, except in Italy



Sources: national statistical institutes, INSEE calculations and forecast

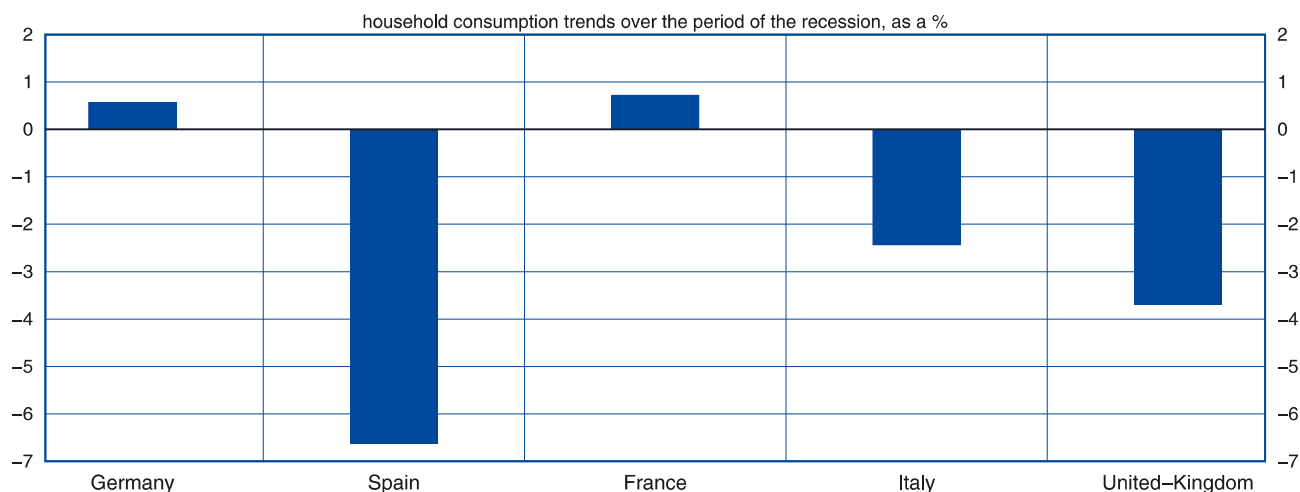
### Household demand: softening the crisis or amplifying it

Although buoyed up by stable or rising purchasing power, except in Italy, household demand did not increase in all the European countries.

*In the United Kingdom and Spain, consumption was weaker than purchasing power changes might have suggested*

In Italy, the decline in consumption was fairly consistent with that in purchasing power. In Spain and the United Kingdom, on the other hand, purchasing power did not collapse, despite the deterioration in the labour market, but household consumption did decline distinctly over the quarters of the recession (see graph 19). In Spain, the additional income provided by the stimulus plan measures would seem to have gone largely into savings. Two major factors

### 19 - Household consumption holding up in France and Germany



Sources: Eurostat, INSEE calculations

## Explaining performance differences in Europe during the recession

explain the Spanish and British situations: the rise in unemployment, which was spectacular in Spain and far from negligible in the United Kingdom, but also higher household debt than in other countries. In addition, consumption may have been hit by a wealth effect, via the recent fall in property and financial asset values: in the United Kingdom, a drop of 10% in household wealth reduced consumption there by about 2%. In contrast, the effect on consumption in France would seem to be less, the link between wealth and consumption being weaker there [2].

*Consumption in France and Germany had a stabilising effect on activity*

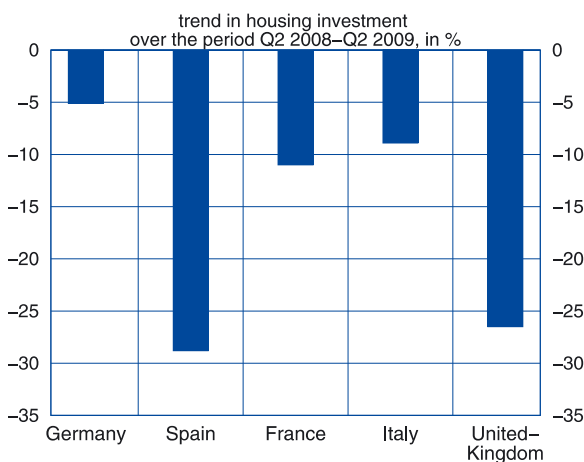
Conversely, consumption in Germany should be up in 2009 despite a slight drop in incomes. This buoyant consumption is linked with the introduction of a scrappage allowance, boosting automobile purchases in H1 (see box 3). Finally, thanks to purchasing power remaining on the rise overall, French households increased their consumption regularly between Q1 2008 and Q2 2009 (by about +0.0 to +0.2% a quarter). This variable therefore played the role of a stabiliser on activity in France throughout the recessionary episode.

*Residential investment collapsed in those countries where households were the most in debt*

In the countries where consumption dropped sharply, there was also a sharp contraction in residential investment (see graph 20). The financial situation of households would therefore seem to have had a great incidence on these two variables. The biggest falls in overall household demand are to be found in the United Kingdom and Spain, countries where households had high levels of debt and where they felt the tighter credit conditions particularly keenly (see graph 21). In Spain, the rapid deterioration in the labour market may also have held back households in decisions on buying a home.

All in all, Spain is the country where domestic demand contracted the most in the course of the recession: there were a number of imbalances there before the crisis and the collapse of the labour market weighed down on household demand. In this context, the relatively limited drop in its GDP in relation to its neighbours may seem astonishing: Spain owes this to an over-reaction in the slide in imports, resulting in a very positive contribution of foreign trade to growth over the quarters of the recession.

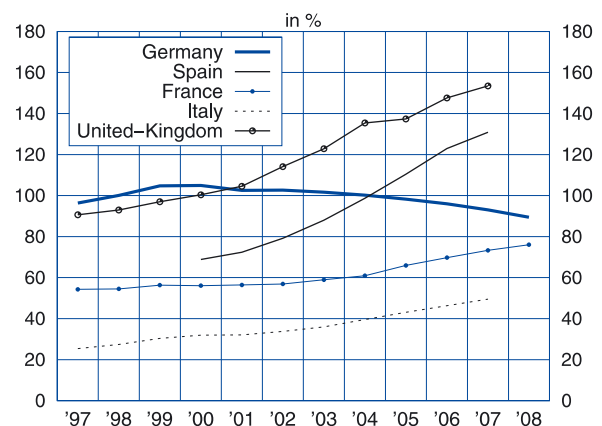
**20 - Collapse in housing investment\* in Spain and the United Kingdom**



\* Housing investment corresponds to the construction of housing. A large part is taken up by household investment in housing.

Sources: Eurostat, INSEE calculations

**21 - Gross debt ratio of households\***



\* Debt (household borrowing) as a ratio of the household gross disposable income

Source: Eurostat

# Explaining performance differences in Europe during the recession

## Box 3 - Stimulus plans of comparable scale

Most of the developed countries implemented State plans to boost activity in response to the crisis. Given the relatively comparable ramp-up times and amounts in the different countries (except for Italy where the measures were more limited), the stimulus plans do not provide significant factors explaining the differences in performance during the recession. However, some particular measures - support for the construction sector in Spain, the German scrappage allowance, support for household purchasing power - may have had more rapid effects than others, and therefore partly explain the upturn perceived in certain countries in Q2 2009.

For reasons of application schedules, but also because their content and the amounts committed are relatively close, the stimulus plans provide little explanation for the differences in performance between the European countries during the recession period.

### Most measures had no effect before Q2 2009

In the five European countries, most of the stimulus plans were decided on in late 2008 and their implementation started in early 2009, at a moment when activity had already fallen heavily. If the time necessary for the measures to take effect is added in, they had little effect in Q2 2009. This applies in particular to public investment expenditure: although it is generally recognised as being the most effective form of expenditure, because it has a high multiplying effect on activity, it is slow to be implemented. Consequently, these systems can only have had a marginal impact during the period studied here. However, they have naturally contributed to countries emerging from the recession in mid-2009 and have buoyed up activity on the whole in 2009.

### The cost and effects of the stimulus plans seem relatively comparable, except for Italy

With the exception of Italy, the stimulus plans are relatively comparable, both in their budget cost and expected impact in 2009 (see table). The estimation of their impact is based on the use of the multipliers associated with this type of measure. Traditionally, for example, public investment has a greater effect over the short term (multiplier of more than 1) than a tax cut, part of which will be saved by households. The multipliers used are taken from a review of existing analyses carried out by the IMF (see [6]). However, the estimations of these multipliers generally give results that can vary somewhat depending on the method or

macroeconomic model used. We therefore chose to leave an interval on these multipliers to take account of this uncertainty. Finally, certain measures whose short-term impact on economic activity is difficult to calculate, such as cash-flow support for businesses in France, have not been taken into account: the main effect of such measures which are used notably to prevent company bankruptcies, is to protect production systems during phases of falling demand and to facilitate an upturn in the economy by minimising delay or hysteresis effects.

### Some measures produced rapid effects

Despite these similarities, differences in the scheduling and content of measures may have had different effects during the recession period through to Q2 2009. In addition, certain measures in certain countries may have had large external effects for other countries: this would seem to be the case of the German scrappage allowance.

### The construction sector in Spain seems to have received very early support from State measures

The Spanish plan was brought in rapidly, notably regarding support for the construction sector. It partially explains the ultimately somewhat limited contribution of the construction sector to the fall in activity. Surprisingly, in fact, the construction sector in Spain weighed little on activity, despite the fact that the sector represents a very large part of the total economy (about 12% against 4% to 6% in the other four major European countries) and that residential construction suffered much during the crisis. But the decline in residential construction was softened by the buoyancy of non-residential construction (non-residential building and public works): this softening effect can be largely put down to the stimulus measures and notably to support from State funds for local investment in major rail construction works.

### In France, measures for households succeeded in boosting purchasing power and consumption in Q2 2009

The effectiveness of purchasing power support measures depends on household behaviour: if a large part of the money ends up going into savings, the impact of the measure will be weak. This was the case in Spain, where the first measures targeting households in the form of tax cuts were introduced very quickly. Their impact on consumption has so far been weak. In

### Budget cost and estimated impact in 2009 of the stimulus plans implemented in the major European countries (excluding measured intended to facilitate business cash flow\*)

	points of GDP in %				
	Germany	Spain	France	Italy	United Kingdom
Budget cost 2009	1.2	2.0	0.8	0.5	1.1
Estimated impact in 2009	0.6 à 1.1	0.7 à 1.3	0.5 à 0.7	0.1 à 0.3	0.4 à 0.8

\* In France, the cash flow measures represent about €13 billion, or 0.6 points of GDP, and are not taken into account in this calculation.  
Source: calculs INSEE

## Explaining performance differences in Europe during the recession

France, meanwhile, measures for households managed to support not only purchasing power but also household consumption, particularly in Q2 2009, although the savings rate of households did increase on the whole.

At the end of 2008 and beginning of 2009, the main countries in Europe also supported consumption via direct aid, in particular bonuses for scrapping old vehicles when buying a new one. This system provides rapid support for activity in the short term, thereby managing to attenuate a shock at the moment when it occurs.

### Germany stands out by the scale of its “scrappage allowance” system

In Germany, a budget of €600 million was initially announced in January 2009, with a bonus of a considerable unit value: €2,500 per vehicle. Purchasers brought their purchases forward to benefit

from the allowance before the financing ran out, thereby explaining the sharp rise in registrations in February. The budget was then increased to €5 billion, allowing the system to be extended through to September and to keep registrations at a high level (see graph). This scrappage allowance buoyed up German consumption and favoured the upturn in exports in France in Q2.

The other countries set up similar systems, but on a smaller scale: €1,000 in France and €1,100 in the United Kingdom. ■

### German registrations buoyed up by the scrappage allowance



Sources: national statistical institutes, seasonally adjusted data INSEE

### France's greater resistance explained indirectly by the specific handicaps of its partners

Although the crisis was very much synchronous in the main European countries, the scale of the falls in activity varied clearly between them. For example, over the period of the recession, GDP declined sharply in Germany and Italy (-6.3 points and -6.5 points respectively), a little less in Spain and the United Kingdom (-4.2 points and -5.6 points respectively), and the decline in activity was significantly less in France (-3.3 points). We have shown that these differences are not the result of a global explanation based on the specific features of the crisis, but that they are essentially due to a number of country-specific reactions.

*In short, the differences in performance between European countries are not due to differences in their exposure to the shocks*

Due to the partly-financial origin of the crisis, it could have been expected that those countries that were the most exposed to toxic assets and had the most highly-developed financial systems would be harder hit by the financial shock. But on account of the high level of integration between financial systems, the crisis resulted in interest rate rises and tighter conditions on granting credit that were very similar between countries.



## Explaining performance differences in Europe during the recession

Likewise, the historic slump in world trade could have led us to expect clear differentiation in world demand for exports from the different countries, due to the geographical structure of those exports. This was not the case: the world trade shock resulted in shocks of a comparable scale in terms of world demand.

*But the counter-performance of Germany can be explained by its over-exposure to world trade and an unusual counter-performance on exports*

A study of the world trade shock does, however, show the first national specifics. Germany was harder hit by the crisis for two reasons: on the one hand, the greater weight of exports in its activity in relation to its neighbours amplified the impact of the fall in exports on growth; on the other hand, German exports distinctly over-reacted to the fall in demand, also amplifying the impact of the world trade shock on the German economy.

*Italy affected by the limited scale of its stimulus plan*

Another source of differences in growth comes from the stimulus plans. Although they were highly comparable in their outlines, there are three specific features that do stand out. On the one hand, Italy stands out by the fact there was almost no stimulus plan, which did affect it significantly. Then, the German scrappage allowance was implemented very early and on a very large scale, thereby supporting activity in early 2009 in Germany, but also in neighbouring countries. Finally, Spain faced a violent residential property crisis and implemented a rapid and massive public works support plan which did considerably limit the slide in the construction sector.

Other specifics can be found in the situations of the different economies as they entered the crisis. For example, due to high debt levels before the crisis in businesses and households alike, investment in the United Kingdom and Spain dropped in a much more pronounced manner than in neighbouring countries.

*Spain benefited from a sharp drop in its imports*

In the light of these factors, Spain appears to be a singular case: due to specific negative shocks, it could have been one of the countries that was hardest hit by the crisis. But this was not the case, owing to the sharp fall in its imports that was well in excess of what might have been expected based on the drop in domestic demand.

*And France suffered none of the handicaps of its neighbours*

Finally, the singularity of France seems to reside in its absence of any specific handicaps. It was relatively spared by the recession, at least in terms of activity, because its growth is less dependent on exports than that of Germany; its exports also held up better in the face of the fall in world trade than those of its major European partners, while German exports clearly amplified the slide in world trade; the property crisis affected it less than it did Spain or the United Kingdom; its households and businesses had less debt than their Spanish or British counterparts; its stimulus plan enabled it to support household purchasing power and therefore demand, unlike Italy. On the other hand, our country did less well on employment than Italy and Germany, and unemployment increased more than it did in Germany. On this level, we can see another specific feature of Germany: the tendency among German companies to hold onto labour remains partly unexplained, even once the measures to facilitate short-time working are taken into account (see the focus in the “Germany” note)

All in all, it would therefore appear that it is not so much a case of France recording a better economic performance, since its growth is clearly explained by the shocks that occurred, as of its main neighbours being affected by factors that are specific to each of them. ■

# Explaining performance differences in Europe during the recession

## Methodological Annex - Breaking down export orientation and weight effects in calculating contributions to GDP

The collapse in world trade during the period of recession hit the exports of the five largest European countries studied in this file, but to differing extents from one country to another. The analysis conducted in this study essentially compares the differentiated impact of exports on activity with the world trade shock. It is therefore based on a calculation of the contributions of exports to the GDP of the different countries. German exports, for example, dropped by 18.2% between Q1 2008 and Q2 2009 and significantly affected German growth: the contribution of exports to German GDP for this same period was -8.6%. It is in Germany that the contribution was the most strongly negative.

In calculating the contributions, two factors are taken into account (see diagram): the weight of exports in the GDP of each of the countries and the trends in exports. In Germany, the net contribution of exports mainly comes from the much higher weight factor than that in the other countries being compared here: German exports represent 47% of GDP against 28% on average in the other countries.

The export trends can be modelled using econometric equations taking account of the two main determinants of export behaviour:

- World demand for the products of the country in question, linked to the geographical orientation of its exports.
- An export price competitiveness indicator.

The unexplained part that remains in the models is therefore the result of an export behaviour that the traditional models do not show. For instance, in Germany, the econometric export equation clearly underestimates the fall in exports between the start of 2008 and mid 2009: the model can explain a drop of 5.3 points in German activity. But that still leaves 3.3 points that it does not explain, to come to the drop of 8.6 points in German activity caused by the fall in exports. Germany is therefore characterised by an over-reaction on exports during the recession, that being the part that is not explained by world demand or price competitiveness.

Finally, if we take away the unexplained part from the econometric models, the analysis of the impact of exports on activity shows three distinct types of effects: the weight of exports in the economy, their geographical orientation and their competitiveness.

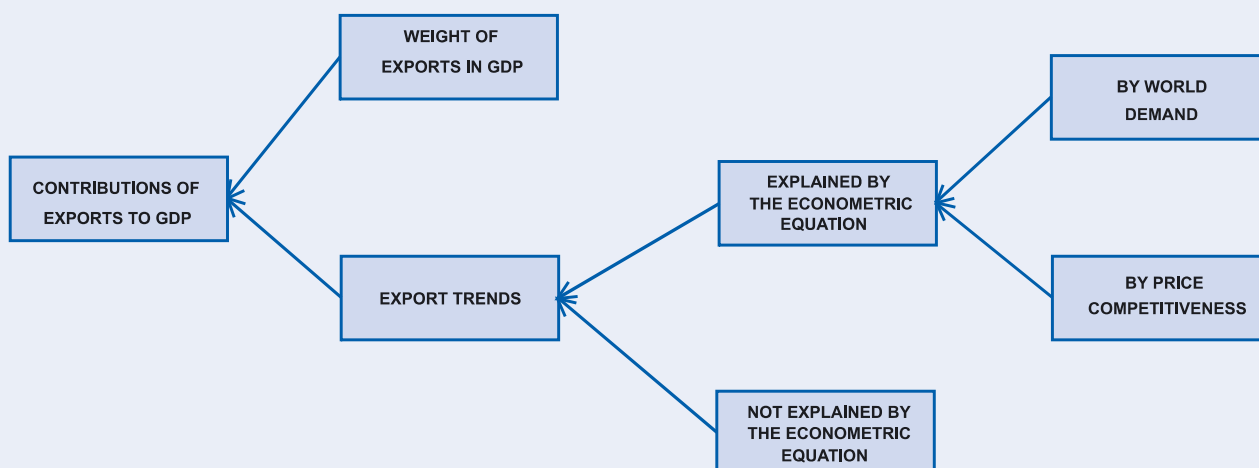
In this study, export price competitiveness has been left to one side, due to the fact that all the countries except the United Kingdom belong to the Euro Zone.

The emphasis was therefore placed on distinguishing between the weight and orientation effects. To do so, the characteristics specific to each of the countries were compared with a reference weight and orientation.

The mean weight of exports in the seven main advanced economies was taken as the average reference weight (see table 1).

To work at a constant geographical orientation, the world demand specific to each country was replaced by an "average" world demand in the econometric equations, with all the parameters remaining unchanged.

### Method to break down contributions of exports to GDP



# Explaining performance differences in Europe during the recession

Table 1

Weight of exports in GDP in 2007

	Average for the 7 advanced economies	Germany	Spain	France	Italy	United Kingdom
Weight of exports in GDP in 2007	28	47	27	27	29	27

Sources: national statistical institutes, INSEE calculations

In this way, two series of export variations were simulated using the models: specific and constant geographical orientation.

Once this had been done, two types of contributions of exports to GDP could be calculated: a specific contribution using the weight and geographical orientation of each of the countries and an average contribution taking the reference average weight and the world geographical orientation (see table 2). To study the impact of each of these effects, it was enough to calculate the difference between the specific contribution and the average contribution of each of the countries. This difference could then be broken down mathematically to distinguish the shares to be attributed to the sole weight effect and to the sole geographical orientation effect (see equation *infra*). A combined effect appeared in the mathematical breakdown, but it was negligible compared with the first two.

$$\begin{aligned}
 & \text{specific\_contribution} - \text{average\_contribution} = \\
 & \Delta x_t^i \times p_{t-1}^i - \Delta \bar{x}_t^i \times \bar{p}_{t-1} = \\
 & (\Delta x_t^i - \Delta \bar{x}_t^i) \times \bar{p}_{t-1} + (p_{t-1}^i - \bar{p}_{t-1}) \times \Delta \bar{x}_t^i + (\Delta x_t^i - \Delta \bar{x}_t^i) \times (p_{t-1}^i - \bar{p}_{t-1}) = \\
 & \text{geographical\_effect} + \text{weight\_effect} + \text{combined\_effect}
 \end{aligned}$$

with  $\Delta x_t^i$  the simulated quarterly variation in exports of country  $i$  in quarter  $t$ ,

$\Delta \bar{x}_t^i$  the simulated quarterly variation in exports of country  $i$  in quarter  $t$ , at a constant geographical orientation

$p_{t-1}^i$  the weight of exports in GDP for country  $i$ ,

and  $\bar{p}_{t-1}$  the average weight of exports in GDP for the 7 advanced economies.

For Germany, the following results were obtained (see table 2):

- The difference between the specific contribution and the average contribution was 2.1 points. If Germany had had an average weight and orientation, the contribution of exports to GDP would have been lower.
- What explains the greater part of this large gap (compared with the other countries where the gap is much narrower), is the weight effect (for 2.3 points). Geographical orientation attenuates this gap very slightly (0.1 points).

Table 4

Contributions of exports of goods and services to GDP from Q2 2008 to Q2 2009 inclusive, simulated by the econometric models

	Contributions simulated using the equations	Contributions simulated with average world demand and weight	Difference	Geographical orientation effect	Weight effect
Germany	-5.3	-3.2	-2.1	0.1	-2.3
Spain	-2.7	-2.8	0.1	0.0	0.1
France	-3.8	-3.9	0.1	0.0	0.1
Italy	-5.3	-5.0	-0.4	-0.1	-0.2
United Kingdom	-2.1	-2.0	-0.1	0.2	-0.3

Sources: national accounts, INSEE calculations

# Explaining performance differences in Europe during the recession

The equations for exports of goods and services by volume used in the analysis above are error correction models taking account of long-term relations and short term dynamics between the variables. The variables explaining exports are as follows:

- World demand (WD) for the products of each of the countries, calculated on the basis of the imports of some forty countries, weighted according to their weight in the exports of the countries being studied.
  - An export price competitiveness indicator or the real effective exchange rate (*reer*), depending on the country, used as an approximate figure.
  - A trend, long-term or not depending on the country, taking account of export market share trends.
- The estimation period stops at the end of 2007 for all the countries, so before the start of the crisis.

## Germany:

Estimation period: Q1 1993- Q4 2007,  $R^2 = 0.50$ , trend change in Q1 1999

$$\Delta x_t = 0,61 \Delta \log(WD_t) + 0,52 * 10^{-2} \text{cte1} + 0,89 * 10^{-2} \text{cte2} \\ - 0,5 [\log(X_{t-1}) - (1,00 \log(WD_{t-1}) + 0,5 \log(compet_{t-1}) - 0,19 * 10^{-2} \text{Trend1} + 0,34 * 10^{-2} \text{Trend2})]$$

(+4,7) (+1,5) (+3,0) (-5,5)

## Spain:

Estimation period: Q1 1990-Q4 2007,  $R^2 = 0.52$ , dummies for Q4 1993 and Q1 1994

$$\Delta x_t = 0,59 \Delta \log(WD_t) - 0,32 \Delta x_{t-1} + 2 * 10^{-2} \text{cte} + 3 * 10^{-2} \text{Ind}_{94T1} - 4 * 10^{-2} \text{Ind}_{93T4} \\ - 0,14 [\log(X_{t-1}) - (1,00 \log(WD_{t-1}) - 1,12 \log(reer_{t-1}))]$$

(+5,3) (-3,8) (+6,3) (+2,4) (-2,6) (-6,2)

## France:

Estimation period: Q1 1981-Q4 2007,  $R^2 = 0.54$ , trend change in Q2 1993

$$\Delta x_t = 0,61 \Delta \log(WD_t) - 0,27 \Delta reer_{t-1} + 0,26 * 10^{-2} \text{cte1} + 0,22 * 10^{-2} \text{cte2} \\ - 0,17 [\log(X_{t-1}) - (1,00 \log(WD_{t-1}) - 0,85 \log(reer_{t-1}) - 0,28 * 10^{-2} \text{Trend1} - 0,58 * 10^{-2} \text{Trend2})]$$

(+8,2) (-4,1) (+1,5) (+1,2) (-5,5)

## Italy:

Estimation period: Q2 1981-Q4 2007,  $R^2 = 0.62$ , dummies for Q4 1986, Q1 1987 and Q2 1987

$$\Delta x_t = 0,81 \Delta \log(WD_t) + 0,55 \Delta compet_{t-1} - 0,2 \Delta x_{t-1} + 0,51 * 10^{-2} \text{cte1} - 0,17 * 10^{-2} \text{cte2} \\ - 6 * 10^{-2} \text{dum}_{87T2} + 7 * 10^{-2} \text{Ind}_{87T1} - 6 * 10^{-2} \text{Ind}_{86T4} \\ - 0,14 [\log(X_{t-1}) - (1,00 \log(WD_{t-1}) + 1,7 \log(compet_{t-1}))]$$

(+6,4) (+6,3) (-3,0) (+1,8) (-0,5) (-3,5) (+4,2) (-3,7) (-4,1)

## United Kingdom:

Estimation period: Q2 1981-Q4 2007,  $R^2 = 0.40$ , trend change in Q1 1996

$$\Delta x_t = 0,64 \Delta \log(WD_t) - 0,20 \Delta reer_{t-1} + 0,08 * 10^{-2} \text{cte1} + 0,27 * 10^{-2} \text{cte2} \\ - 0,4 [\log(X_{t-1}) - (1,00 \log(WD_{t-1}) - 0,55 \log(reer_{t-1}) - 0,58 * 10^{-2} \text{Trend1} - 0,32 * 10^{-2} \text{Trend2})]$$

(+4,4) (-3,5) (+0,3) (+0,8) (-5,9)

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