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# PANORAMA

SEPTEMBER 2015

## Company insolvencies in Western Europe: slight lull being confirmed for 2015

COFACE ECONOMIC PUBLICATIONS

By Coface Group Economists



In this first overview of company insolvencies in Europe, Coface examines the following question: Was the return to growth observed in Europe strong enough to bring about a lasting reduction in business failures? For 10 out of the 12 Western European countries studied, the answer is «yes».

With the help of an econometric model, Coface expects the number of company insolvencies to fall in ten countries by the end of 2015, in conjunction with growth outlook for the Eurozone, which is set to reach

1.5% in 2015 and 1.6% in 2016 against 0.9% in 2014. Admittedly a number of risks still weigh on businesses (such as lower growth prospects in emerging markets), but activity is supported by the fall in the oil price and in the euro, the gradual ending of restrictive fiscal policies and also the Central Bank's quantitative easing.

Spain, Portugal and the Netherlands, which could register falls respectively of 20%, 16% and 21% year on year, are among the leaders. The United Kingdom is not far behind (-10%

forecast by the end of 2015), while in France (-3%) and in Germany (-2%) the improvement looks more muted.

Against this, certain countries stand out through an expected increase in business liquidations. This is particularly true for Italy and Norway with expected rises respectively of 7% and 6%. While the recovery has been too weak to be of benefit to businesses in Italy, Norway has been penalised by its dependence on oil, the price of which has plummeted by 60% since July 2014.

SEPTEMBER 2015

# COMPANY INSOLVENCIES IN WESTERN EUROPE: SLIGHT LULL BEING CONFIRMED FOR 2015

## BY OUR ECONOMISTS



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## INTRODUCTION

The financial strength of European businesses was damaged by the recessions affecting the Eurozone in 2009, 2012 and 2013. With growth of +0.9% in 2014, the Eurozone's economy regained sufficient strength for a decline in business failures to be observed in most of the countries. There was renewed hope regarding the ability of the European economies to create wealth. Though the recovery was to a great extent sustained by cyclical effects (fall in the oil price and in the euro, less restrictive fiscal policies and the ECB's quantitative easing), the acceleration in growth is undeniable.

The recent trend in European business failures shows that they have benefitted somewhat from this timid recovery. Apart from these cyclical factors, they are also benefitting from public policies designed to support businesses: 10 of the 12 countries in our

sample have, for example, cut corporate tax rates since 2007). Finally, wage moderation has maintained the business margins, which, thanks also to stronger demand, have recently recovered.

This more favourable economic context raises the following question: Is the rebound in growth observed since mid-2014 and expected for 2015 and 2016 of sufficient scale for the downward trend in business failures to continue in Europe in the coming months? To answer this question we shall see how businesses have adapted since 2008 in a context of economic slowdown. Then we shall analyse the current trends in business failures. Finally, we shall use a tool for modelling business failures, which includes four explanatory variables for the 12 countries in our sample in order to deliver our forecasts.

## 1 HOW DO BUSINESSES ADAPT IN A PERIOD OF CRISIS?

The fall of Lehman Brothers and then the Eurozone sovereign debt crisis have left traces in the European business landscape. The weakest businesses have naturally been eliminated but at a higher than usual rate. All have had to confront new constraints: sluggish internal and external demand, rationing of credit.

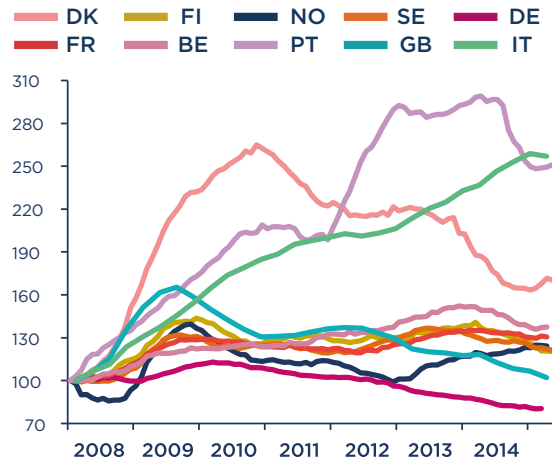
### Two successive crises

At the end of 2008, the subprime crisis sent shock waves through the world economy. The weakest businesses then faltered and fell into default, creating a vicious circle which affected their suppliers. In 2009, company insolvencies increased in all the countries of our sample: ranging from 11% (Belgium) to 79% (Spain) and by 30% on average. The construction sector was particularly affected, being by its nature very dependent on changes in credit conditions. At the European Union level, this accounts for 20% of businesses and 11% of employees. The bursting of the property bubbles therefore accelerated the rise in

business failures in the countries of Southern Europe. The construction sector's added value (AV) in 2014 (see appendix 2, page 12) fell to 9% of the total in Portugal, 11% in Spain and in Italy against 11%, 20% and 14% respectively in 2008.

The uncertainties concerning the sustainability of public debt in the Eurozone constituted the second wave of the crisis. After the brief recovery of activity in 2010 and 2011, GDP contracted again: -0.8% in 2012 then -0.5% in 2013. Businesses therefore continued to suffer from difficult credit conditions, shrinking margins and sluggish demand. These poor prospects facing businesses deterred investments (-6.1% between 2011 and 2013). In this context business failures unsurprisingly peaked again with an average rise of 8% in 2012 and 5% in 2013 in the 12 countries studied (*chart no. 1, page 3*).

**Chart No.1**  
Business insolvencies  
(annual average, 100 = January 2008)



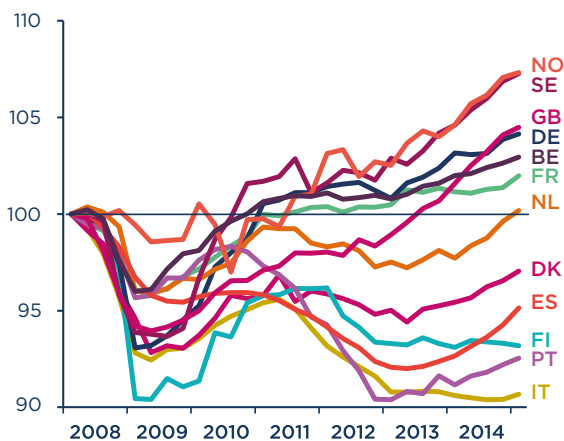
Source: National statistics

While the industrial sectors were those chiefly affected by the business failures during the subprime crisis, services businesses were more affected by this second phase in a general context of spending moderation. We also note that Spain paid the highest price since the number of businesses in liquidation nearly doubled between 2009 and 2013 (admittedly from a low level) to reach 9,143 liquidation procedures (+77%), followed by Portugal (+69%) and Italy (+51%).

**Wealth destruction was greatest in the economies of Southern Europe**

Although the Eurozone's most vulnerable countries seem today to be returning to growth, they have not all regained their pre-crisis levels of wealth, namely Italy (91%), Portugal (93%), Finland (93%), Spain (95%) and Denmark (97%). As for the Netherlands it just managed to regain its pre-crisis wealth level in the first quarter of 2015 (chart no. 2). It will therefore require several years for countries such as Italy or Portugal to return to a level of wealth comparable to that of 2008.

**Chart No. 2**  
Real GDP growth (100 = January 2008)



Source: Eurostat

The consequences of such wealth loss on potential growth are also significant. The European economic slowdown led to an explosion of unemployment rates in the Eurozone, particularly in the countries of Southern Europe and among the young (22% of 12-24 year-olds in the Eurozone). This deterioration was accompanied by an increase in long-term unemployment (12 months or more), up from 3% to 6.1% between 2008 and 2013, leading to a waste of human capital. Indeed the longer the search for employment, the higher the likelihood of getting a job which does not match job-seeker's skills, which in aggregate results in a loss of productivity. The increase in long-term unemployment therefore leads to a rise in the rate of structural unemployment and ultimately to a reduction in potential growth. This is referred to as the hysteresis effect.

**BOX 1**

**What is a business failure?**

When a business finds itself unable to meet its payment obligations judicial proceedings are begun under the authority of the competent body. This may result either in the company being put into receivership or in its liquidation. The statistical data of our sample include only liquidations. Only the French data needed restating because they also included receivership proceedings (29% of business failures in 2014 in metropolitan France). So here, by business failure, we mean the putting of the business into liquidation.

However, though the scope seems identical, the legal frameworks of the 12 countries studied are different, some encouraging bankruptcy procedure more than others, to the detriment, for example, of a rescue procedure (mediation, purchase by a third party) which is not recognised in the insolvency figures. The new changes to this legal framework affect the number of failures and thus limit the analysis of their rate of growth. The World Bank's annual study on the ease of doing business (Doing Business, Resolving insolvency) highlights these national divergences (table no. 1). By way of example, since 2010 Spain has reformed its bankruptcy procedures three times in order to accelerate and facilitate restructurings and liquidations. Some of the increase in insolvencies in this country can therefore be attributed to these legal changes. On the other hand, France has favoured receivership and restructurings in recent years, thereby reducing the number of liquidations.

**Table No.1**

New mesures which facilitate liquidations ■ or preservation of the business ■

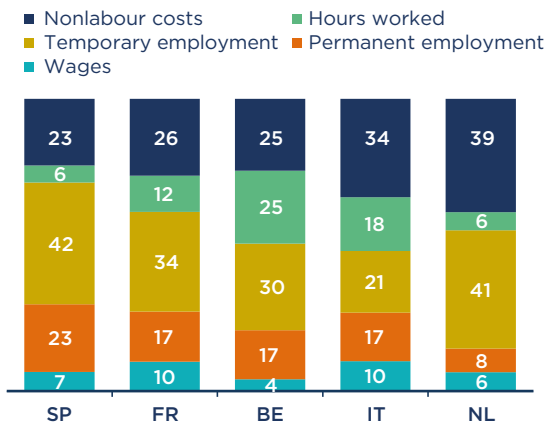
	2010	2011	2012	2013	2014	2015
Germany	■					
Belgium		■				■
Denmark			■			
Spain		■		■		■
Finland						■
France	■		■			
Italy						■
Norway						
Netherlands						
Portugal				■		
United Kingdom		■				
Sweden						

Source: Doing Business 2015

### Different kinds of cost reduction by country

In a gloomy economic environment, businesses can respond in three ways: price cuts to stimulate demand, margin reductions to offset higher costs (such as the increased cost of credit) or cost cutting in order to maintain constant margins. When there is a temporary shock leading to a reduction in demand and difficulties in accessing credit, according to a study by the ECB 94% of European businesses primarily embark on cost cutting strategies<sup>(1)</sup>. Initially, temporary workers are not re-engaged, which does not lead to additional costs. Then wage increases may be reduced or halted. Finally, if prospects remain poor, businesses may reduce working hours and, as a last resort, the number of permanent jobs. For example, Spain is the European country which made the most use of temporary workers before the crisis (32% of jobs against the European average of 15% in 2007), so that the majority of businesses' cost reductions were made in this way (chart no. 3). On the other hand, countries like France or Belgium prioritised a reduction of working hours and a wage freeze.

**Chart No.3**  
Distribution of responses on the choice of the most important strategy by reducing costs (as %)<sup>(2)</sup>



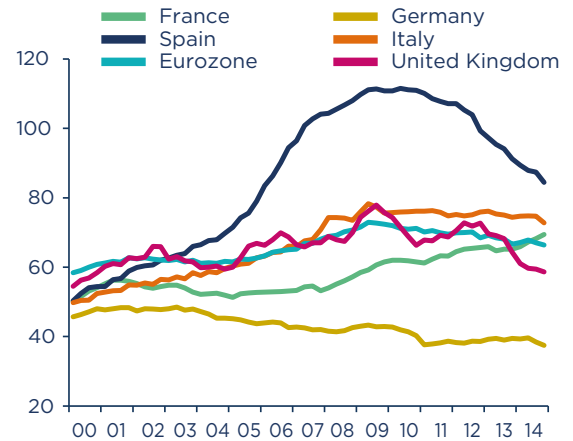
Source: WDN Surveys

The ability of businesses to adapt their cost structure in crisis period depends on their location. To this breakdown of workers' status are added the characteristics of the legal framework. Each country has its own legal framework which governs employment protection which can be assessed on the basis of the OECD's employment protection indicators<sup>(3)</sup>. Germany (2.98), Belgium (2.95), the Netherlands (2.94), France (2.82) and Italy (2.79) have the highest worker protection against dismissal in our sample. Conversely, workers in the United Kingdom (1.62), Finland (2.17) and Spain (2.28) are the least protected. One observes therefore that the ease of adapting cost structures cannot wholly explain the dynamism of businesses since Germany is the most protective and yet unemployment is lowest there.

### The constraint of bank deleveraging

Strong economic activity depends moreover on the availability of sources of finance essential for business investment. A recession tends to increase the indebtedness of businesses relative to their income, which limits their sustainability. Accordingly, the growth in the volume of bank loans to non-financial businesses contracted sharply in the Eurozone to reach -5.9% in July 2013. Although this contraction in bank credit resulted in part from tightening credit supply, the fall in demand for loans by enterprises in the Eurozone also played a role: the balance of opinions of the banks surveyed by the ECB was respectively -40% and -32%<sup>(4)</sup> in Q1 2009 and Q2 2012, i.e. at the peaks of the two waves of the crisis. Moreover, more than half (55%) of the weakening demand in 2009 can be explained by a desire by firms to restructure their debt<sup>(5)</sup>.

**Chart No.4**  
Total indebtedness (debt securities and borrowing) of non-financial businesses (as % of GDP)



Source: French National Bank

The 2008 financial crisis thus led to a process of business deleveraging on an unprecedented scale. According to recent study by the IMF<sup>(6)</sup> the average duration of deleveraging after a crisis for the non-financial companies of advanced countries is about five years for an average drop of 15 GDP points. This deleveraging is associated with a gain in growth potential of about 0.45 GDP points. But the importance of this process lies in its duration and its scale: too long and it is a barrier to investment. In other words, the slower and longer it is, the greater is the effect on potential growth.

However, in certain European countries the deleveraging process has not begun (chart No. 4, page 4). French businesses have even seen their debt increase by 15 GDP points since the end of 2008. On the other hand, deleveraging in Spain represents 24 GDP points. Even Germany, which enjoyed one of the lowest levels before the crisis, has seen its total debt fall by 5 GDP points over the same period. Finally the debt of Italian businesses remained stable at 72.8% (-0.5 percentage points between the end of 2008 and the end of 2014), as they have had to cope with the burden of late payments.

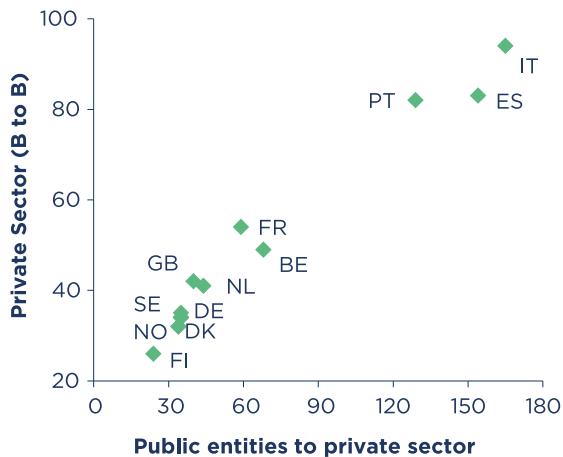
(1) S.Fabiani, A. Lamo, J. Messina et T. Room, «European firm adjustment during times of economic crisis», European Central Bank, April 2015.  
(2) Wage Dynamics Network (WDN) survey carried out between 2007 and 2008 collecting information from 15,235 firms, European Central Bank.  
(3) Scale from 0 (the least restrictive) to 6 (the most restrictive). «Protection of full-time workers against individual and collective dismissals», OECD 2013.

(4) Net balance of opinions regarding question no. 6: Over the past three months, how has the demand for loans or credit lines to enterprises changed at your bank?, «Euro area bank lending survey», European Central Bank.  
(5) Net balance of opinions regarding question no. 7A: Debt refinancing/restructuring and renegotiation, «Euro area bank lending survey», European Central Bank.  
(6) S. Chen and co, «Private Sector Deleveraging and Growth Following Busts», IMF, February 2015.

**But a deleveraging process constrained by non-payments**

Trade payables weigh heavily on the ability of businesses to reduce their debt; they depend on the goodwill of their creditors. In France, payables represented 14% of the total balance sheet<sup>(7)</sup> in 2013 against 20% in Italy, 10% in Portugal and 5% in Germany. It is necessary to distinguish two issues: settlement periods and the effectiveness of recoveries.

**Chart No.5**  
Average payment term in 2014 (in days)



Sources: European Commission, Intrum Justitia, Coface

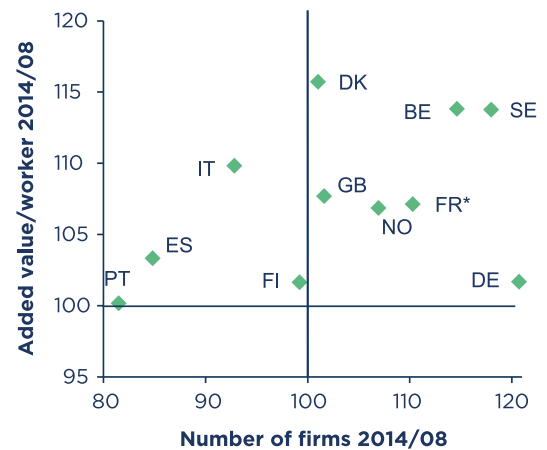
Longer settlement periods lead to cash flow tensions caused by delays in collection. On the European scale, the Late Payments Directive (2011/7/EU) sets the maximum settlement period at 60 days (latest date for national transposition in March 2013). While it covers the behaviour of private agents, it also calls for better discipline on the part of public bodies, whose late payments are just as damaging for the economy. Indeed an increase in late payments by public bodies to the private sector equivalent to 1% of GDP reduces growth by 0.6 to 0.9%<sup>(8)</sup>. There appears to be considerable differences between countries within Europe (chart no. 5) and the situation in Italy is the most critical. Late payments by public authorities to businesses are estimated at 5% of GDP, the highest in Europe. In response, a €66 billion repayment programme was put in place in April 2012 and, according to the IMF debts amounting to €36.5 billion had been settled at the end of July 2015.

Moreover, the capacity of the legal context to facilitate the liquidation procedure removes the contagion risk of insolvency. The World Bank's annual study on the ease of doing business (*Doing Business 2015*) evidences a great disparity between the countries of our sample. Conditions for resolving insolvency are the least favourable in Spain, Italy and Portugal: the recovery rate seems low (69% on average) and the time taken is long (1.5 to 2 years). Accordingly the countries of the south seem to have more difficulties in paying off debt.

**The number of businesses in southern Europe has fallen**

The evolution of businesses between 2008 and 2014 highlights the weak dynamism of Portugal, Spain, and Italy and, to a lesser extent, Finland. In these four countries, the number of businesses declined between 2008 and 2014. However, the added value per employee increased in all the countries of our sample (chart no. 6). We observe that for France the 2010 data were preferred in order to neutralise the effects due to the creation of the auto-entrepreneur status in 2009.

**Chart No.6**  
Change in the number of businesses and in the AV per employees (100 = 2008)



Source: Eurostat\* 2010

As we have seen, in a period of crisis, businesses adapt chiefly by reducing their costs but mainly their debt. Structural constraints persist and pre-crisis wealth levels and number of businesses have not yet been restored for certain countries.

(7) Enterprises of any size, excluding holdings and registered offices, source BACH (Banque de France).

(8) C. Chechirita, A. Klemm et P. Viefers, «Governments' payment discipline: the macroeconomic impact of public payment delays and arrears», IMF, January 2015.

## 2

A CYCLE FOR FEWER BUSINESS FAILURES  
HAS BEGUN IN EUROPE

The accommodating monetary policies of the ECB and of the region's other central banks, the improved competitiveness of the southern countries (chiefly through a reduction in the cost of labour) and the gradual ending of fiscal consolidation policies enabled Europe's economies to return to growth in 2014. This trend is expected to continue in 2015 and 2016 (*chart no. 7*). In its wake, business failures are beginning to fall in most European countries.

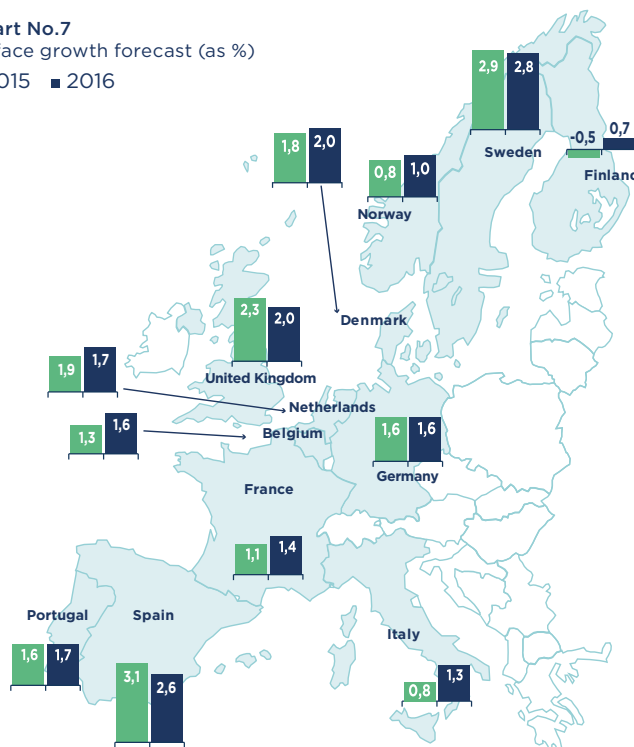
## Eurozone activity is recovering, driven by private consumption

The Eurozone's economic recovery, begun in 2014, has been confirmed since early 2015. After rising by 0.4% in Q1 2015, Eurozone GDP increased by 0.3% in Q2 2015, mainly driven by domestic demand. Spain, for the third consecutive time, reported the best growth in the Eurozone at 1.0% for Q2 2015, while Italy is beginning a timid return to growth after three years of recession with growth of 0.2% over the same period.

Chart No.7

Coface growth forecast (as %)

■ 2015 ■ 2016



Private consumption is benefitting from the improved labour market situation. The unemployment rate has fallen steadily since the end of 2013 to reach 11.1% in June 2015. Moreover, weak inflation (+0.2% as an annual average at the end of July 2015) is sustaining real household incomes (incomes corrected for price changes), which grew by 2.2% in Q1 2015. In the Eurozone the increase in household income has led essentially to a rise in spending and not to more saving, the savings rate having remained stable (12.8% in Q1 2015).

## The Eurozone is benefitting from the fall in oil prices and the depreciation of the euro

The fall in the oil barrel price (-60% between July 2014 and August 2015) is benefitting importing countries by reducing the energy bill and improving the competitiveness of businesses by reducing input costs, as in the case of the chemicals industry, and transport costs. The fall in the price per barrel is chiefly due to supply-side factors. Production has actually accelerated sharply in the United States (+70% since 2008, 15% of world production), linked to the development of the so-called hydraulic fracking technology. The possible arrival of Iran on this market could again exert pressure on the price. Although its production is limited (3% of world production), its large inventories are likely to change the composition of the market. In Europe, only Norway will be hard hit by the fall in the barrel price. Nevertheless, the gains on the Eurozone are expected to be partially offset by the depreciation of the euro.

Between January 2014 and August 2015, the euro depreciated by about 7% against the dollar and by 4% in terms of the effective nominal exchange rate<sup>(9)</sup>. These changes are largely explained by the divergence in monetary policies between the ECB and the FED, as the first has adopted a quantitative easing programme while the second should adjust its interest rates by the end of 2015 or by early 2016. This depreciation affects the member states unevenly and the effects need qualifying. First of all, intra-zone trade remains preponderant with a degree of openness of only 25% in 2014. Countries whose exports are directed more outside the zone (Denmark, Germany and Italy) benefit from the euro's depreciation. On the other hand, the price elasticity of exports<sup>(10)</sup> exacerbates the differences among Eurozone countries. Countries like Germany and the Netherlands, which have weak price elasticity (respectively 0.81 and 0.47) benefit less from the depreciation than countries with stronger price elasticity, such as Spain (1.61), Portugal (2.14) and Italy (2.56)<sup>(11)</sup>.

## Business failures: Italy and Norway the only countries still in the red in 2014

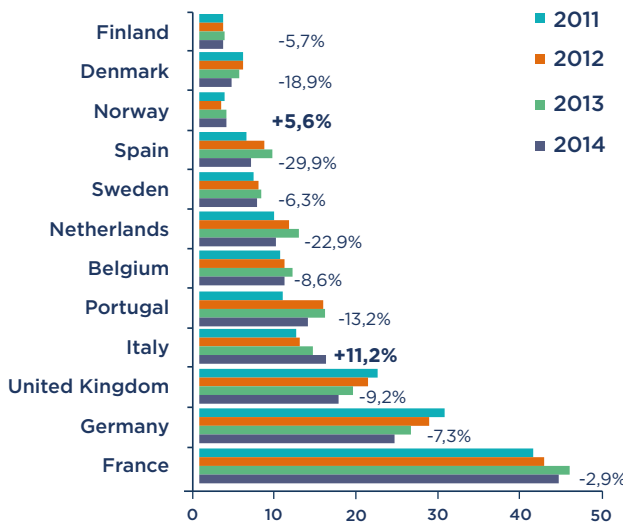
In 2014, the number of insolvencies shrank in 10 of the 12 countries in our sample with an average fall of 9%. This is particularly true for Spain, Denmark and Portugal. Nevertheless, liquidations continued to rise in Italy and Norway (*chart no. 8, page 7*).

(9) The effective exchange rate is the exchange rate of currency zone, measured as the weighted sum of the exchange rates with the different trading partners and competitors. Here it is calculated by the ECB on the basis of the exchange rate of 19 countries.

(10) Defined as the variation of demand for a good in line with the change in its price. Weak elasticity reflects weak association between these two variables.

(11) N. Balta, K. Fischer, P. Nikolov and L. Vilmi, «Member state vulnerability to changes in the euro exchange rate», European Commission, October 2014.

Chart No. 8  
Business insolvencies (in thousands)



Sources: National Statistics

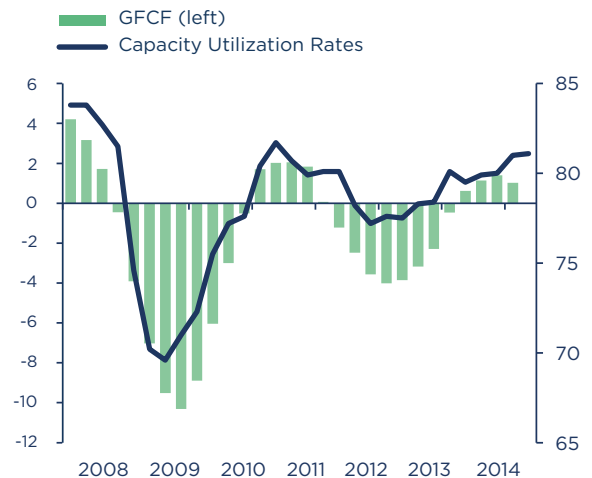
In Italy, the surge in insolvencies was particularly strong in the the industrial and construction sectors whose weight in the economy fell (*appendix 2, page 12*) indicating the extent of the crisis on businesses. But Italy also has specific features able to sustain business failures<sup>(12)</sup>. On the one hand, the distribution of businesses shows the greatest concentration of very small enterprises (0 to 9 employees) in our sample (*appendix 1, page 11*). Being more precarious, this type of business is by its nature weaker and therefore likely to increase the number of business failures in a period of crisis through a snowball effect: the failure of a medium-sized enterprise brings in its wake a myriad of small enterprises. On the other hand, in spite of an emergency plan which made it possible to halve public sector payment arrears to private sector businesses, the length of payment terms still burdens businesses (*see page 4 "The constraint of bank deleveraging"*). Meanwhile, the growth of credit to non-financial businesses remains negative at -2.4% as an annual average at the end of July 2105. This is evidence of restructurings still ongoing. Let us recall that in October 2014, out of the 25 banking institutions not meeting the requirements of the ECB's stress tests in the Eurozone, 9 were Italian. Nevertheless, the country has very recently returned to growth with a tangible improvement in Q2 2015 at 0.2% quarter on quarter, but still below the Eurozone average of +0.3%.

Norway also saw its business failures increase in 2014 by 5.6%. The country, the world's 7th largest oil exporter, is suffering from the fall in crude oil prices, which have fallen 50% year on year as at end June 2015. Energy represents 44% of total added value, while oil and gas accounted for 64% of exports of goods in 2013 (UNCTAD). In Q1 2015, Norway's economy registered a negative growth of -0,1% quarter on quarter.

### But this decline in insolvencies is constrained by the weakness of investment

Investment in the Eurozone is still below its pre-crisis level at 19.5% of GDP in 2014 against 23% in 2007. According to a study by the IMF<sup>(13)</sup>, the impact of the financial crisis on investment appears more severe and more durable than that of previous crises. Despite more favourable financing conditions, linked to lower interest rates, investment did not really take off again in 2014. Weak expected demand and, more generally, the climate of uncertainty concerning the development of the European economic cycle, play a part in discouraging investment. Moreover, the capacity utilisation rate has declined with the crisis thereby constraining investment, because businesses are less inclined to invest if they still have unused production capacity. This deficit of investment in the Eurozone restricts its potential for growth: the output gap<sup>(14)</sup>, which measures the difference between potential growth and actual growth, is expected to reach -1.6% between 2013 and 2020 against an average of +0.5% between 2003 and 2007. But the causes are also structural. The Eurozone has been facing a decline in the working age population since 2012 (-0.5% of 15-64 year-olds in 2014) which is leading to the aging of the population. Potential demand has therefore diminished.

Chart No. 9  
Capacity utilization rate and investment variation in the Eurozone (annual average as %)



Source: Eurostat

That said, we observe at the beginning of 2015 a return to investment mainly driven by the recovery of private consumption and the improvement of the business climate. Moreover, and in order re-activate investment, a European investment plan was put in place in November 2014. This European Fund for Strategic Investment (EFSI), endowed with €63 billion, is expected to generate nearly €315 billion of investment over the next three years. According to the European Commission<sup>(15)</sup>, investment could thus increase by 1.7% in 2015 and by 4.0% in 2016.

(12) Coface, «What has become of the Italian business model?», June 2013.

(13) B. Barkbu, S. Berkmen, P. Lukyantsau, S. Saksonovs and H. Schoelerman, «Investment in the Euro Area: Why Has It Been Weak?» IMF, February 2015.

(14) World Economic Outlook, IMF, April 2015.

(15) «Spring 2015 Forecast», European Commission, May 2015.

## 3

## WILL THE IMPROVEMENT CONTINUE UNTIL THE END OF 2015?

We now establish our forecasts of company insolvencies for 2015. While downward trends are continuing in most of the countries, our model tells us that the situation is unlikely to improve in Italy and Norway.

#### Four variables to explain business failures in Europe

The quality and diversity of the information available for insolvencies in France look like an exception. Our initial selection was made up of 16 variables but their availability and their explanatory power led us to isolate 4 variables (*table 2*). The data are expressed monthly (except for the GFCF) and form a representative sample of more than 1,000 observations over a period of eight years (from Q1 2007 to Q1 2015), enabling us to capture the subprime as well as the European sovereign debt crisis. Although a number of studies have sought to explain and predict business failures, the originality of Coface's tool lies in the selection of its payment experience among the explanatory variables of the model.

**Table 2**  
List of the variables selected

NAME	DÉFINITION	SOURCE
Coface	Coface payment experience	Coface
Climate	Business climate index	DG ECFIN
GFCF	Gross fixed capital formation	National Statistics
Permits	Number of building permits issued	OECD, Eurostat

Source: Coface

Moreover the high failure rate of new undertakings suggests a need to consider the evolution of new start-ups. Thus a peak of new start-ups would imply a peak of failures with a delay of 1 to 3 years. However, apart from the difficulties in gathering data for our whole sample, this variable has not shown itself to be relevant for explaining the evolution of failures, because in a period of business slowdown the oldest firms are equally affected (*box 2*). Thus this non-linear evolution weakens the explanatory power of this variable. The second relates to the disappearance of new businesses. A failing new business has not necessarily accumulated enough liability to be in a situation from which it is unable to recover and therefore finishes up in a judicial liquidation procedure. A debt cancellation without liquidation can suffice, whereas the data on business failures comprise only company liquidations.

Finally, the positive correlation between the volume of loans granted to non-financial businesses and failures is less intuitive, making it necessary to exclude this variable from the model. Indeed, for our sample, the model shows us that an increase in loans granted to non-financial businesses plays a part in the growth of the number of failures. At first sight an increase in business loans is a positive signal because it demonstrates a certain will to develop and confidence in the prospects of growth. But the period of study reveals the over-indebtedness of businesses in 2008 and the correlation then becomes negative and above 50% from January 2011.

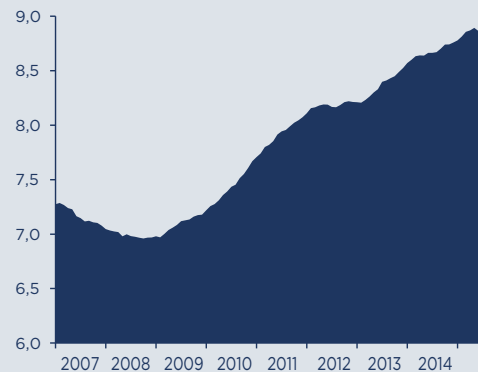
## BOX 2

### Mortality rates of businesses according to their age

A firm's risk of insolvency increases proportionally with its age<sup>(16)</sup> but that does not mean that it is linear. Two main concepts describe this "U-shaped" curve phenomenon: the "liability of adolescence" and the liability of aging<sup>(17)</sup>.

The first months of a firm's life are associated with the liability of adolescence: the risk of failure then is low, then increases with time to reach its peak at around 3 years and then declines with age. The firm effectively benefits from its initial stock of resources until this is exhausted. But, over time, the risk of failure can increase based on the concept of the liability of aging. With age businesses are no longer encouraged to innovate, to develop their activity or reduce the concentration of their customer portfolio. In a context of stable and dynamic economic growth, they are not penalised. But a prolonged period of slowdown drives some of these old companies towards failure because of increased competitive pressures. For these reasons, in France, the average age of a failing business has been increasing since the beginning of 2009 (*chart no. 10*). A recent study by the Banque de France<sup>(18)</sup> has also shown that the 2008 crisis affected the oldest businesses as well as the newest.

**Chart No. 10**  
Average age of a failing firm in France (in years)



Sources: Scores & Décisions, Coface

(16) Freeman, Carroll, Hannan, «The liability of newness: Age dependence in organizational death rates», American Sociological Review, 1983.

(17) Barnett, «The organizational ecology of a technological system», Administrative Science Quarterly, 1990.

(18) Fougère, Golfier, Horny and Kremp, «Quel a été l'impact de la crise de 2008 sur la défaillance des entreprises?», (How did the 2008 crisis impact on company insolvencies?) Banque de France, 2013.



The coefficients obtained by model no. 1 can be interpreted insofar as they are approximated to a confidence interval above 99%. This results from the fact that we have chosen, with the automatic selection procedure (see box 3), the variables which allow statistical stability and the least skewed economic interpretation.

**Table 3**  
Parameter estimates

Coefficients	Coface %	Climate Index	GFCF %	Permits %
Total	0,65**	-0,30**	-0,67**	-0,43**
South	0,87**	-0,60**	-0,22	-1,52**
Eurozone excl. South	0,09	-0,29**	-1,00**	-0,32**
Outside Eurozone	0,35**	-0,28**	-1,02**	-0,25**

\*\* p-value <0,01, \* p-value <0,1

Source: Coface

Each variable is expressed as a percentage, except for the business climate index, which is expressed as a value and varies around 0. When the coefficient is positive and the associated variable increases, business failures will increase. On the other hand, if it is negative and the associated variable increases, failures will decline. In this respect, a 10% increase in investment is associated with a reduction in failures of 6.7% over a year. A better business climate, higher numbers of building permits (considering that, for France, 31% of failures are related to the construction sector) as well as increased investment tend to reduce the number of business failures.

The geographic specificities were subsequently isolated between the countries of southern Europe (Spain, Italy and Portugal), the Eurozone countries other than those of the south (Germany, Belgium, Finland, France and the Netherlands) and the non-Eurozone countries (Denmark, Norway, the United Kingdom and Sweden). This reveals the strong involvement of construction for the southern countries together with their major specialisation (see page 12, Appendix 2): A 10% increase in building permits leads to a 15% decline in business failures. For the other countries within and outside the Eurozone, the dynamics of private investment has high explanatory power (see page 7 "Weak investment depresses growth potential"): a 10% increase in GFCF means a 10% fall in business failures.

### Insolvencies should continue to decline until the end of 2015

Forecasts concerning the evolution of business failures obtained by model 2 are approximated with a confidence interval of 95%. We observe that the 2014 trends continue in all the countries studied (table 4, page 10). The biggest falls are expected to materialise in Spain, Portugal and the Netherlands. We note that these three countries recorded the biggest rises in 2013 (chart no. 1, page 3). This can best be described, therefore, as a catch-up effect and a return to the norm of the number of businesses in liquidation.

#### BOX 3

### Forecasting model's methodology

#### MODEL 1 : EXPLANATION

Our aim is to estimate a linear regression with several variables in order to explain the variations in business failures in the 12 countries in our sample. We first made use of an automatic procedure for selecting the variables (selection procedure according to the so-called "Akaike" criteria) for inclusion within the model. This resulted in the final selection of our four variables. Our aim was then to approximate to the following equation:

$$Y_{i,t} = \beta_0 + \beta X_{i,t} + W_i + \epsilon_{i,t}$$

Where  $Y_{i,t}$  corresponds to the annual variation in business failures for a country  $i$  at time  $t$ .  $\beta_0 + \beta X_{i,t}$  corresponds to a standard linear equation in which the four variables that we have selected appear (Coface, Climate, GFCF, Permits).  $\epsilon_{i,t}$  corresponds to the error (or residue) between the true value  $Y_{i,t}$  and our estimate. Finally our model includes  $W_i$  which corresponds to all the characteristics belonging to each country and not explicitly expressed by our variables (GDP, unemployment, etc.). Including this coefficient allows us, in the case of a panel model, to better estimate the coefficients associated with our four variables. This method is called the control of individual characteristics by the inclusion of fixed effects  $W_i$ .

#### MODEL 2 : FORECASTING

We estimate an alternative regression in order to predict the short-term variation in business failures. The premise is to consider the variables selected in the first model as leading indicators. In other words, these variables, correlated over time with business failures, can influence future variations in failures. Quantifying the relation between failures and our five variables brought forward nine months enables us to estimate business failures for the end of 2015.

$$Y_{i,t} = \beta_0 + W_i + \alpha_i Y_{i,t-9} + \beta X_{i,t}$$

We use the same coefficients for all countries in order to have a better approximation. We then correct for each country. The result  $Y_{i,t}$  corresponds to our prediction of  $Y_{i,t}$  thanks to the indicators brought forward by nine months  $Y_{i,t-9}$ .  $W_i$  corresponds to the same term capturing the same effects, as that of the model previously described.  $Y_{i,t-9}$  corresponds to the failures taken nine months previously allowing us to capture a "snowball effect". We use the same coefficients for all the countries in order to have a better approximation. We then correct for each country individually depending on the discrepancies with the general model.

In Germany, the decline in business failures observable since the end of 2010 could come to an end since we foresee a variation of between -3% and 0% at the end of 2015. This situation reflects more a normalisation of failures as their number reached their lowest point 1995 at 23,500 businesses concerned annually. In Belgium the downward trend of failures could stabilise. The situation of businesses is benefitting from more vigorous private demand (+0.7% in Q1 2015). The business climate has not been so well oriented since June 2014 and the granting of loans to non-financial businesses has been growing since April 2015 to reach an annual average of +1.2% as at end July 2015. However, the property sector remains under strain and the number residential construction permits is showing a fall of 13% as an annual average at 46,200 permits – the lowest since April 2014. Considering that 37% of business failures at the end of June 2105 concern the construction sector, failures could increase in 2015.

Norway and Italy are expected to see their business failures increase further. Italy, which underwent the greatest increase in 2014 of 11%, will remain in the red with a prediction of 7%. The causes there are structural. It is one of the countries of southern Europe with the biggest contribution of industry to its economy (see appendix 2, page 12). Italian businesses suffer from a highly competitive environment, especially against Germany. The high degree of price elasticity shows the low added value of their exports. We point out that our model

does not take into account the effects of the euro's devaluation on Italian exporters. Their exports of goods were thus growing by an average of 3.5% annually in June 2015. On the other hand the longest payment delays in our sample are putting pressure on the accounts of businesses. Finally the omnipresence of small firms weakens their viability. In Norway the increase in business failures will continue at a predicted +6% in 2015, as in 2014. With the fall in the oil price specialised businesses will remain under pressure at the end of this year.

**Table 4**  
Predictions of business liquidations by country

COUNTRY	2014		2015		
	number	var%	number	var%	inter*
Germany	24 085	-7%	23 700	-2%	-3 ; 0
Belgium	10 736	-9%	10 600	-1%	-2 ; 0
Denmark	4 049	-19%	3 800	-5%	-7 ; -3
Spain	6 407	-30%	5 100	-20%	-22 ; -19
Finland	2 953	-6%	2 700	-8%	-9 ; -6
France	44 123	-3%	42 800	-3%	-4 ; -2
Italy	15 714	11%	16 800	7%	5 ; 9
Norway	3 434	6%	3 600	6%	5 ; 7
Netherlands	9 669	-22%	7 600	-21%	-23 ; -20
Portugal	13 489	-13%	11 300	-16%	-18 ; -15
United Kingdom	17 120	-9%	15 400	-10%	-11 ; -8
Sweden	7 395	-6%	7 000	-6%	-7 ; -4

\* Coefficient's confidence interval in percentage

Source: Coface

## CONCLUSION

The financial crisis precipitated a large number of businesses into bankruptcy. In 2009, the 12 countries in our sample reported rises in the number of business failures. Although activity recovered in the following year, the recovery was of short duration because in 2012 and 2013 businesses were faced with a new economic slowdown in the Eurozone.

The Eurozone's emergence from recession in 2014 greatly benefitted businesses reflected in lower insolvency rates in 10 of the 12 countries studied. Businesses adapted their cost structure and reduced their debt burden enabling them to restore their

margins. In 2015, the decline in failures will continue in most of the countries in our sample in line with the slight acceleration of growth in the Eurozone.

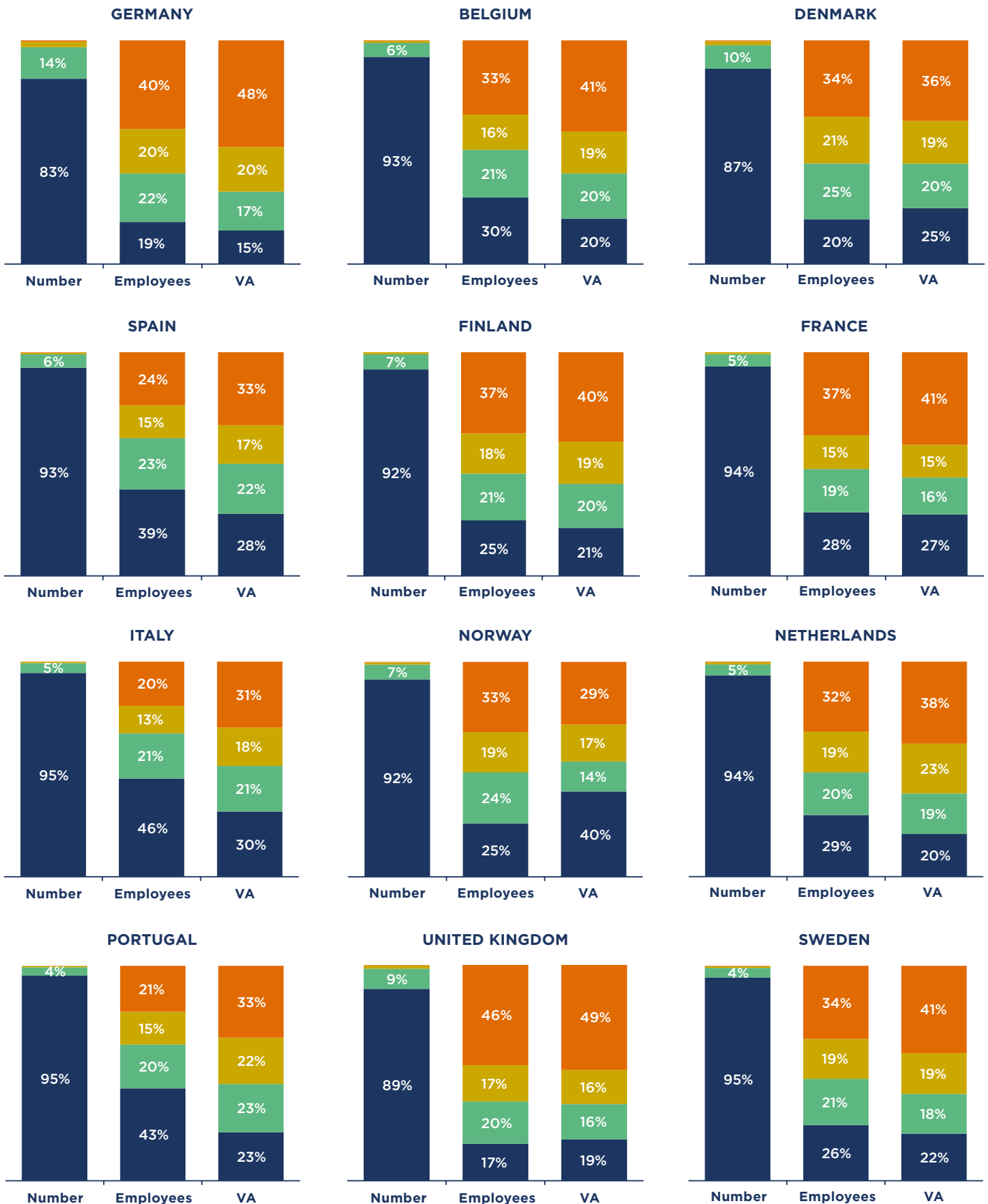
However, the situation of businesses in some countries remains critical. This is particularly true for Italy and Norway where business failures are expected to increase respectively by 7% and 6% in 2015. The numerous Norwegian businesses specialised in energy will continue to suffer from the low oil price. In Italy, the slow recovery of the economy will still put pressure on the smallest businesses, which are very numerous across the country.

APPENDICES

APPENDIX 1: breakdown of enterprises by workforce size (2014)

Source: SME Performance Review, Eurostat

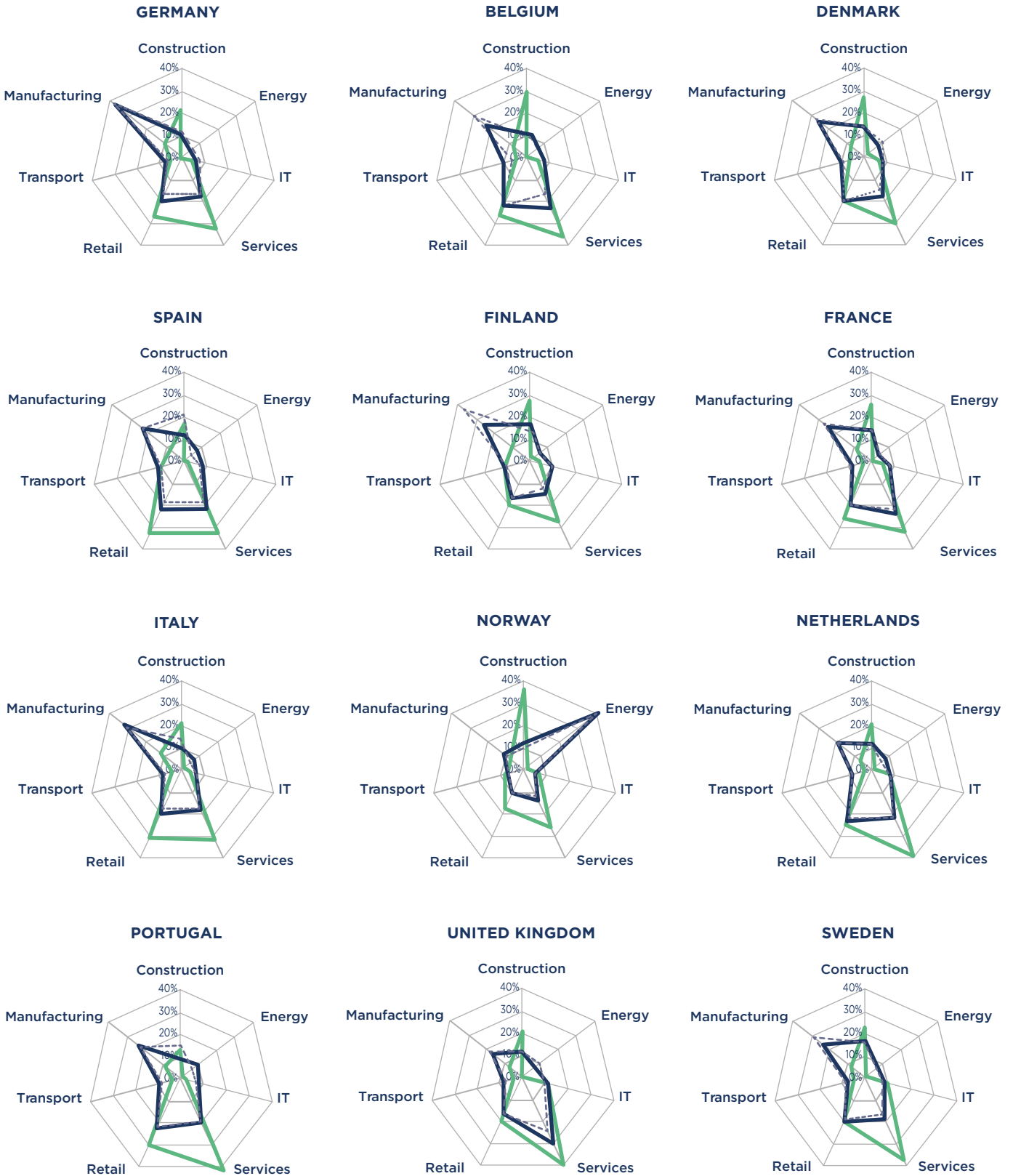
■ 0-9 ■ 10-49 ■ 50 - 249 ■ 250 +



APPENDIX 2: breakdown of enterprises by activity sector

Source: SME Performance Review, Eurostat

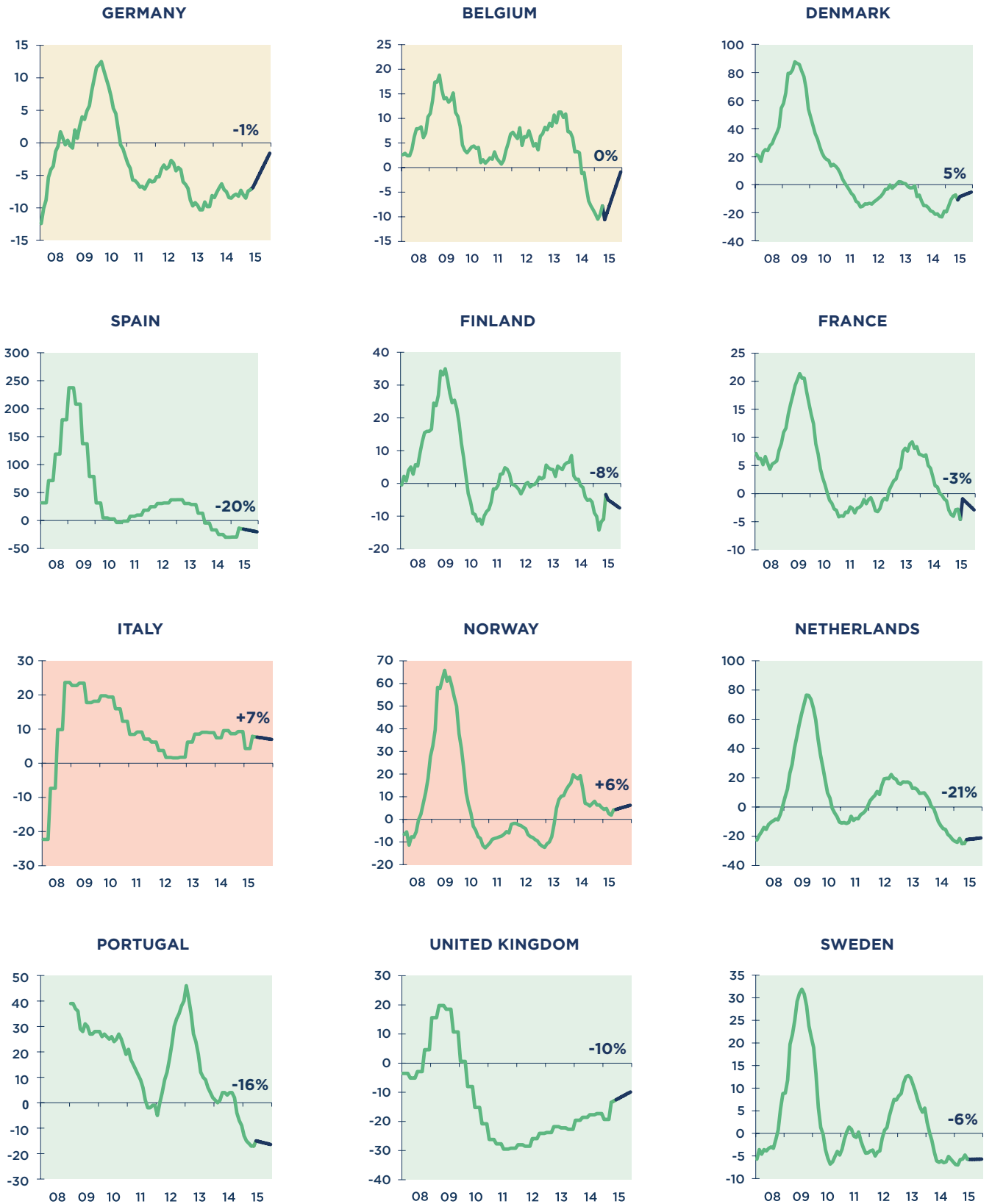
— Number 2014 — AV 2014 - - - - AV 2008



### APPENDIX 3: variation in company insolvencies and COFACE forecast (annual average)

Source: Reuters and coface

— Insolvencies — Forecast



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#### RESERVATION

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