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The Surprising Sluggishness of French Exports: Reviewing Competitiveness and its Determinants

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The surprising sluggishness of French exports: reviewing competitiveness and its determinants

Charlotte Emlinger, Sébastien Jean & Vincent Vicard

Abstract

The large deterioration in France's current account balance during the euro's first decade was mainly due to its poor export performances. Although there have been no more market share losses since 2012, French export growth lags behind that of our European partners.

Given that labor cost have grown more slowly in France than in Germany since 2011, the sluggishness of French export performance appears surprising. To date, however, the rebalancing of labor costs under way only represents between a quarter and a third of the divergence observed between 1999 and the crisis. Moreover, whether through social contribution exemptions in France or Germany's introduction of a minimum wage, the relative decrease has mainly concerned low wage brackets, which have little influence on exports. Such limited "catch-up" is symptomatic of the difficulty that the Eurozone has in implementing coordinated rebalancing policies across its Member States.

The absence of any marked improvement in French export performances remains difficult to explain by traditional determinants. French specialisation has moved away from Germany's to become closer to Italy's, but this does not seem to have been particularly problematic. The hypothesis of a hysteresis effect, according to which the decline in French industrial production is at the origin of an inability to gain back export market shares, is not confirmed analysis. The unquestionable deterioration in non-price competitiveness remains a valuable explanation, but it is difficult to relate it to clearly identified causes, whether as regards quality or investment.

Investment statistics suggest that France does not suffer from a lack of R&D expenditures in comparison with its principal neighbours; on the contrary, their level contrasts with the relative decline in manufacturing output. This finding raises the question of how far R&D activities have a ripple effect on French manufacturing. This aspect is even more important if one considers that France's economy is characterised by the major role played by its multinationals, whose activities abroad have grown more rapidly than those of other large Eurozone countries. The resulting foreign direct investment revenues do much to explain that France has a near equilibrium current account. In this respect, the French economy suffers more from a loss of industrial production sites than from any lack of competitiveness.

1. Introduction

For over a decade now, France's competitiveness has been the subject of worrying analyses, such as the Gallois Report (2012), and heated debate. This may appear paradoxical for a country whose current account was close to equilibrium in 2017 (-0.7% of the GDP, see Graph 1) and whose real exchange rate is generally considered as being close to its equilibrium level (moderate overvaluation of 0 to 8% according to the IMF¹, and undervaluation of 1.6% according to the estimate of the equilibrium real exchange rate in the CEPII's Eqchange database). But membership of the Eurozone creates a special context in which the common currency's nominal exchange rate does not only depend on the French economic situation. As a matter of fact, the Eurozone has a very high current account surplus (+3.1% of the GDP over the twelve-month period ending in November 2018) and the IMF reckons that its real exchange rate is undervalued by between 4 and 8% (IMF, 2018). The euro's nominal exchange rate is not the only or most desirable mode of adjustment, insofar as current account positions vary considerably between the Eurozone's Member States. Its appreciation cannot be excluded, however, and evaluation of France's macroeconomic and trade performances should take this into account. In other words, our analysis of French competitiveness is motivated by imbalances within the Eurozone, as much as by those outside it.

¹ External Sector Report 2018, IMF, Washington. This estimation is based on a normative current account assessment. In contrast, the IMF's estimation of an equilibrium real exchange rate gives an undervaluation of 2.2 to 4.1%.

This is why this Policy Report compares France with its three major Eurozone partners, Germany, Spain and Italy.

In order to understand the current situation, it is necessary to step back in time, at least to the creation of the euro. The deterioration of France's trade performance during the decade that followed has already been extensively analysed. Our aim here is not to add to this body of work but rather to focus on recent evolutions, emphasising the ongoing sluggishness of France's export performances despite the slowdown of labour cost growth and examining potential explanations.

2. The erosion of French export market shares

2.1. Losses of market shares have stopped, but French exports continue to be sluggish ...

France's current account balance deteriorated continuously between 1999 and 2011, falling from +3.4% to -1.0% of GDP, recovering slightly since, but with no steady trend and an average deficit of 0.7% of GDP between 2015 and 2017 (Graph 1). The contrast with the German current account surplus is striking, as the latter increased almost continuously over the same period, to reach 8.1% of the GDP in 2017, and even with Spain's, whose adjustment since 2008 has been spectacular.

The current account balance is not an indicator of success – a surplus or deficit is not an indicator of economic health per se, it only reflects the difference between national production and consumption – and the weakness of domestic demand has contributed substantially in the German and Spanish cases. The evolution observed in France reflects however a lack of dynamism in export of goods and services, which is reflected in the sharp reduction of their global market share, from 5.8% in 1999 to 3.5% in 2017, a drop of 40% (Graph 2). European countries are expected to lose market shares in line with the increasing importance of emerging economies, in particular China in global trade; and . Italy also underwent a similar decline. The contrast with Germany and Spain is however striking: their export market shares hardly declined by 10% over the same period².

2012 was a turning point for all four countries, ending the continuous erosion since 2003. The trend difference between the two groups remains: while France's and Italy's market shares stabilised (at around 3.5% and 2.7% respectively), Germany's and Spain's increased to 8.1% and 2.1% respectively in 2017.

2.2. ...despite the relative decline in labour cost compared with Germany

These divergences in current account evolutions and export performances took place in a highly specific macroeconomic context following the creation of the euro. Each of its first two decades of existence must be distinguished. Up until 2008, the path of nominal wages growth differed markedly between the major Eurozone's States: since 1999, nominal wages increased by 11% in Germany, 29% in France, 32% in Italy and 42% in Spain (Graph 3.a). These trends then changed radically under the combined effect of the financial crisis and the Eurozone crisis that followed. Wage growth slowed down in Italy and above all in Spain, while it accelerated in Germany, partially bridging the accumulated gap. In this movement, France stood out for the stability of its nominal wage growth rate, which slowed down later and to a lesser extent as from 2013.

These divergences are particularly important insofar as these countries share the same currency, which prevents any adjustment by exchange rate. In this context, the common monetary policy is a key coordination factor whose objective is price stability. In order to achieve it, the ECB's Governing Council specified in 2003 that it aimed at an inflation rate close but under 2%. This target consequently constitutes the reference point for the evolution of prices and unit labour costs (ULCs). Unit labour costs are equal to total compensations divided by the value added in volume, i.e. to the labor share in value added multiplied by the inflation rate (prices of value added in this case). For the distribution of value added between capital and labor to remain stable, ULCs must therefore grow at the same pace as inflation.

² These two countries also experienced a more dynamic growth of their imports over the same period. In addition, the measurement of global market share is sensitive to the exchange rate: for example, the steep depreciation of the euro in 2000 explains the sharp drop in the all four countries' market shares that year.

In other words, the ECB inflation target of 2% shall also be interpreted as standard for ULC growth at the Eurozone level. The divergences observed before the crisis may then be interpreted in line with this standard: the near-stagnation of ULCs in Germany constituted a massive downward deviation, while ULCs growth significantly exceeded the target in Italy and above all in Spain (yearly average growth of 3.5% and almost 4% respectively from 1999 to 2009, see Graph 3.b). With one divergence compensating the other, these trends did not cause average inflation to deviate from its target, but they did generate considerable divergences within the eurozone. Up until 2012, however, France recorded ULC growth remarkably close to the 2% ECB inflation target.

The reduction of divergences following the crisis calls for two main observations. First, the ULC growth rate remained significantly below the 2% standard, which has only just been achieved by Germany over recent years. Secondly, the reduction was only partial in 2017: the cumulative increase in ULCs since 1999 comes to 21% in Germany, 32% in France and Spain, and over 41% in Italy³. We should nonetheless bear in mind that the measurement adopted here does not take account of the *Crédit d'Impôt pour la Compétitivité et l'Emploi* (CICE – Tax Credit for Employment and Competitiveness), which reduced the average unit labour cost in France by 2.5% in 2018. At its present pace, removal of imbalances accumulated over the Eurozone's first decade should take about twenty years. In order for it to take only ten years, Germany's ULC growth rate (and therefore inflation, if there is no major structural change) would have to be 2 points ahead of the rest of the Eurozone, which, unless the latter accepted an extended period of deflation, would require long-term acceleration of inflation in Germany above 2% (Gaulier and Vicard, 2018).

These highly contrasting evolutions in labour costs are clearly determining contextual factors as far as trade evolutions are concerned. Their influence is complicated to evaluate nonetheless, given the differences between sectors and countries, the special character of the Single Market and the Eurozone, and the duration and scale of the changes observed here. The academic literature however enables us to put forward a simplified quantification, assuming that a constant part of the cost shock is transmitted to price (60 to 80%) and that the export price elasticity is constant (see Box 1 for details on hypotheses and their sources). For simplicity's sake, we shall focus this quantification on the Franco-German performance differential.

According to this calculation, ULC divergences would involve an increase in German exports 13% to 18% faster than France's between 1999 and 2008 (high point in the relative differential of ULCs between France and Germany), to around half the 37% difference observed over this period (Graph 4)⁴. This quantification is therefore consistent with an important but partial role played by labour costs in explaining comparative trade performances up to 2011.

This was no longer the case after 2011, however. Labour costs in Germany increased more rapidly than in France, which, according to our simplified quantification, involves a 5% to 6% less rapid growth in German than French exports between 2011 and 2017. Quite the opposite was the case, in fact, as growth of Germany's exports was 7% higher than France's. Admittedly, French exports suffered negative cyclical shocks over the period, including the very poor cereal harvest in summer 2016 and the negative impact of terrorist attacks on tourism revenues in 2015 and 2016. Nonetheless, the steady and lasting nature of the relative evolution leaves no doubt about its structural character.

In sum, although divergences in relative labour costs may go a long way in explaining the divergence in German and French export growth up to 2011, they are of no help in understanding why it has persisted since then. In particular, in view of the evolution in market shares described above, it is the sluggishness of France's export performances since 2008, and above all since 2011, that is surprising, given the context of cost moderation. In order to better understand this apparent paradox, we need to make a more in-depth analysis of export performance determinants.

³ Making an average annual growth rate over the 1999/2017 period of 1.1% in Germany, 1.6% in France and Spain, and 1.9% in Italy.

⁴ These orders of magnitude are consistent with the results obtained by Le Moigne and Ragot (2015), who consider that Germany's wage stagnation explains 40% of the gap in growth between French and German exports between 1999 and 2012.

2.3. A recent catch-up to be put into perspective

Evaluating the rebalancing of labour costs in the light of the preceding divergence, as we have just done, is subject to two main limitations. The first is connected with choice of reference year, as it is implicitly regarded as a situation of equilibrium once the return to a comparable relative situation is presented as a levelling-out of variances. Using 1995 as reference year, instead of 1999 as we do here, would involve a greater divergence, as the German ULC fell by 4.2% between 1995 and 1999 whereas France's increased by 1%. Consequently, the cumulative France-Germany variance in ULC evolution would reach 24.1 percentage points over the period 1995-2011, as against 18.3 points between 1999 and 2011. From this point of view, the recent catch-up only represents a quarter of the initial divergence.

The second limitation has to do with ULC composition by wage level: the social contribution exemptions targeting low wage brackets implemented in France since the late 1990s (including in the form of tax credits in the context of the CICE⁵) have relatively little direct impact on exporting companies, as they pay higher than average wages and employ relatively few staff whose wages are within the targeted brackets⁶. For the same reason, Germany's introduction of a minimum wage is unlikely to have affected German exports. Admittedly, exporters are concerned by such evolutions as they purchase services whose providers often employ a lot of low-wage workers: hence, the part that low wages play in exporters' production costs increases from 3 to 9% when account is taken of intermediate consumptions (L'Horty et al., 2019). But the indirect effect is probably not as great as analysis of the evolution of the average ULC might lead us to believe, largely due to incomplete transmission of labour cost reductions to intermediate consumption prices. Over the long term, such differentiated evolutions in labour costs depending on levels of qualification may also have had an impact on non-price competitiveness by reducing business incentives for quality upgrading of companies.

2.4. The contribution of ULCs in service sectors

More rapid growth of French ULCs across the whole economy is also expressed by major divergences between tradable and non-tradable sectors. For manufacturing sectors alone, ULC growth was similar in France and Germany throughout the period. Effects of composition partly explain this parallelism. The significant reduction in French manufacturing output gave rise to firm selection, to the advantage of the most productive, which increases the sector's average productivity above its growth rate in firms that remain active.

The divergence between the two countries can therefore mostly be put down to service sectors. Nevertheless, repercussions on industrial costs are not as strong as the aggregated evolution might lead us to believe, because not all the services most used by the manufacturing sector have seen their ULCs increase more quickly in France than in Germany (Table 1). In particular, activities of professional, scientific, technical, administrative and support services, which constitute the bulk of manufacturing sector's intermediate consumptions, saw their ULCs increase significantly more rapidly in Germany than in France between 1999 and 2015, with a difference of 33%. This was also the case in finance and insurance, with an even larger divergence. Non-tradable service sectors (construction, real-estate activities, electricity, gas and water supply, and trade) experienced markedly faster growth of ULCs in France than in Germany. Less used by manufacturing sectors, these sectors' evolutions have little direct effect on the French manufacturing sector's cost competitiveness. Weighting service sectors by their share in the manufacturing sector's intermediate consumptions shows that services' ULCs increased 8 percentage points more in France than in Germany between 1999 and 2015, half as much than for the whole economy (14%). The increase in services' ULCs certainly affects industrial costs, but not as much as the aggregate evolution might suggest.

⁵(5). Over the recent period, targeting of social contribution exemptions on low wages went alongside a less rapid rise in the SMIC than in the median wage, in particular since 2012. Since 2017, labour costs at French minimum wage level have returned to the average for OECD countries (Expert Group on the SMIC, 2018); in 2019, the CICE's conversion into social contribution exemptions and the minimum wage increases announced by our European partners (Germany and Spain) should reinforce the relative decrease in labour costs at SMIC level in France in comparison with other countries.

⁶ See Malgouyres and Mayer (2018) on the CICE's lack of impact on French companies' exports, and Malgouyres (2019) for the case of social contribution exemptions in the "Juppé" system.

Over the recent period, during which average ULCs increase more rapidly in Germany than in France (2011-2015 in Table 1, due to the availability of detailed data), the divergence in evolution between tradable and non-tradable sectors is less marked. Weighting service sectors by their share in the manufacturing sector's intermediate consumptions, growth of ULCs in services in Germany was 6 percentage points faster than in France between 2011 and 2015.

3. The French trade specialisation in question

The analysis of France's trade specialisation is a first avenue for evaluating to which extent specific sectors played a role and whether the demand addressed to French exports has been particularly weak.

3.1. An erosion common to almost all sectors, and particularly marked in the automotive sector

When the trend is analysed by sector, aeronautics stands out as an exception as France's market share in global exports has increased significantly since 1999 (Graph 5). Airbus and its combined manufacturing setup has naturally been playing a key role here, representing a sixth of France's manufactured product exports in 2016. The luxury sector is also an exception due to its trade dynamism (Bussière *et al.*, 2014), but does not figure at this relatively aggregated sectorial level. As for the others, losses of market shares are common to all sectors, with an overall decline approaching 40%.

The electronics sector has seen the steepest drop in market share in relative terms (from 3.8 to 1.6%), followed by the steel industry (from 6.4 to 3.1%). For the latter, the drop essentially occurred prior to the crisis and French market shares have remained stable since 2011. Such is not the case with the automotive sector⁷, which is also one of the sectors that have lost the most on international markets and whose downturn has been yet more marked over recent years (from 4.5 to 3.5% between 2011 and 2017). Electrical products have also suffered a major downturn that has been relatively continuous since 1999. Along with aeronautics, the agrifood and chemicals sectors post the largest shares of the global market (4.3% and 4.5% in 2017). However, both sectors have seen their shares fall steadily since the beginning of the period. As for the services sector, it has maintained its export market share, which has scarcely fallen since 2008. The textiles sector has also maintained most of its market share.

The automotive sector has played a particularly prominent role in France's trade balance given its importance (7% of exports on average over the period) and the contrast in performances observed on either side of the Rhine: the French surplus for the sector in 1999 (+6 billion euros) turned into a 14 billion-euro deficit in 2017, while the German surplus increased from 47 to 134 billion euros over the same period. The automotive sector alone is therefore at the origin of a deterioration of France's trade balance relative to Germany's of 107 billion euros between 1999 and 2017, over a third of the 306 billion-euro difference that has developed (Graph 6)⁸. This contrast in trends is all the more remarkable in that it essentially materialised before the crisis, with respective balances showing no trends since.

3.2. Foreign demand on export markets has not worked against France

Is this reduced export dynamism the result of specialisation poorly adapted to global demand? This question has been examined frequently in the past, and has generally been answered in the negative (Bas *et al.*, 2015; Fontagné and Gaulier, 2008). The most recent data confirms this finding: foreign demand growth is similar among all the Eurozone's large countries. Calculated as the average growth rates of demand by market (defined here as a product in a destination), weighted by the size of each market in the exports of the country, this indicator measures the average dynamism of demand on a country's export markets. For the Eurozone's four largest countries, there was a significant slowdown between the 1999--2008 and the 2011-2017 periods, very similar for all the countries under consideration although even more

⁷ In the CHELEM-CEPII database used here, the automotive sector also includes rail transport equipment.

⁸ The automotive sector also made a positive contribution to Italian and Spanish trade balances throughout the period, but in more limited fashion than in Germany (+2.4 billion on an Italian trade-balance improvement of 36.7 billion between 1999 and 2017; +10.8 billion for a total improvement of 5.1 billion in the Spanish balance).

marked for Italy (Graph 7). In other words, the decline in France's market shares cannot be explained by weaker demand growth on its export markets.

The enlargement of the European Union in 2004 and 2007 also benefited to Germany, given its close geographical and cultural proximity to Central and Eastern European countries; according to simulations by Mayer *et al.* (2018), the 2004 enlargement increased German trade three times more than French trade (see Box 2). The orders of magnitude suggest that it played a limited direct role in German spectacular export performance. The relocation of part of the value chains of the German industry to their Central European neighbours has undeniably contributed to their competitiveness (Fontagné and Toubal, 2011). A priori, the enlargement has produced most of its impact on trade in the 2000s, which does not make it a convincing explanation for the recent performance differentials.

3.3. French specialisation is moving away from Germany's to become closer to Italy's

The similarity in demand addressed to the Eurozone's largest countries is largely the result of similarities in destination markets served by these countries' exporters, as has already been widely documented (e.g. in Fontagné and Gaulier, 2008). Such specialisations are not fixed, however. Finger and Kreinin's export similarity index (1979), which measures degrees of overlapping between two countries' export structures, enables evaluation of their recent evolutions. Here, the calculation is made by regarding a product in its destination as an "elementary market". The index varies between 0, for specialisations with no overlaps, and 100, for identical distributions.

The departure point is characterised by the similarity of France's and Germany's export structures, which are markedly larger than Italy's and, a fortiori, Spain's (Graph 8). There was little change in the similarity with Spain, which increased at the beginning of the period only to decrease slightly once again, back to its 1999 level in 2016. Evolution over the period is nonetheless highly significant for a structural indicator of this type: France's export specialisation gradually drifted further away from Germany's, to approach Italy's, in particular towards the end of the period. In 2016, and to the best of our knowledge for the first time since this type of calculation started being made, France's trade specialisation appeared to be as close to Italy's as it was to Germany's.

Another structural aspect of economies' specialisations that is often highlighted is the quality range of exported products. In this respect, however, the various countries' export structures showed no significant modifications over the period⁹. Germany's specialisation in high-end products was real and stable throughout the period (around 50%). Similarly, the percentage of products classified as high-end was relatively close in France and Italy (an average approaching 40% over the period) and significantly lower in Spain (between 28 and 30%), but these disparities between countries have remained largely unchanged over the last two decades.

3.4. The "hysteresis effect" hypothesis does not stand up to analysis

One explanation that is sometimes put forward is the irreversible nature of the loss of industrial substance, which creates a hysteresis effect, i.e. the consequences of past loss of price competitiveness will continue even after costs have been rebalanced. De facto, there has been highly varied evolution of large Eurozone countries' manufactured output since 1999, the over 40% increase in Germany contrasting sharply with the almost 15% drop recorded in Spain and Italy, as well as with the French manufacturing industry's laborious return to its 1999 level following the over 20% fall it suffered during the financial crisis (Graph 9). Export performance is also conditioned by production capacity, in particular insofar as diversification of the national offer fosters sales abroad (Gagnon, 2007; Bussière *et al.*, 2014).

At the firm level, however, the relationship is less clear. Although Berman *et al.* (2015) show that a positive shock on sales abroad increases sales in the country of origin, possibly because of the cash flow they generate, Almunia *et al.* (2018), on the contrary, find that a drop in domestic demand led Spanish companies to export more, probably

⁹ World Trade Flow Characterization database, CEPII.

because it reduced their short-run marginal production costs. According to their estimations, this mechanism could go halfway to explaining the astonishingly high growth of Spanish exports between 2009 and 2013. We should also emphasise, even though it has not been proven empirically, that the weakness of domestic demand in Germany in the early 2000s is often presented as one of the possible reasons of German companies' export dynamism at the time. In sum, there is nothing to suggest that any unequivocal causality exists according to which low domestic sales lastingly hamper progress in exports. On the contrary, a weak domestic market may encourage companies to focus on foreign markets, and good export results may help rectify performances on the national market.

In order for hysteresis to be a plausible explanation for France's poor trade performances, loss of industrial substance would also have to be difficult to reverse. The difficulty of finding and training a suitable labour force and of financing and implementing the necessary investments may lead to delays and limit the speed of adaptation of the supply, but it does not explain a sluggishness continuing over several years. In addition, although the rate of vacant posts in industry has increased considerably over recent years, from 0.5% in second quarter 2015 to 1.1% in third quarter 2018 (according to the ACEMO [Labour Activity and Employment Conditions] survey carried out by DARES [Research, Studies and Statistics Department]), its level is not very high in absolute terms and is still below that of any of the other large sectors.

The only solid argument that might lead one to suppose that there is a significant hysteresis effect is the existence of agglomeration effects, through which past successes create the bases for future advantages in the industries concerned. The literature has confirmed the reality of such agglomeration effects, resulting from externalities connected with inputs, the labour market and knowhow (Rosenthal and Strange, 2004; Martin *et al.*, 2011). Their extent is nonetheless limited, as a twofold increase in productive activity only results in a productivity gain of around 5%. Unless one assumes that intersectorial agglomeration effects that could not be measured have added to estimated effects, it is not enough to assume that recent evolutions would have been able to create stable balances that would be difficult to break free of today.

The hypothesis of hysteresis effects powerful enough to explain the recent sluggishness of French performances therefore has no solid foundation. Observation of Spanish performances should also be enough to illustrate the limits of this rationale, as the downturn in its production after the crisis, which was markedly sharper than in France, did not stop it from gaining back substantial export market shares (Graph 2). We should finally emphasise that if major hysteresis effects existed, they would most probably have contrasting impacts on different sectors, depending on France's industrial performances and sectorial sensitivity to agglomeration effects. The crosscutting character of the sluggishness of France's trade performances highlighted above (Graph 5) argues against this being the case.

4. Investment and non-price competitiveness

As, on average, companies only pass a part of their cost evolutions on to their sales prices, gains in cost competitiveness have translated into increasing margins for German firms. Hence, non-financial companies' profits¹⁰ in value added increased by 1.8 percentage points in Germany between 1999 and 2017 (including 3.8 points between 1999 and 2011) whereas it fell by 0.7 points in France (including 1.5 points between 1999 and 2011). According to one explanation often put forward, profits accumulated by German companies would have enabled them to invest and increase their non-price competitiveness (Bechetoille *et al.*, 2017; Gallois, 2012). It is important to note that the term non-price competitiveness encompasses all factors other than sales prices, including quality (effective and perceived), range positioning, brand image, innovation, aftersales services, marketing action and distribution networks, etc... As such, apart from the few cases where a causality can be established with products' characteristics¹¹, non-price competitiveness (or the notion of product quality, which is often used more or less interchangeably) is deemed residual – i.e. as variations that cannot be explained otherwise. In this sense, it is a measure of our ignorance. As it happens, studies on the quality of exported products highlight the high quality of German

¹⁰ Gross exploitation surplus (GES) divided by gross value added (GVA), source Eurostat.

¹¹ As, for example, is the case when external sources provide information on the quality of companies' products, which is only possible for a specific sector (see for example Crozet *et al.*, 2011, on champagne).

exports, without however suggesting that France underperforms in this respect, despite some deteriorations since the crisis (Bas *et al.*, 2015).

Whatever exact interpretation is given to non-price competitiveness, its use in interpretation of export divergences between France and Germany is based on the hypothesis that accumulation of profits enabled extra investment. Such link between profit margins and investments is by no means direct from a theoretical point of view: an investment with a positive net present value for a company may just as well be financed from equity capital as from borrowing when the company has no financial constraints. In the French case, as studies do not show any significant financial constraints on companies over the period under study (Kremp and Sevestre, 2013; Avouyi-Dovi *et al.*, 2016), the argument's pertinence remains to be demonstrated. Analysing the evolution of investment rates however provides interesting insights.

4.1. Similar rates of investment excluding construction among European countries...

For the economy as a whole, the investment rate in France remained relatively stable between 1999 and 2016, at around 22% of GDP (Graph 10.a), about two points above the German rate. This indicator may be misleading, however, as it includes construction, in which investment is volatile and difficult to compare between countries, and is not directly linked to competitiveness. Excluding construction, the investment rate in Germany appears as the highest of the Eurozone's four largest countries, exceeding France's by an average of half a GDP point (Graph 10.b). Nonetheless, the connection with trade performances is by no means evident, for two main reasons. Firstly, investment excluding construction in Germany decreased significantly in the early 2000s, at the exact time when the country's export performances were taking off. More generally, no clear link between the evolutions of the investment rate excluding construction and countries' relative trade performances appears. Secondly, Spain recorded good trade performances over the period, even though its investment rate excluding construction continued to be lower than France's. In other words, comparative examination of investment rates excluding construction sheds no real light on trade performances.

4.2. ...which mask a French specificity in intangible investment

A more detailed examination of investment highlights a marked specificity with regard to France (Graph 11): compared with its three main Eurozone partners, its investment rate has remained significantly lower for machinery and equipment (around 5% of GDP since 2010, whereas its partners record rates of between 6 and 7%) but much higher for intellectual property (5.5% of GDP in 2016, as against under 4% for Germany and around 3% for Spain and Italy).

The low rate of tangible investment in France is largely due to the manufacturing sector's share in the economy, which was much lower than among its partners throughout the period, a specificity slightly accentuated compared with Spain and Italy, and markedly so compared with Germany. Measured in value added, the share in the manufacturing sector was 11.4% in France in 2017, as against 14.2% in Spain, 16.6% in Italy and 23.4% in Germany. As regards the manufacturing sector, France is also characterised by a lower rate of investment in machinery and equipment than its European partners¹².

The extent of French intangible investment is more surprising, but separating the main types of expenditures helps understand it better. As regards expenditures on R&D, a marked qualitative difference is evident between Italy and Spain, where they were a little under 1.5% of the GDP during the most recent years for which statistics are available, and France and Germany, where they were close to 2.5%. According to this criterion, then, France is not badly positioned, even though it should be emphasised that there is no clear upward trend to be observed in France as there is in Germany, which does not bode well for the future.

As regards software and databases, there is a striking disparity in relative terms between France (where such investment expenditures exceeded 3% of GDP in 2015, showing a sharp upward trend) and its partners (where it was close to 1.5%). This French specificity first raises the question of comparability of intangible

¹² For more detailed on this point, see Guillou *et al.* (2018).

investment data between countries. Accounting methods, even though harmonised, may differ between countries. Intangible investment in software and databases corresponds to assets purchased by companies, easily measurable in their accounts, and to development of special software packages, whether outsourced to IT services companies or developed internally. In the two latter cases, measurement of gross fixed capital formation (GFCF) is less direct and calls for methodological choices that may well differ from one country to another¹³. A number of investment rates in intellectual property differ between countries to astonishing significant extent at sectorial level: up to threefold in the IT, electronic and optic product and electrical equipment manufacturing sector between France (around 50% of value added) and Germany, Spain (approaching 15%) and Italy (under 10%). Differences of the same order of magnitude are to be found in the transport equipment manufacturing sector, in which France reached close to 50% of investment rate in 2015 (twice as much as in 1999) against 20% in Germany or Italy and around 5% in Spain. Subject to a more exact inventory and more in-depth understanding, it does not seem to us that these statistics can be used unreservedly as a tool for diagnosis of these countries' comparative trade performances.

Beyond issues of international comparability, intangible investments are particularly difficult to measure. National accounting¹⁴ gradually incorporated a number of new intangible expenditures such as software packages and databases during the 1995 revision of the European System of National Accounts and R&D in the 2010 revision. of the accounting of intangible investments is still a somewhat piecemeal undertaking, nonetheless, as it does not include various assets connected with innovation capital and economic competences, such as companies' brand image, market development, employee training and organisational capital. Nor do companies' expenditures on the most directly concerned activities and functions enable proposal of any operational measurement, due to their lack of connection with innovation, profitability or productivity performances. For example, data on management quality produced by the World Management Survey reveals major variability between companies in the same country, and France's intermediate positioning among rich countries: ahead of Spain, at the same level as the United Kingdom and Italy, but behind the United States, Germany and Japan. However, INTAN-invest¹⁵, a database specifically devoted to measurement of intangible capital, measures greater investment in organisational capital in France and the United States (3.5% of value added) than in Germany (2.5%), Italy (1.5%) and Spain (1.1%). Although a number of studies based on survey data make a connection between a company's organisational capital and its productivity (Bloom and van Reenen, 2010), and between intangible investment in general and companies' growth (Chappell and Jaffe, 2018), they still provide an incomplete picture.

The poor performances of the education system compared with those of other countries, as highlighted in the OECD's PISA surveys, and young workers' skills levels (see, for example, the PIAAC survey) are a major challenge for France and may have contributed to trade performances, along with the deterioration of non-price competition. Their influence has manifested itself very gradually, however, and is hard to identify.

In sum, even though non-price competitiveness is a tempting explanation for developments that cannot be clearly attributed to observable causes, it has to be acknowledged that in-depth understanding of its outcomes and measurement of its determinants is still limited. In this respect, explaining France's trade performances by the weakness of its non-price competitiveness is a qualitative interpretation that cannot claim to be based on clearly established cause-and-effect relationships.

¹³ IT services companies' production may be assigned in intermediate consumption or in gross fixed capital formation. In addition, internal development of software is evaluated based on work devoted to it, which requires identifying the employees concerned and the percentage of their time devoted to the task. The deflators employed may also depend on the details of available data.

¹⁴ Company balance-sheet data provides information on intangible assets that companies acquire (patents, brands, etc.) but not on intangible capital developed within a company.

¹⁵ <http://www.intan-invest.net/>

4.3. The role of multinationals

Although intangible assets are likely more mobile than machines and equipment, French public policies targeting R&D in particular are largely based on the hypothesis that increasing intangible investment is instrumental in maintaining productive activity in France. The above mentioned gap between high intangible investment (a finding that can hardly be disputed even though it is poorly measured) and low industrial production questions this hypothesis in the French case. This issue is all the more important that the French economy stands out for the internationalization of its companies through foreign activity: French multinationals employed almost 6 million employees abroad in 2014, whereas German multinationals only employed a little over 5 million, the Italians 1.8 million and the Spanish under a million (Vicard, 2018). This French specificity has been accentuated over the recent period, with French multinationals' employees and turnover abroad increasing by almost 60% between 2007 and 2014, twice as much as for German and Italian multinationals (Graph 13).

Multinationals' activities abroad generated positive net investment revenues of 43 billion euros in 2017, 1.9% of France's GDP (as against 1.5% of Germany's GDP and around 0.5% in Spain and Italy; see Graph 14), which partially compensated the deficit in trade of goods and services¹⁶. The consequences for production in France and exports are ambiguous, however, as underlying strategies may well have been very different. According to INSEE statistics, multinationals' share in French exports remained stable at 88% between 2011 and 2015, but estimations for the 2001-2007 period had shown that, accounting for sector and destination specific effects, the average export performances of independent companies were better than those of multinational companies (Bellas *et al.*, 2010).

The automotive sector provides an illustration of the potential impact of multinationals' location choices. As regards production by French brands intended for the domestic market, the percentage located in countries with lower average incomes than France increased from under 10% in the early 2000s to almost 50% in 2016; over the same period, it increased from 15% to 25% for German brands (Head and Mayer, 2018). The design and R&D activities, however, essentially continued to be located in France, illustrating the dissociation between activities connected with intangible investment and production activities. This dissociation might also be increased in the French case by tax incentives targeting R&D activities, in particular the *Crédit d'Impôt Recherche* (CIR – Research Tax Credit¹⁷).

5. Conclusion

The continuing sluggishness of France's trade performances over recent years, marked in particular by its inability to make any significant and lasting reduction in the trade deficit or regain back lost market shares is cause for surprise. Up until the crisis, the more rapid rise in unit labour costs in France and the steep decline in the automotive sector's trade balance partly explain the divergence vis-à-vis Germany. Neither of these explanations holds for the recent period.

The relative drop in the average labour cost in France compared with Germany should certainly not be expected to have a significant effect on the trade performance of the two countries. It only represents between a quarter and a third of the increase recorded between 1999 and the crisis. Moreover, whether by social contribution exemptions in France or the introduction of a minimum wage in Germany, this relative drop has mainly concerned low wage brackets, which have little influence on exports. Essentially, the limited reduction of the labour cost differential that had developed previously is symptomatic of the difficulty to implement coordinated rebalancing policies within the Eurozone, and largely explains the lack of any real improvement in France's performances.

¹⁶ Tax avoidance by multinationals also inflates their profits abroad and significantly diminish the profits of foreign multinationals declared in France (Vicard, 2019). Such fiscal strategies on the part of multinationals, which include intragroup manipulation of transfer prices, also lead to the deterioration of the French trade balance (Vicard, 2015).

¹⁷ In addition to the existing dissociation, this tax credit may also be at the origin of a statistical bias as it is likely to encourage a widening of the scope of expenditures supposedly connected with R&D.

This context does not enable understanding the recent relative deterioration compared to Germany, which leads to the examination of other possible explanations. French specialisation has evolved, moving away from Germany's to become closer to Italy's, but this does not seem to have had any significant negative impact, as the average growth of foreign demand on French export markets has remained similar to its major partners. The hypothesis of a hysteresis effect, according to which the decline in French industrial production is at the origin of a lasting inability to regain back export market shares, does not stand up to analysis either: there is certainly a loss of industrial substance, but agglomeration effects are not great enough for this to prevent a future recovery.

The often cited deterioration in non-price competitiveness is, by nature, difficult to attribute to any clearly identified causes. The French investment rate excluding construction is admittedly slightly lower than the German, but the difference is a moderate one and it was still higher than the Italian and Spanish rates throughout the period. The relative importance of intangible investments, although hard to interpret given measurement problems, suggests that France does not suffer from any lack of expenditure on R&D in comparison with its main neighbours; on the contrary, in the level of intangible investments contrasts with the relative slump in manufactured output. This finding raises the question of how far R&D activities have a ripple effect on French production. This issue is all the more relevant for France because of the major role played by its multinationals whose foreign operations have grown faster than their production in France, a trend significantly more marked than in the Eurozone's other large countries. The resulting foreign direct investment incomes contribute to explain the fact that France records a current account close to equilibrium.

In sum, France's situation reflects its participation in a Eurozone whose macroeconomic rebalancing is yet to come, due to lack of coordination, as well as the extent of its large companies' investments abroad. The French economy suffers more from a loss of industrial production sites than from any lack of competitiveness.

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Box 1 – A simplified quantification of labour cost shocks on France's exports relative to Germany's

Assessing the impact of unit labour costs on exports is complex, among other things because it is not necessarily the same for each sector and the workforce employed by exporters is not representative of the national labour force taken as a whole. We propose here as a guide a simple quantification based few assumptions from the relevant literature. It requires: (i) calculating the impact of a change in labour cost on a firm's total costs, (ii) converting the change in total cost into a price change (taking account of changes in firms' margins) and (iii) converting the price change into aggregate exports.

We approximate the wage share in exporters' total costs by the share of domestic value added in exports, equal to 75% for France according to TiVA (74% for Germany). The question (ii) of the transmission of cost shocks to prices is more complex. Here, we rely on the results obtained by Amiti *et al.* (2018), who show

that large companies adjust their prices with a 60% elasticity in response to a shock on their costs. As such elasticity is estimated on short-term shocks, we also present results with a larger elasticity (80%) in order to take into account the persistence of divergences in ULCs between France and Germany. Finally regarding (iii) of the price elasticity of exports, we use the trade elasticities obtained by Fontagné *et al.* (2018) for different types of shocks on French firm level data. We use the elasticity to tariffs shocks (equal to 2), corresponding to a persistent shock applying to all European exporters of the same product. This type of shock appears consistent with the one resulting from the divergence in labour costs between France and Germany, which has continued for over a decade. This shock also applies to all French producers: for a firm, its impact on exports is therefore not as large as that of a shock that it would suffer on its own, and which would put it at a disadvantage *vis-à-vis* its immediate competitors.*

* Shocks on production costs (energy costs for French companies) used by Fontagné *et al.* (2018) are persistent but specific to a company; they obtain greater elasticity, 5. Conversely, real exchange rate shocks apply to all French exporters but are perceived as less persistent and are more volatile than other shocks; estimated elasticity is therefore 0.6.

Box 2 – The EU enlargement in 2004 increased German trade three times more than French trade

Measured by total exports and imports of goods and services as a percentage of GDP, German trade openness, already high in 1999 for an economy of its size (it reached 53%, as against 50% for France), increased much more quickly than in similar countries, up to 87% in 2017, as against 63% in France. Does this evolution reflect economic policies fostering openness, evolutions in firms' strategies, or simply the consequences of the EU enlargement in 2004 and 2007 to Central and Eastern European countries that are very close to Germany geographically and maintain close cultural and historical ties with it?

We use a structural gravity equation to simulate the enlargement's contribution to the growth of exports and imports of EU countries. We first estimate the impact of the single market on trade using bilateral trade data over the 1948-2012 period. Based on 2003 data, a gravity model calibrated on the basis of this analysis enables simulating how the structure of world trade would have evolved if the

EU's enlargement had not taken place (see Mayer *et al.*, 2018*). The difference with trade actually observed identifies the impact of the enlargement (Table 2).

These simulations suggest that the EU enlargement increased Germany's external trade by 8% (+7% for exports and +9% for imports), a markedly greater effect than that estimated for Italy (+5%) and a fortiori for France (+3%) and Spain (+2%). In fact, trade with the new Member States increased for all these countries, and variances between countries were in line with the simulations: in percentage of the GDP; trade in goods with the new Member States increased by 6 percentage points in Germany between 1999 and 2016, as against 2 points in Italy and Spain and only one point in France. This confirms that the expansion contributed to the remarkable dynamism of German international trade over the period; however, according to our simulations, it does not go very far in explaining the remarkable increase in German trade openness since the early 2000s.

Table 2 – Impact of the EU's expansion in 2004 on external trade

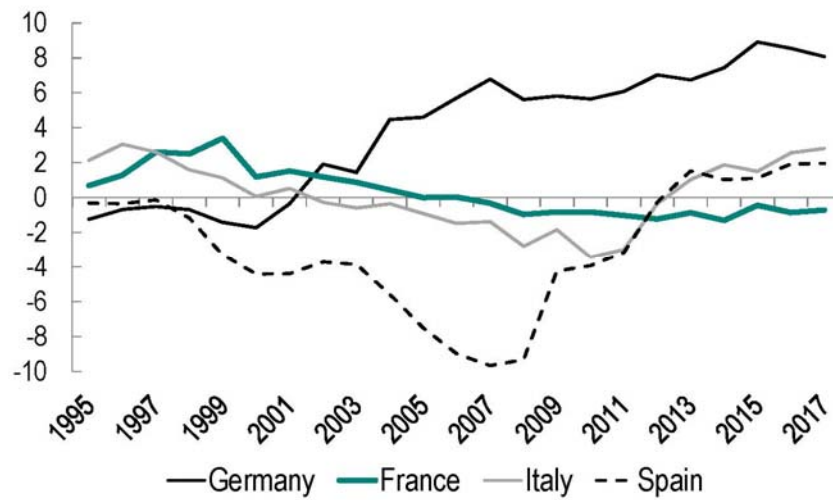
	Simulations						Trade (goods) with new Member States		
	Exports (%)			Imports (%)			(Export+Import)/GDP (%)		
	Total	Goods	Services	Total	Goods	Services	1999	2011	2016
Germany	7	8	3	9	10	3	4	9	10
Italy	5	6	2	5	7	2	2	4	4
France	2	3	1	3	3	2	1	2	2
Spain	2	2	1	2	2	1	1	2	3

Source: Mayer *et al.* (2018) for simulations. Authors' calculations based on CHELEM-CEPII for rates of openness.

* The results presented here are taken from a simulation of the effects of the 2004 enlargement on the world trade matrix. The results presented in Section 3.3 of Mayer *et al.* (2018) show that predicted variations of trade shares correlate largely with the variations observed between 2004 and 2014.

Graph 1 – Current accounts of large Eurozone countries

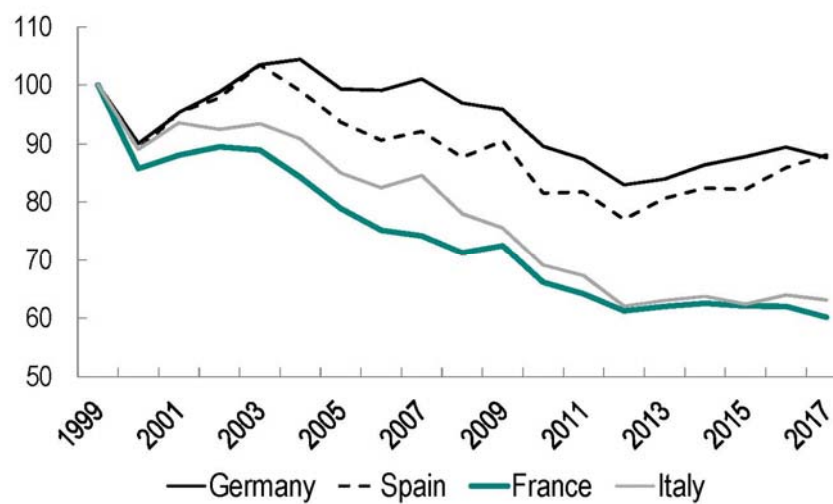
(% of GDP)



Source: WDI.

Graph 2 – Export market shares (goods and services)

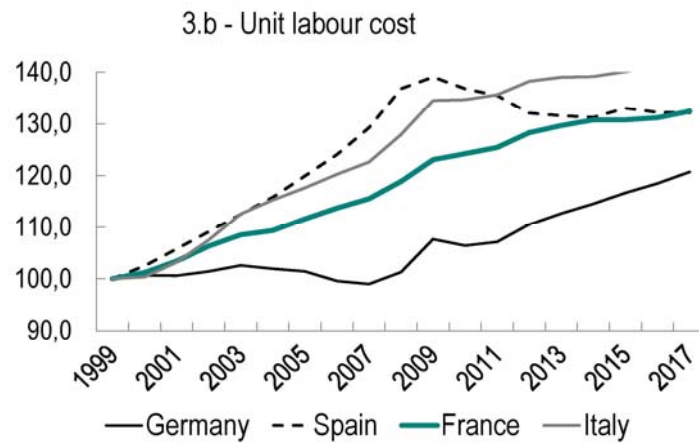
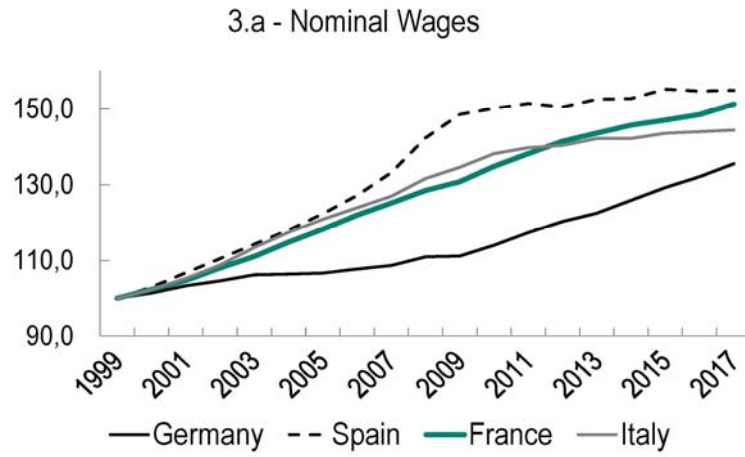
(index 1999 = 100)



Source: CHELEM database, CEPII.

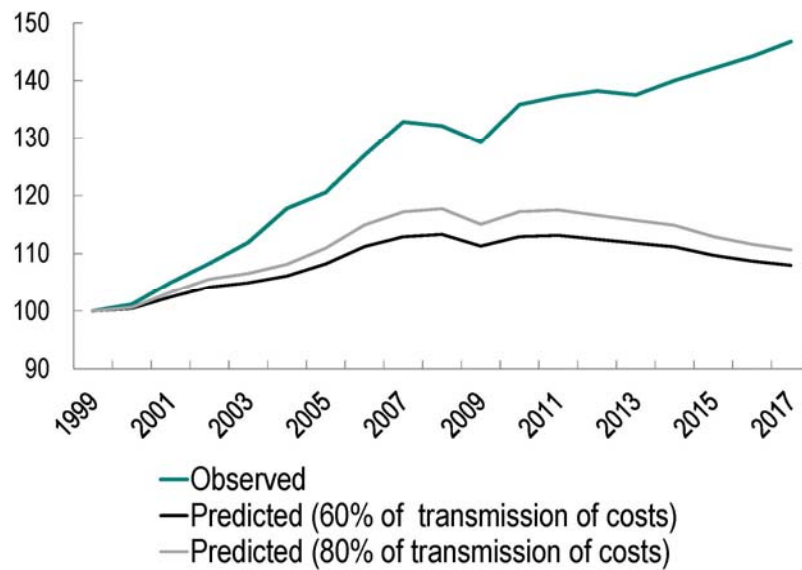
Graph 3 – Nominal wages and Unit Labour Costs

(total economy, index 1999 = 100)



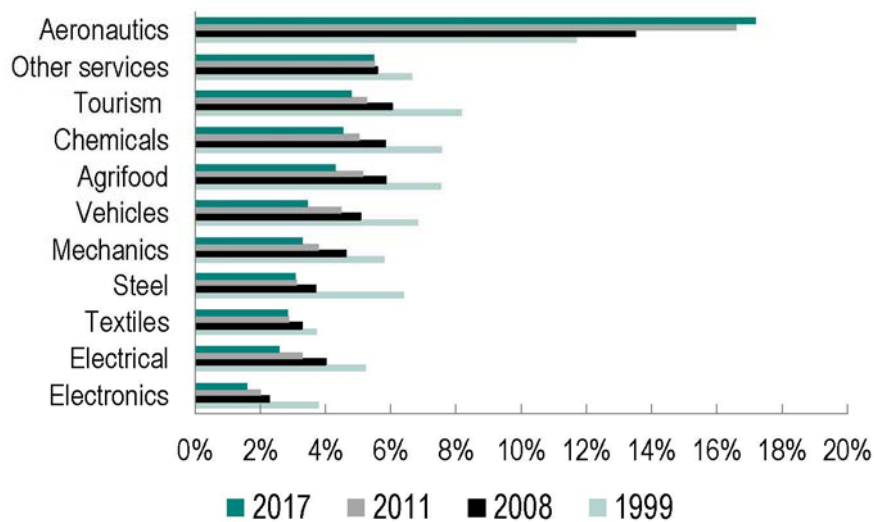
Source: AMECO.

Graph 4 – ULCs' contribution to divergences in Germany's and France's export performances
 (level of Germany's exports of goods and services relative to France's, index 1999 = 100)



Source: Authors' calculations based on the AMECO database.

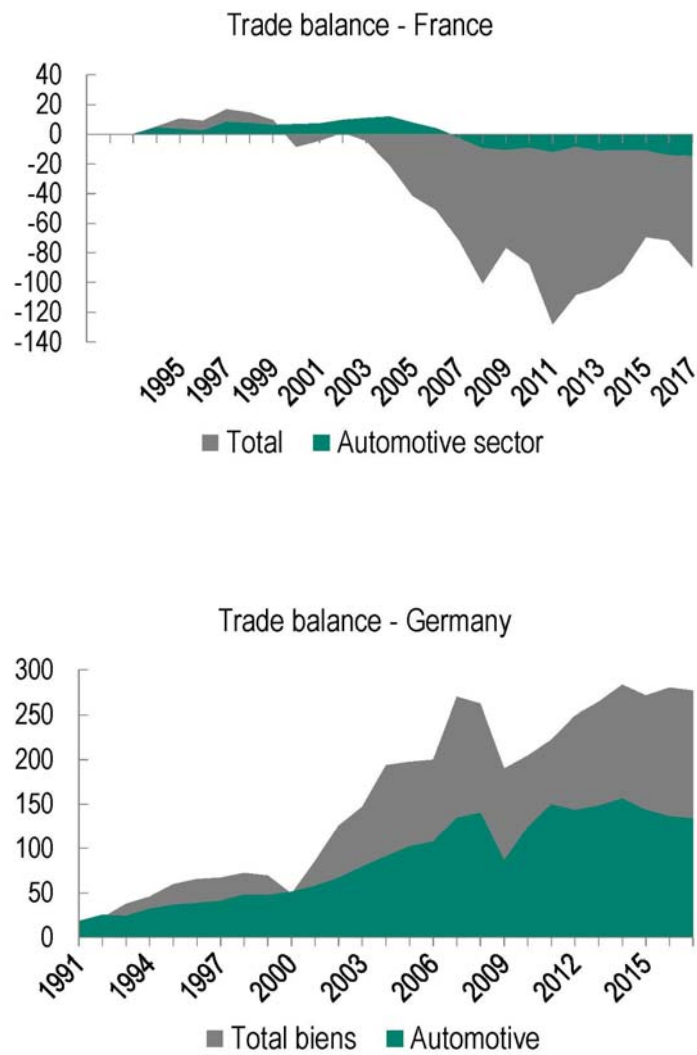
Graph 5 – French export market shares by sector



Note: The nomenclature used here corresponds to CHELEM database sectors, except for aeronautics, which is distinguished from other “mechanics” sector products given its weight and specificity.

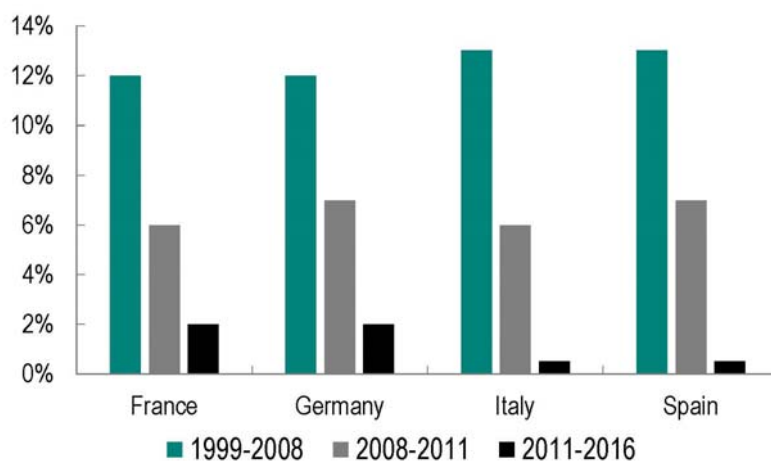
Source: CHELEM database, CEPII.

Graph 6 – The automotive sector’s contribution to the goods trade balance, France and Germany
(billions of euros)



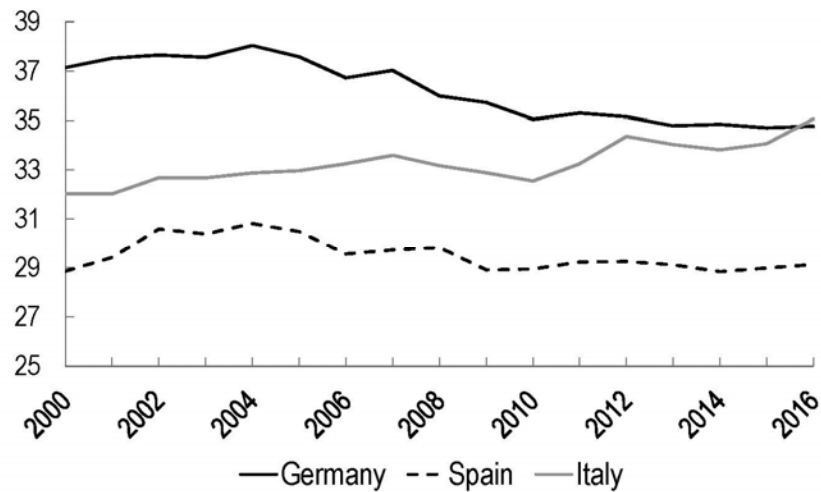
Source: Comext, Eurostat (chapter SH87 for the automotive industry).

Graph 7 – The growth of foreign demand for Eurozone exports



Source: Authors’ calculations based on BACI, CEPII.

Graph 8 – French export similarity index

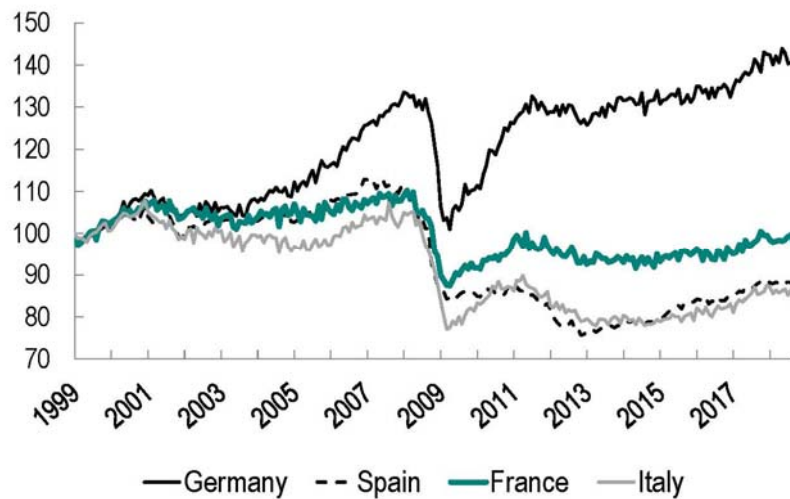


Note: The indicator for export similarity between countries a and b for year t is calculated as follows: $S(a,b)_t = \sum_{jk} \min(X_{ajkt}, X_{bjkt})$, where j is the country of destination, k the product (here in nomenclature harmonised to six positions, SH6), and X_{ajkt} the jk (country-product) the market share in the country's exports during year t .

Source: Authors' calculations based on BACI, CEPII.

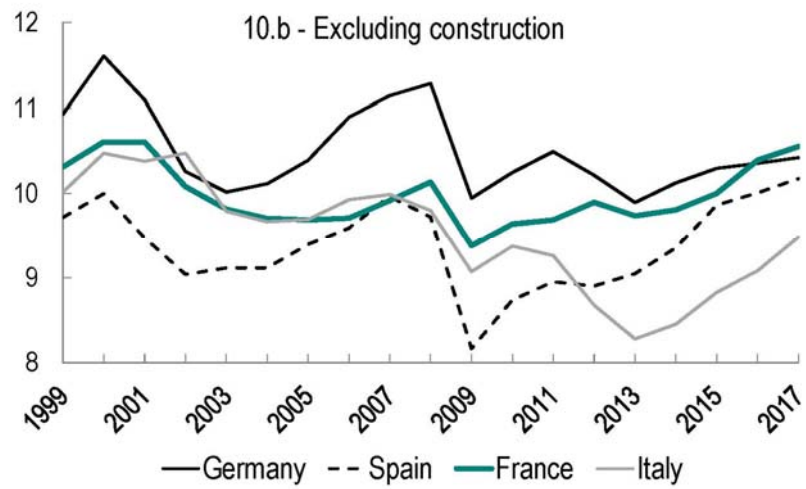
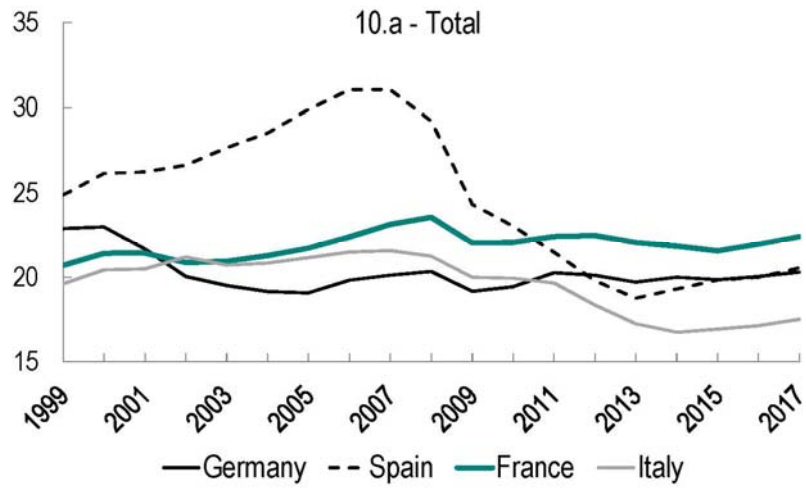
Graph 9 – Manufactured output in volume

(index, base 100 = 1999)



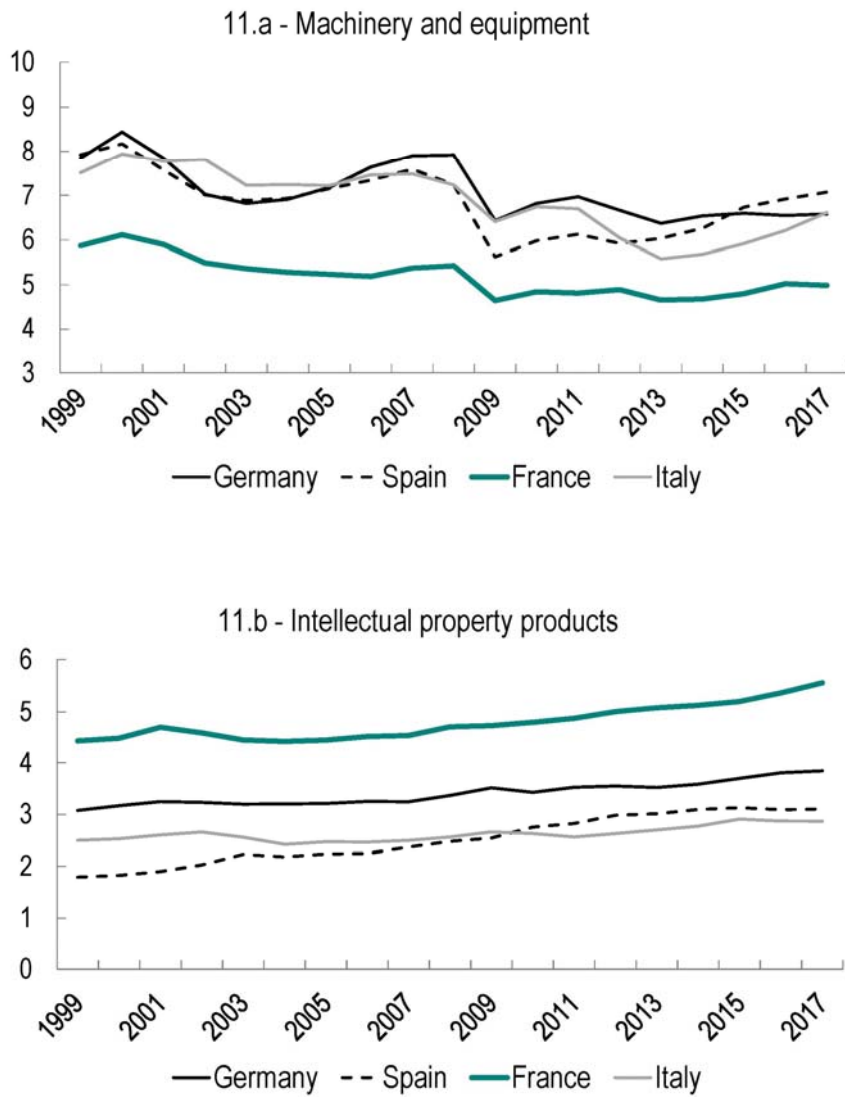
Source: Eurostat.

Graph 10 – Investment rate in the whole economy
(% of GDP)



Source: AMECO.

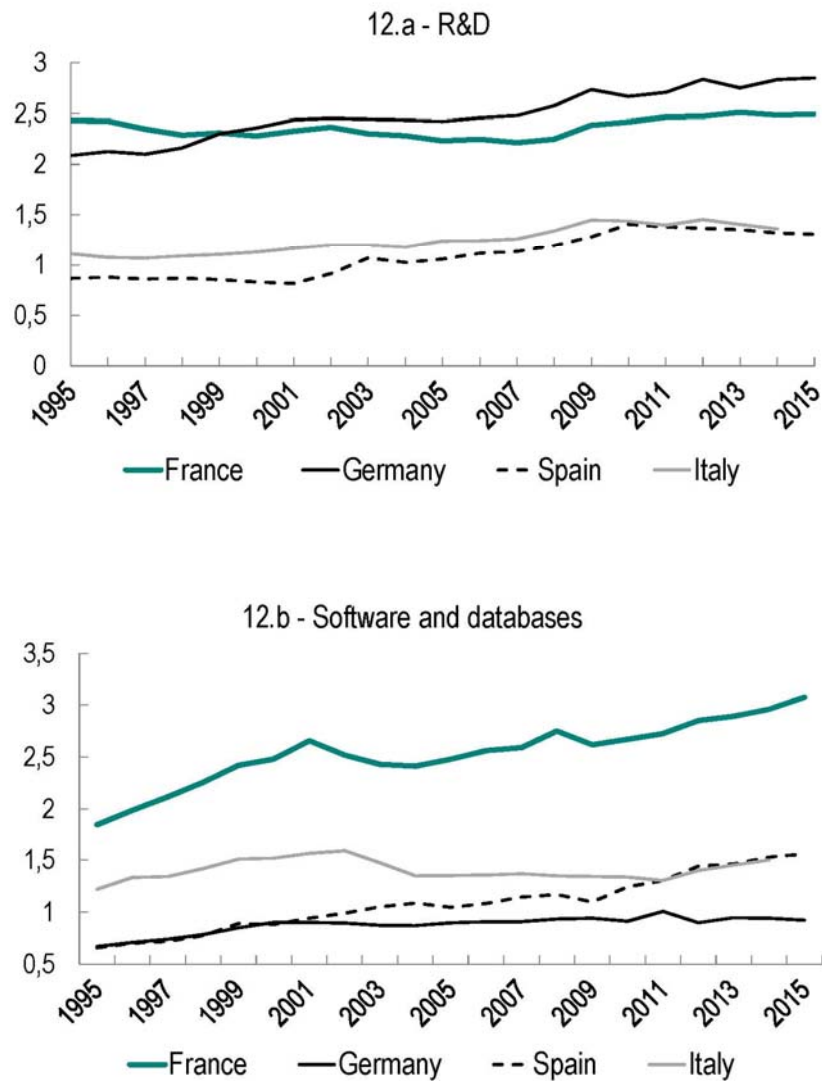
Graph 11 – Investment rate excluding construction, by type of expenditure
(whole economy, % of GDP)



Source: AMECO.

Graph 12 – Intangible investment rate by type of expenditure

(economy as a whole, % of GDP)



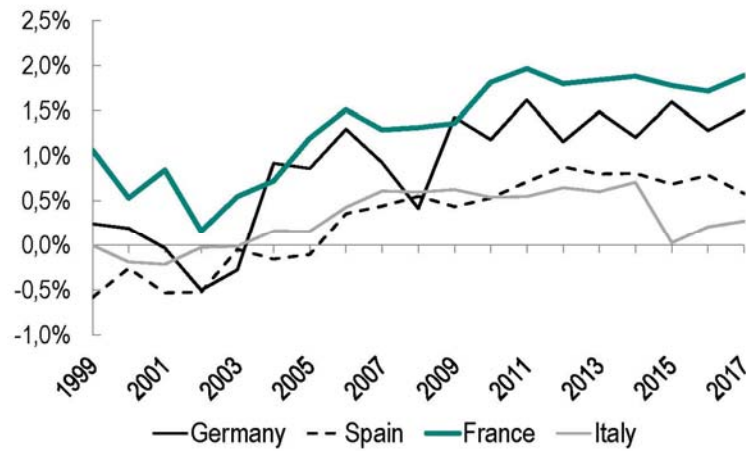
Source: EU-KLEMS.

Graph 13 – Multinationals' employment and turnover abroad, by country of origin



Source: OECD-AMNE database, Outward activity of multinationals.

Graph 14 – Balance of foreign direct investment income
(% of GDP)



Source: Eurostat.

Table 1 – Growth of ULCs by sector and share in the manufacturing sector's intermediate inputs

	Growth of ULCs (%) 1999-2015		Growth in France relative to Germany (pp)		Share in manuf. intermediate consumption (2014) (%)	
	France	Germany	1999-2015	2011-2015	Germany	France
Total economy	30	16	14	-7	-	-
Total manufacturing sector	-4	-2	-2	-9	-	-
Services (industry's intermediate consumptions)*	39	31	8	-6		
Construction	75	21	41	4	0.8	0.6
Electricity, gas and water supply	52	11	55	-5	2.5	2.8
Real-estate activities	31	-3	30	-3	2.5	0.7
Wholesale and retail trade; automobile and motorcycle repair	28	-2	19	-14	8.4	8.2
Transport and storage	26	7	-2	-8	4.2	3.1
Social and personal services	39	26	7	-4	1.0	1.7
Information and communication	-8	-14	-66	0	1.3	1.5
Accommodation and catering activities	68	70	34	-18	0.1	0.2
Professional, scientific, technical, administrative and support service activities	53	86	-33	-8	9.3	13.3
Financial and insurance activities	8	73	12	-8	1.4	1.7

* Average for service sectors weighted by their share in industry's intermediate consumptions.

Source: EU-KLEMS.

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