

Globalisation has forced French industry to play to its strengths

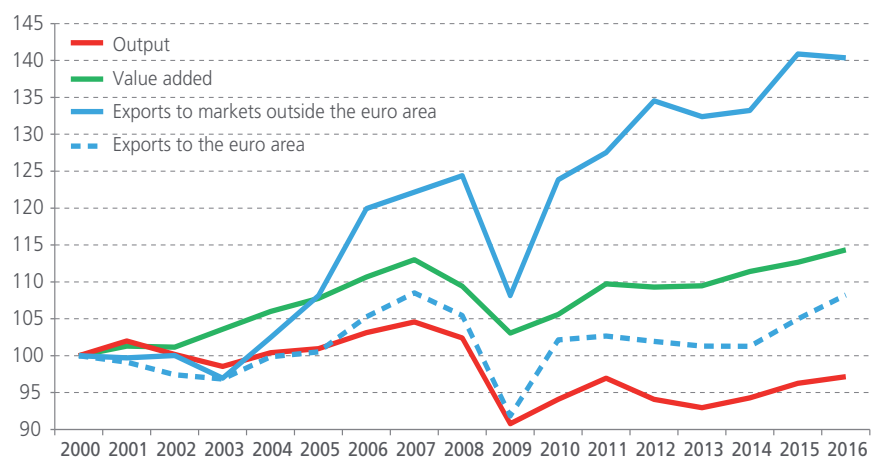
Since the year 2000, in spite of an increase in its value added, French manufacturing output has been shrinking. This can be partly explained by the transformation of industrial value-added chains. Under pressure from globalisation, output is focusing on its strengths and this has bolstered hi-tech sectors such as aeronautics and pharmaceuticals, and the luxury goods industry. Specialization has nevertheless caused many other manufacturing sectors to slump. Despite a marked rise in exports, especially outside the euro area, French industry has lost market shares and is now shackled with a structural trade deficit. The downtrend in manufacturing jobs is being partially offset by the outsourcing of almost a million jobs to the tertiary sector. The effects of this falloff vary depending on a region's exposure to competitive sectors, which adds to other regional disparities. As it appears to be waning, globalisation could be replaced by other industry transformation scenarios.

A number of complementary factors have had an impact on French manufacturing output since the start of the millennium. The trend for household consumption patterns has shifted in favour of the service sector¹. Since the 1990s, the manufacturing industry has had to adjust to steeper international competition and the emergence of global value chains. The latter have caused businesses to break up manufacturing processes to profit from the comparative advantages of each country as regards the availability of technologies, skilled labour forces and production factor prices. These changes have resulted in industry focusing on its strengths as borne out by the highly varied output levels of manufacturing sectors since the turn of the century.

¹ Demmou L., "Le recul de l'emploi industriel en France entre 1980 et 2007. Ampleur et principaux déterminants : un état des lieux", Insee, Économie et Statistique, no. 438-440, 2011.

Chart 1: Output, value added and exports of the manufacturing industry in France

Indexes in 2000 = 100 in volume



Source: Insee (annual national accounts for output and value added).

The varying nature of changes to output and value added partly reflects the transformation of industrial value-added chains

Between 2000 and 2016, under the double blow of the economic and financial crisis followed by the euro area crisis (*chart 1*), French manufacturing output fell by 3%. Output also plummeted in Italy (-8% up to 2014) but rose sharply in Germany (+25% up to 2015).

During the same period, French manufacturing output downtrended compared to the value added of the manufacturing sector which jumped 14% in volume. Independent of changes in the sectoral structure of the manufacturing industry, this increase in the value added rate (ratio of value added to output) from 25.4% in 2000 to 29.9% in 2016 (*table 1*) was fostered by the relocation of low value added activities, such as assembly work, and by heightened vertical integration of businesses in industrial value-added chains. Increased manufacturing value added did not prevent a fall in the contribution of the manufacturing industry to GDP from 14% to 10% during the 2000s, followed by a levelling off period.

French industry's flagship sectors such as aeronautics, pharmaceuticals and luxury goods have benefitted from globalisation...

Globalisation has spurred French industry to specialise in hi-tech sectors which have largely benefitted from the opening up and expansion of foreign markets. Driven by aeronautical and spatial construction, output rose substantially for transport equipment other than automobiles (up 87% between 2000 and 2015 – table 2). The French aeronautics industry thrived between 2004 and 2013 and its growth was characterised by the doubling of its global export market share. Output also mushroomed in the pharmaceutical industry (+72% up to 2016) on the back of the rapid rise in internal and external demand in the 2000s. Output in both these sectors grew faster than in Italy and Germany. The latter's industry also specialises in hi-tech sectors, including the manufacturing of IT, electronic and optical products, a sector which has stalled in France.

The luxury goods sector covers a multitude of products and is also central to French industry. Brisk manufacturing activity for soap, perfume and cosmetics has offset the drop in output in the chemical industry (down 3% between 2000 and 2016). Output also fell off by 8% in Italy up to 2014, but surged by 12% in Germany up to 2015. Similarly, the moderate 5% increase in output in the agri-food industries between 2000 and 2016 was boosted by the growth of the wine and other beverages sector.

...but globalisation has led to a slump in many other manufacturing sectors

In addition, globalisation has caused a downturn in many low and medium-low tech industries, which are subject to stiff competition from emerging and developing economies. For instance, output dropped off substantially in the textiles, clothing, leather and footwear sector (down 51% between 2000 and 2016) and in the coke-refinery sector (-34%), which is suffering from competition from the US and Middle East, and from excess production capacities. These sectors are also undermining German industry (down 28% and 8% respectively between 2000 and 2014). In France, output has also fallen steadily in the wood, paper and printing sector (-13% between 2000 and 2016) and in the metalworking and metallic product manufacturing sector (-10%), which has been affected by the emergence of overcapacity in China.

Once a spearhead of the French manufacturing industry, the automobile sector experienced a severe slump as from 2005 (down 28% between 2000 and 2015). This was due to steeper competition on French and European markets and the introduction of production relocation policies. Being less high-end oriented than in Germany², where output grew by 57% between 2000 and 2015, the French automotive industry has nevertheless staged a remarkable recovery since 2013. Consistent with increased investment, and mirroring Germany and Italy, output in the machinery and equipment sector rose very rapidly up to 2008 before nosediving during the crisis and then levelling off (-2% between 2000 and 2016). Lastly, output is in structural decline in the electrical equipment manufacturing sector (-20%) whereas it has stalled in Italy and increased in Germany.

Ultimately, although the trend for the French manufacturing industry to play to its strengths is pronounced, it should be seen in relative terms due to the still-telling contribution of low and medium-low tech industries, in particular when compared to Germany. Examples of these sectors are the agri-food industries (19.8% of French manufacturing value added in 2016), the repairs, installation and sundry manufactured goods sector (13.8%) and the metalworking and metallic product manufacturing sector (11.3%).

French industry's global export market share has plunged

Despite falling output, since 2000, globalisation has caused a 24% increase in volume of exports of French manufactured goods. This growth can be put down to exports outside the euro area (+41%) rather than to exports to the euro area (+8%).

That said, the French manufacturing industry has scarcely benefitted from the globalisation of trade. From 5.3% in 2000, its share of the global export market began to fall as from 2003 and stood at 3.4% in 2015. The decline has been seen both on euro area markets and on those outside the euro area. The recasting of global trade has been felt in many other European countries, such as Italy and the UK where export market shares have also fallen off since 2000. However, Germany's market share has stabilised at around 10% as exports have increased at a much faster pace than in France whereas, in the 1990s, the rates were comparable.

² Bas M., Fontagné L., Martin P., Mayer T., "La France en mal de qualité ?", La Lettre du CEPII, no.355, 2015.

Table 1: Value added and hourly productivity rates in the French manufacturing industry

		Value added rate (value added / output)		Hourly productivity (value added / hours worked)	
		2000	2016	2000	2015
Manufacturing industry		25.4	29.9	36.8	56.0
High technology sectors	Transport equipment other than automobiles (aeronautics, railways, etc.)	29.1	20.4*	57.4	70.6
	Pharmaceutical industry	44.0	43.6	111.4	191.8
	IT, electronic and optical products	22.4	52.8	27.9	112.0
Medium-high technology sectors	Machinery and equipment	30.8	34.0	32.3	48.2
	Chemical industry	22.8	29.5	64.3	105.7
	Electrical equipment	36.0	27.8	47.0	43.2
	Automotive industry	18.1	15.4*	57.4	70.6
Medium-low technology sectors	Repairs, installation and sundry manufactured goods	42.4	41.1	35.7	47.9
	Rubber, plastic and other non-metallic mineral products	31.8	35.8	31.0	47.1
	Metalworking and metallic products	28.3	32.7	32.7	44.5
	Coke-refinery	4.7	5.2	182.5	240.3
Low technology sectors	Agri-food Industries	26.7	28.3	41.5	47.2
	Wood, paper and printing	26.1	34.8	25.0	45.6
	Textiles, clothing, leather and footwear	24.2	32.4	19.2	32.8

* 2015 data.

Source: Insee, annual national accounts

Table 2: Changes in manufacturing sector output since 2000

		Change in volume (%)		
		France (2000-2016)	Germany (2000-2015)	Italy (2000-2014)
Manufacturing industry		-3	+25	-8
High technology sectors	Transport equipment other than automobiles (aeronautics, railways, etc.)	+87*	+75	+2
	Pharmaceutical industry	+72	+57	+60
	IT, electronic and optical products	-1	+85	-11
Medium-high technology sectors	Machinery and equipment	-2	+30	+8
	Chemical industry	-3	+12	-8
	Electrical equipment	-20	+6	-1
	Automotive industry	-28*	+57	-8
Medium-low technology sectors	Repairs, installation and sundry manufactured goods	+7	+18	-18
	Rubber, plastic and other non-metallic mineral products	-3	+15	-22
	Metalworking and metallic products	-10	+16	+0
	Coke-refinery	-34	-3	-19
Low technology sectors	Agri-food Industries	+5	+9	-1
	Wood, paper and printing	-13	+1	-24
	Textiles, clothing, leather and footwear	-51	-32	-26

* Period: 2000-2015.

How to read this table: the output of the sectors in green (dark) has increased (significantly). That of the sectors in orange (dark) has fallen (significantly).

Sources: Insee (France), Destatis (Germany) and Istat (Italy), annual national accounts.

The globalisation of trade has gone hand in hand with a massive deterioration of the French balance of manufactured goods from +€13bn in 2002 to -€45bn in 2016. The balance is now in structural deficit unlike the German (+€319bn) and Italian (+€89bn) balances. A majority of goods, especially those for which output and exports have plummeted (automobiles, communication equipment, computers and consumer electronics), have contributed to the worsening of the balance of manufactured goods. The French manufacturing industry has a very high deficit with China (-€30bn in 2016) and the remainder of the EU (-€26bn, -€14bn of which is with Germany). Conversely, its balance with the US is only slightly in deficit (-€3bn) and there is a healthy surplus with the UK (+€12bn), Africa (+€12bn) and Middle Eastern countries (+€10bn).

French exports are also focusing on their strengths

Globalisation has also caused French exports to specialise in the majority of their strengths in the high-tech and high-end sectors (aeronautics, beverages, perfume and cosmetics, leather goods-bags and luggage, etc.). This phenomenon can be observed through changes to the revealed comparative advantage indexes (table 3). For each good, these indexes present the ratio of its share of French exports to its share of global exports and therefore measure the specialisation of French exports in each good compared to the world average. For the majority of goods in which France already specialised at the start of the 2000s, their revealed comparative advantage index has subsequently increased. The balances for these goods have a structural surplus and have even improved since 2000. Furthermore, aeronautical construction, leather goods-bags and luggage, the manufacturing of jewellery, footwear and items in fur are the only sectors in which the global export market share has risen since 2000.

Table 3: France's highest comparative advantage indexes in 2015

	2000	2015
Aeronautical and spatial construction	3.1	5.3
Beverages	4.8	5.2
Perfume and cosmetics	4.6	4.5
Leather goods-bags and luggage	1.4	2.8
Sundry chemical products	1.7	2.2
Starch, glue or enzyme-based chemical products	1.7	2.2
Cereal-based foods	1.7	2.1
Pharmaceutical preparations	2.2	2.0

How to read this table: for each product, the index presents the ratio of its share of French exports to its share of global exports.

Source: The United Nations Commodity Trade Statistics Database.

The structural decline of manufacturing jobs is being partially offset by the outsourcing of almost a million jobs to the tertiary sector

Starting in 1974, the fall in direct payroll employment (excluding temping) in the French manufacturing industry gathered pace in the 2000s before slowing prior to the crisis. Having dropped 26% since 2000, jobs are being lost at a faster pace than manufacturing output under the impetus of higher labour productivity gains than in the remainder of the economy. These gains were an average of 2.9% per year between 2000 and 2015 (as against 0.9% for the economy as a whole) and concern the majority of manufacturing sectors. They cannot be put down to changes in the sectoral structure of the French manufacturing industry. Direct payroll employment in manufacturing has also shrunk throughout the EU (down 16% since 2000) but to a lesser extent in Germany (-4%).

This structural decline is being partially offset by the creation of a large number of outsourced jobs in the service sector (engineering, R&D, logistics, etc.). These jobs concern work that was previously carried out "in-house" by industry. Today, almost a million jobs in the tertiary sector originate from industrial activity, representing a 73% rise since 19783.

Nevertheless, direct payroll employment is holding its own in a number of robust manufacturing sectors such as transport equipment other than automobiles (+12%), pharmaceuticals (-1%) and agri-food (-5%). Since 2013, the drop in direct employment has also been somewhat offset by an increased use of temping which now accounts for 9% of all jobs. The increase in temporary employment, which is especially pronounced in the automotive industry, bears witness to the uncertainty surrounding the development of requirements for industrial professions or skills, and the permanence of the recovery in certain sectors.

In the regions, intrinsic disparities are heightening the impact of sectoral specialisation on manufacturing jobs

Manufacturing jobs are being lost at varying rates throughout France⁴. First, these variations are the result of local differences in sectoral structure as the regions may be more oriented

³ DGE calculations, based on methodology inspired by Daudin G., Levasseur S., "Délocalisations et concurrence des pays émergents : mesurer l'effet sur l'emploi en France", Revue de l'OFCE, no. 94, 2005.

⁴ This decline is happening almost everywhere in France but with major disparities. Between 2008 and 2016, changes to manufacturing jobs ranged from -29% to +15%, depending on the département.

towards growth sectors (aeronautics, pharmaceuticals, chemical products) or, conversely, deeply affected by globalisation (textiles, wood, metalworking, etc.).

However, manufacturing jobs in a region do not fluctuate merely on the basis of its sectoral makeup but also due to intrinsic features. As a result, in many French départements, there are wide gaps between actual changes to jobs and the expected changes given their sectoral structure, and national changes to jobs in each sector (*map*). These gaps compound the dispersion of changes to jobs related to different sectoral structures between regions. The best outcomes, excluding the impact of sectoral structure, are in départements which already reap benefits from their sectoral specialisation.

As its appears to be waning, globalisation could be replaced by other industry transformation scenarios

Since 2011, global exports of goods have been increasing by an annual average of 2.8% (*chart 2*). This figure is well below the 7.4% per year observed between 1995 and 2007. The rate is now slightly lower than that for global GDP (+3.4% per year), which has dropped off moderately compared to its pre-crisis level (+4.0% per year). The slowdown in world trade could be the result of structural change and sluggish expansion of global value chains. This sluggishness could be due to the fact that businesses have now made all their major gains combined with increasing awareness of the risks of a link in the production chain malfunctioning (earthquake in Japan and floods in Thailand in 2011). The Chinese labour cost hike⁵, which is reducing this country's appeal in terms of relocating low-skilled assembly work and repetitive tasks, and the refocusing of the Chinese model on internal demand and providing services, could also provoke a sustained downturn in global trade⁶.

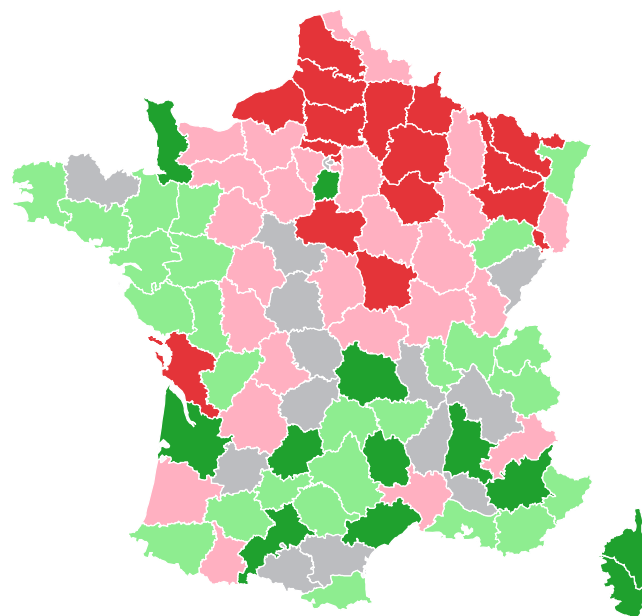
Furthermore, redistributing comparative advantages between countries could adjust the trend paths experienced by a number of sectors since the onset of globalisation. This applies particularly to French sectors that have been hitherto shielded by their technological intensity. These sectors could be confronted by Chinese industry moving upmarket after having for many years based its competitiveness on its low labour costs. Such redistribution could also be enhanced by other industry-changing scenarios, such as the digital transformation, which will bolster the impact of certain types of skills.

⁵ The Conference Board International Labor Comparisons Program, April 2016. Labour costs have been multiplied by five in a decade and are now only 14% below those of Bulgaria and 29% below those of Romania.

⁶ This decline is happening almost everywhere in France but with major disparities. Between 2008 and 2016, changes to manufacturing jobs ranged from -29% to +15%, depending on the département.

Alexandre AUBOURG, DGE

Change to manufacturing jobs by département, excluding the impact of sectoral specialisation*, between 2008 and 2016



In **grey**: départements in which changes to manufacturing jobs are essentially due to their sectoral structure.

In **green** (dark): départements that are over-performing (significantly).

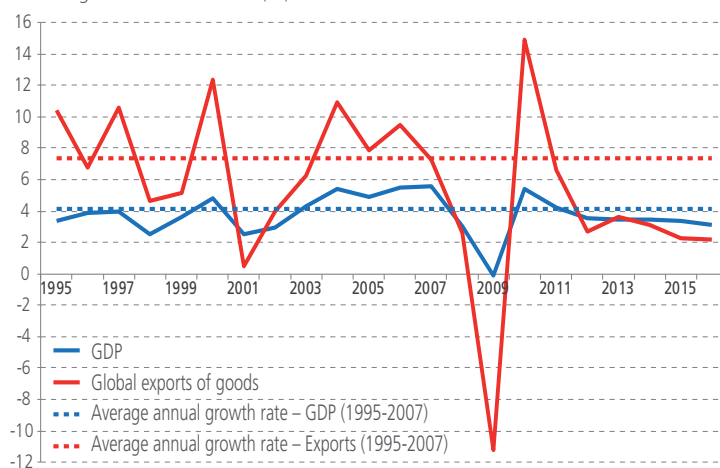
In **red** (dark): départements that are under-performing (significantly).

* Difference between the growth rate in jobs recorded between 2008 and 2016 and the growth rate simulated for each département on the basis of changes to jobs in each sector at national level, weighted by the sector's contribution to the département's salaried workers in 2008.

Source: Acoiss (Central Agency for Social Security Bodies), DGE calculations.

Chart 2: Growth rates of global GDP and global exports of goods

Annual growth rate in volume (%)



Source: International Monetary Fund (IMF).

Find out more:

See "L'industrie française a amélioré sa compétitivité-prix mais doit encore renforcer sa compétitivité hors prix", Le 4 Pages de la DGE, no. 77, October 2017.

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Publication Manager: Pascal Faure

Editor-in-Chief: François Magnien

Copy Editors: Martine Automme and Nicole Merle-Lamoot

Layout: Hélène Allias-Denis and Brigitte Baroin

ISSN: 2269-3092

Copyright registration: 2017

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DES ENTREPRISES