

Is the decline of industry due to the growth of services?

By [Sarah Guillou](#)

On [Friday, April 8 2016](#), the Observatoire Français des Conjonctures Economiques (OFCE) began a series of quarterly seminars on the analysis of France's productive network. The purpose is to bring together researchers and discussion of the situation, the diversity and the heterogeneity of the companies making up France's production system. This discussion is now being fed by the increasing use of business data. We hope in this way to enrich the analysis of the strong and weak points in the country's production fabric, with a view to guiding the development of public policies aimed at strengthening it. [\[1\]](#)

The first seminar took up the role of services in deindustrialization as measured by the decline of industrial employment as a share of total employment. Since 2000, the manufacturing industry in France has lost more than a quarter of its work force, i.e. more than 900,000 jobs. A recent note by the INSEE ([Insee Première, No 1592](#)) points out that manufacturing's weight in the economy has been halved from 1970 to today. Even though deindustrialization has aroused greater attention in France than elsewhere, probably because of the country's interventionist tradition and the challenges facing its labour market, it is taking place in all the developed economies. This raises questions about underlying structural trends common to all these countries.

However, the decline in industrial employment is being accompanied by net job creation in services. It also appears that the growth of services is being driven in part by changes

in industrial production methods. Products are incorporating an increasingly large component of services, and companies are expanding their portfolio of service products. The fragmentation of production processes – fuelled by the opportunities provided by globalization – is isolating low value-added manufacturing units from high value-added services units.

These changes in production methods need to be analysed to understand the extent of this phenomenon. It seems that the changes occurring within industry are just as much factors driving the decline of industry as the rise of services in employment. In other words, there is a question of how much deindustrialization finds a mirror image in the growth of services, or even its explanation.

Three contributions helped to provide some answers to the following questions: which manufacturers are producing services and with what impact on their performance? What is the role of services in the development of global value chains? Are flows of international services replacing flows of goods? Three main lessons emerge.

1 – “Servitization” and the decline in manufacturing jobs are clearly correlated

Manufactured products are incorporating an increasingly significant amount of services. This can be seen both by the growing share of companies that produce services ([Crozet and Millet, 2015](#)) and export them ([Castor et al., 2016](#)) and by the rising content of services in exports (Miroudot, 2016) [\[2\]](#).

The growth in companies’ value-added “services” may well push all their jobs into the service sector, including what are strictly speaking manufacturing jobs, if the added value of the services becomes dominant. Today an average of 40% of manufacturing employment corresponds to service activities. Furthermore, the fragmentation of production processes is

intensifying, as is the distribution around the world of outsourced activities based on the comparative advantages of different locations. If the company maintains an anchor in the home country, it usually keeps only the higher value-added jobs there, in line with the cost of the related work and qualifications, meaning jobs often characterized as services.

Note that these changes in production methods clearly reflect a decrease in manufacturing functions in a product's added value, which translates into a decline of manufacturing in the sources of the wealth of nations. But it is important not to underestimate the impact of the fragmentation of production units. Thus, jobs in services, formerly attributed to manufacturing, are being reclassified as service jobs even though the underlying production task has not changed, and this is happening regardless of outsourcing abroad.

However, this reclassification is all the more likely as "servitization" accelerates and becomes a must for companies to remain competitive.

2 – The servitization of manufacturing is a competitive factor

Servitization, which is associated with qualitative improvements in products and more generally the creation of value in manufacturing, is a factor in competitiveness.

As is shown by Crozet and Millet (2015), the production of services by manufacturing enterprises is a factor that enhances their performance. There are actually many French manufacturing companies that produce services, with 70% producing these for third parties (2007 data). The decision to produce services represents an important turning point, and clearly boosts performance. The authors' estimates thus show that taking this decision raises profitability, employment, total sales and sales of goods. Even though there are sectoral variations, the impact on performance is positive, whatever the industrial sector in question.

At the aggregate level, the share of imported services in the export of goods is also growing. In France's exports, the share of services ranges from 30% to 50%, depending on the sector. The fragmentation of production processes is leading to outsourcing certain service functions and to the provision of imported services. This dynamic goes hand in hand with the integration of economies in international trade, with the benefit of globalization opportunities and ultimately with the competitiveness of economies (see [De Backer and Miroudot, 2013](#)).

3 – The direct and indirect export of services will continue to make a positive contribution to the trade balance

The developments described above directly affect the trade in services. It is indeed increasingly services that are the subject of trade in intermediate products, with the latter being estimated at nearly 80% of world trade. Digitalization, along with differentiation through services, is leading to the fragmentation of production with the inclusion of more and more services.

Trade in services in France has not experienced a decline since the crisis of 2007. Even though the trade balance in services has shrunk slightly since 2012, it has remained positive since the start of the 21st century, and the export of services has been rising faster than for goods. As the world's third largest exporter of services – especially because of tourism – France will see service exports increase as a share of its trade balance. Admittedly, for the moment, the volume of exported services has not offset the negative balance for goods, but the development of intra-firm trade in services and of intermediary services will eventually reverse their respective shares.

Trade in services is even more concentrated than trade in goods. It is mainly carried out by French or foreign multinational corporations, which account for more than 90% of

this trade. While just over half of trade takes place with the European Union (EU), this component is running a deficit, while non-EU trade is running a surplus. It is interesting to note that the balance is positive for companies that are part of a French group, but negative for companies belonging to a foreign group (Castor *et al.*, 2016).

In conclusion

It seems that the dichotomy between industry and services is becoming increasingly inappropriate to describe the dynamics of employment and the productive specialization of economies. An approach in terms of productive functions that breaks down the job properly based on whether it involves manufacturing activities strictly speaking or other activities, such as transportation and logistics, administrative support or R&D services, would allow a better understanding of a country's skills and comparative advantages.

More generally, the growth of services and their increasing role in production and exports is giving them an increasingly central role in economic growth. Getting better statistics on the production and export of services and improving the methods of assessing productivity in services are prerequisites for a better understanding of the role of services in growth and of the levers to be activated to achieve this.

[\[1\]](#) A scientific committee responsible for the organization of the OFCE seminar on the Analysis of the Production System is composed of V. Aussilloux (France Stratégie), C. Cahn (Banque de France), V. Charlet (La Fabrique de l'Industrie), M. Crozet (Univ. Paris I, CEPII), S. Guillou (OFCE), E. Kremp (INSEE), F. Magnien (DGE), F. Mayneris (Univ. Louvain), L. Nesta (OFCE), X. Ragot (OFCE), R. Sampognaro (OFCE), and V. Touzé (OFCE).

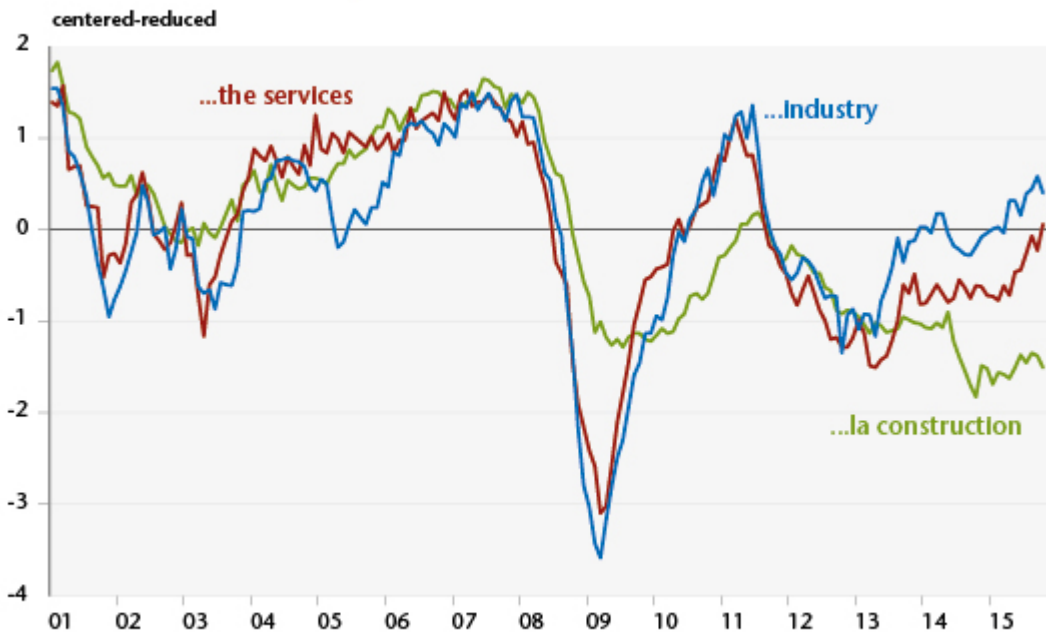
[\[2\]](#) Miroudot, S. (forthcoming), “Global Value Chains and Trade in Value-Added: An Initial Assessment of the Impact on Jobs and Productivity”, *OECD Trade Policy Papers*, no. 190, OECD Publishing.

The French economy on the road to recovery

by Hervé Péléraux

The publication of the INSEE’s business surveys on October 22 confirms the French economy’s positive situation in the second half of 2015, suggesting that the negative performance in the second quarter of 2015 (0%) will turn out to have been merely “an air pocket” after the strong growth seen in the first quarter (+0.7%). The business climate in industry has exceeded its long-term average for the seventh month in a row, and the service sector has been recovering rapidly since May 2015 and has climbed back to its average, the highest level in four years (Figure 1). The business climate in the construction sector nevertheless is still suffering from the crisis that hit it, but its downward trend halted at the end of 2014; despite monthly hiccups, the sector has begun a slow recovery that could signal the end of its woes in the coming quarters.

Figure 1. Business climate in ...



Source : INSEE.

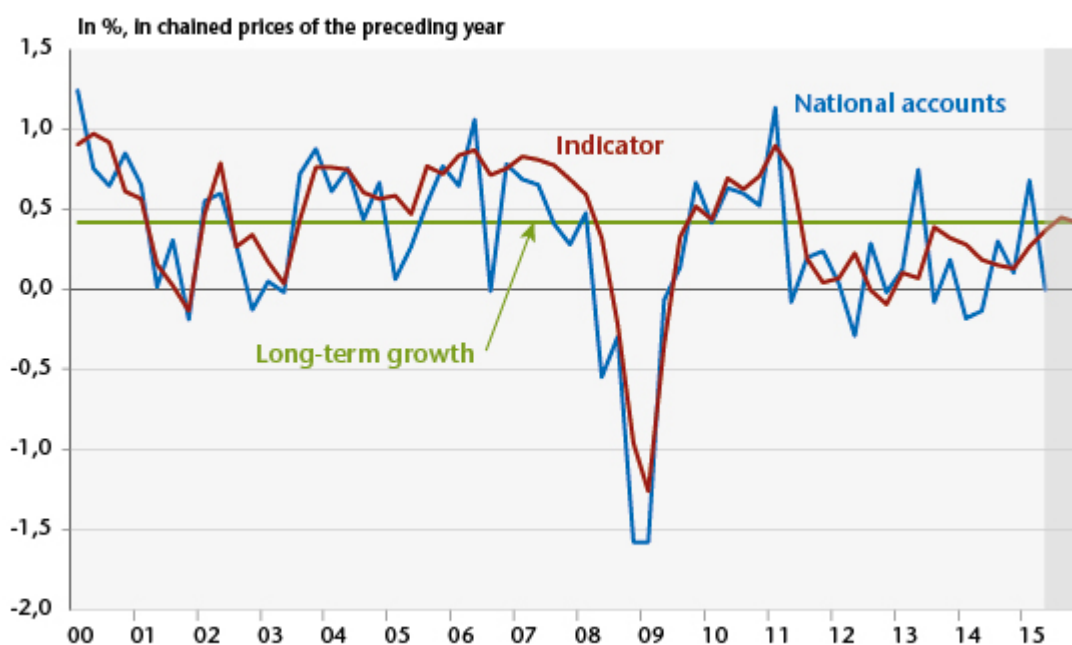
The confidence indicators, which provide qualitative information summarizing the balance of opinion on the various questions posed about business activity, consumer confidence and the situation in commerce, can be converted into quantitative information by means of an econometric equation linking these to the quarterly GDP growth rate^[1]. Doing this makes it possible to use these purely qualitative data to estimate the GDP growth rate in the past and near future (two quarters), given that the publication of the surveys precede that for GDP. Among the sectoral indicators available, only the business climate in industry, services and construction provide econometrically useful information to trace the trajectory of the GDP growth rate. The other series are not significant, in particular the indexes for consumer confidence and for confidence in the retail and wholesale trade.

The leading index, which has a significantly more smoothed profile than GDP growth rates, cannot fully capture the volatility of activity and therefore should not strictly speaking be considered a predictor of growth (Figure 2). On the other hand, from a more qualitative viewpoint, it manages to delineate quite correctly the phases during which growth is

above or below average (or the long-term) determined by the estimate. From this perspective, the indicator can be seen as marking a turning point in the economic cycle. Since the second quarter 2011, the indicator has not depicted any crossing of the long-term growth rate, despite the false signs of recovery raised by the quarterly GDP figures for Q2 2013 and Q1 2015.

Based on the survey data available up to October, the growth foreseen by the indicator is 0.4% in the third and fourth quarter of 2015, exactly equal to long-term growth^[2]. While a signal of recovery is not yet clearly given by the indicator, it should be noted that the information on the fourth quarter, which is limited to the October surveys, is quite partial. The confidence climates, which are extrapolated to the end of the year, are based on conservative assumptions and are likely to be upgraded if the surveys continue to improve from now to December.

Figure 2. GDP growth rate observed and estimated by the indicator

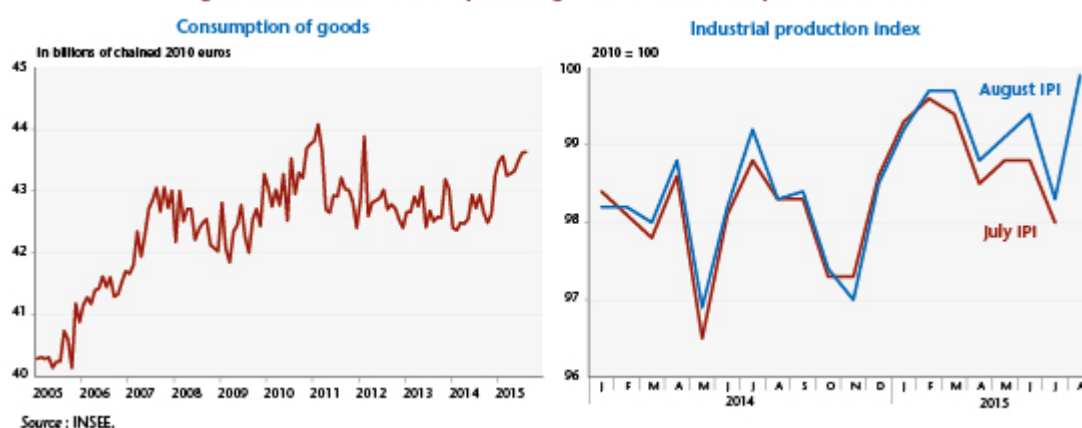


Source : INSEE, OFCE calculations and forecasts.

The quantitative information available at this time for the third quarter of 2015 also gives cause for optimism, after the disappointment of the second quarter. Under the impact of the

disinflation brought on by lower energy prices, which enabled a sharp rebound in purchasing power, household consumption of goods recovered sharply at the beginning of the year (Figure 3). The rise was interrupted in the second quarter, due to poor sales in March, which pulled down the figures, but consumption has resumed its upward trajectory continually since then. The carry-over in August for the third quarter was clearly positive (+0.6%), which suggests that the consumption of goods will again contribute positively to GDP growth for the quarter.

Figure 3. Household consumption of goods and Industrial production Index



The projection of a return to growth in the third quarter is also confirmed by trends in the industrial production index (IPI), which rose sharply in August (+1.6% for the total IPI, and +2.2% for the manufacturing index itself). This rebound followed a drop in production after the peak in February-March 2015 [3], which contributed to the poor performance of GDP in the second quarter (Figure 3), and nourished the idea that the second quarter was not an “air pocket” but the continuation of a long phase of stagnation for a France that was unable to take advantage of the favourable winds blowing from outside [4]. The carry-over in industrial production in August now stands at 0.3%, while it was -0.7% in the old series available in July.

The recent trends in the monthly indicators augur a renewal of growth in the third quarter of 2015. The extrapolation of GDP

growth using the leading indicator, supplemented by the already available quantitative data, also points to a 0.4% increase in activity in the third quarter, which, if it is realized, would then put the economy on a firm track to finally initiate a recovery.

[1] For greater detail, see: « [France : retour sur désinvestissement, Perspectives 2015-2017 pour l'économie française](#) » [The 2015-2017 forecast for the French economy], pp. 34-37.

[2] The long-term growth considered here is not the potential growth estimated by its structural determinants using a production function, but the average GDP growth rate as reflected in the estimate of the indicator.

[3] It should be noted that the statistical revisions can change the perception of the economy's dynamics in the very short term. The IPI series published on 9 October 2015 by the INSEE has revised the level of the index significantly upwards compared to the previous publication. The IPI is still on a downward trend between February and July 2015, but the trajectory described is less negative, and the quarterly average of the index in the second quarter of 2015 is affected: according to the old series, it stood at -0.7%, compared with -0.4% according to the revised series.

[4] See Heyer E. and R. Sampognaro, 2015, « [L'impact des chocs économiques sur la croissance des pays développés depuis 2011](#) », [The impact of economic shocks on the growth of the developed countries since 2011], *Revue de l'OFCE*, no. 138, June 2015.

How to read the Alstom case

By [Jean-Luc Gaffard](#)

The situation of Alstom has hit the headlines since the company executives announced their intention to sell the energy branch to General Electric and to carry out a restructuring that strongly resembles a unit sale. The government reacted strongly to what it saw as a *fait accompli*, seeking another buyer, namely Siemens, with a view to creating one or more European companies in a sector considered strategic, along the lines of Airbus – before it came round to the General Electric solution, which in the meantime had improved in terms of both the amount paid for the buy-out and the arrangements for the future industrial organization. These events, important as they are, should not obscure the more general fact of ongoing deindustrialization, which is taking the form, among others, of the break-up of certain large companies, and which is resulting from inconsistencies in the governance of what French capitalism has become today.

Deindustrialization is generally attributed either to competition from countries with low wages, and thus to excessive labour costs, or to insufficient innovative investment, and thus to a lack of non-price competitiveness. The solutions sought in terms of public policy oscillate between reducing wage costs and supporting R&D, usually with little regard to the conditions of corporate governance. The emphasis is on the functioning of both the labour markets, with the aim of making them more flexible, and the financial markets, which are considered or hoped to be efficient, without really taking into account the true nature of the company. But a firm is part of a complex network of relationships between various stakeholders, including

managers, employees, bankers, customers and suppliers. These relationships are not reducible to market relations encumbered with imperfections that generate poor incentives and that need to be corrected so as to ensure greater flexibility. They are part of more or less long-term contractual commitments between the various stakeholders in a company, which are exceptions to the state of pure competition, even though they are essential to the realization of the long-term investments that bring innovation and growth. The duration of these commitments is in fact the foundation for the average performance of the companies, the structuring of the industry and ultimately the industrialization of the economy.

Alstom's troubles, following on the heels of the difficulties encountered by other firms like Pechiney and Rhône Poulenc that are no longer on the scene, reflect this organizational reality. With sales barely equal to one quarter of the figure for Siemens and one-fifth for General Electric, the size of the company and its various activities has been judged by its leaders to be largely insufficient to meet the demands of competition. With the agreement of the European Commission, the State already had to intervene back in 2004 to recapitalize the company so as to avoid bankruptcy. It then faced the obligation to hive off certain activities and cut jobs drastically. Today, the only way ahead is to carry out a new restructuring, with the hope of saving skills and jobs by integrating them into a larger, more efficient entity while absorbing the accumulated debts. This cannot take the appearance of a final break-up that benefits one or another of the competitors who managed to develop the right strategies, far from the recommendations of those who fawned over what was once called the new economy. In this case, the beneficiary will be General Electric. This ultimate solution is taking place due to Alstom's inability to benefit in the recent or earlier period from the longer-term financial commitments that would have allowed it to implement an effective growth strategy.

This disappointment, on the heels of numerous others, reveals the inconsistency that has befallen French capitalism between the organization of its industry and of its financial system, which was criticized back in 2012 in a book by Jean-Louis Beffa (*La France doit choisir*, Paris: Le Seuil). The new financial model, inspired by the Anglo-Saxon model, no longer seems to respond to the needs of mature enterprises engaged in activities with investment needs that are substantial and long term and which are subject both to performance cycles related to fluctuations in demand and to the constraints of the innovation process. The ensuing lack of commitment was bound to lead to break-ups, but it would be wrong to equate this to an increased modularity of industrial production resulting from the introduction of new information and communication technologies and which would be valued by the financial markets, as the head of Alstom seemed to think in the late 1990s when advocating a company without factories.

Under these conditions, a recovery in production cannot take place through the invariably one-off specific interventions of the public authorities aimed more or less explicitly at creating national or European champions that are, after all, not very credible. What is needed are structural reforms to deal, not with the rules on market functioning, but with modes of governance, and in particular a revision of the way the financial system is organized.

These observations are developed in greater depth in ["Restructurations et désindustrialisation : une histoire française", Note de l'OFCE, no. 43 of 30 June 2014.](#)

Europe's control of public aid: good or bad for industry?

By [Sarah Guillou](#)

Following a meeting of the Ministers of Industry in Brussels on 20 February 2014, Arnaud Montebourg criticized the European Commission's control of aid, which he considers too strict at a time when industry needs assistance. He wants aid for energy-intensive industries to receive an exemption due to competition from US companies that have much lower energy costs (estimated, on average, at one-third of the cost in Europe). More generally, Arnaud Montebourg was very critical of Joaquin Almunia, the European Commissioner for Competition. So is the Minister of Industrial Renewal (*Redressement productif*) right to castigate the control of State aid by the European Commission?

What does public aid for business entail?

"A transfer of wealth, directly or indirectly, from a public entity to an autonomous economic entity" – public aid to business can take a variety of forms. In France, half of State aid is made up of tax expenditures (tax credits or various exemptions), a third of financial support (loans, guarantees, capital), and the rest consists of direct and indirect subsidies.

A recent report by the General Inspectorate of Finance (IGF 2013) estimated the amount of public aid granted by the central government and local authorities to economic actors at 110 billion euros. Included in this total are measures such as reduced VAT rates (18 billion), reductions on social security contributions on low wages (21 billion), the CIR research tax credit (3.5 billion), as well as more than 600 State schemes

and even more under local authorities.

The report highlights the complexity of the system of aid, which is the result of a kind of sedimentation of successive measures, sometimes with intervention levels intermingled, and with many programmes involving small amounts. Criticizing the goals and effectiveness of this system, the report's authors lament that industry is not a bigger target: ultimately it receives only 2 billion euros (excluding CIR and relief from social security contributions and VAT), while agriculture receives 4 billion.

What justifies the European Commission's control of public aid?

A direct consequence of the implementation of the single market, Europe's control over State aid is a tool of European competition policy that is intended to ensure the existence of fair competition and to fight against distortions created by advantages granted by a State to its own companies. The fight against a "race to the top" in terms of aid is thus subject to control. Under [Article 87, paragraph 1, of the Treaty establishing the European Community](#), State aid is deemed incompatible with the common market, and Article 88 gives a mandate to the Commission to control such aid. But Article 87 also specifies the criteria that make aid "controllable" by the Commission.

A policy of support comes under the control of the Commission if it involves 1) specific aid (aid not paid to all firms or households, such as a general tax reduction), 2) the support policy involves a commitment of the State's public finances, whether direct grants, soft loans, tax credits, the supply of equipment, etc. 3) the support provides a specific advantage to companies, an industry, or a region (which they would not have received without the State's intervention) 4) the support distorts competition and may affect trade between the Member States – the [de minimis rule](#) exempts small amounts of aid.

What aid requires notice to the European Commission?

Aid to companies is subject to approval by the European Commission when it exceeds 200,000 euros over three years and it is not covered by arrangements for exemptions decided by Europe. In theory, aid may be granted only once the Commission's approval has been obtained. This is binding at a time of emergency measures and undeniably affects economic sovereignty. The interval between notification and a decision can range from 2 months to 20 months, or even more if an investigation is needed. The Commission has the power to require the reimbursement of aid that has been already paid and is deemed illegal; the EU Directorate-General for Competition exercises this control, with the exception of aid for agriculture and fisheries, which is under the control of their respective directorates. Legislation is constantly being adjusted to the economic situation, as happened at the time of the financial crisis in order to support the banking sector.

In an effort to simplify the controls and reduce administrative burdens, a general regulation on block exemptions, adopted in 2008, has clarified cases where no notification is necessary. There are numerous exemptions, which revolve around the following five themes: the Lisbon strategy, sustainable development, the competitiveness of EU industry, job creation, and social and regional cohesion. This system of exemptions shows that control is also an expression of European policy choices that are guiding State aid, and therefore public resources, towards uses that accord with these choices.

Is aid often refused?

According to Mr. Almunia, 95% of the aid examined is authorized. The statistics provided by the 2000-2013 Scoreboard ([DC, Europa Scoreboard](#)) show that 88% of notifications related to industry and services lead to the conclusion that the support measure in question does not fall

within the definition of public support, hence there is no objection. Another 5% of decisions are positive, and 1% are conditional. This comes close to the 95% cited. The remaining 5% consist of support measures that have been rejected by the Directorate for Competition, part of which (4%) will be recovered. Since 2000, this amounts for all the Member States to 251 refusals, the equivalent of an annual average of 22 refusals from 2000 to 2007, and 12 from 2008 to 2013.

The notifications from the French State overwhelmingly concern regional aid, especially for the DOM-TOM overseas territories, aid for certain agricultural sectors, and aid for R&D. For example, aid to Renault's HYDIVU project from the Agency for the environment and energy, notified in March 2013, resulted in a decision in October 2013 that the measure did not raise any objections. The aid to R&D for innovative young companies notified in December 2013 led to a decision in February 2014 by the Directorate for Competition that the measure did not raise any objections and was covered by the exemptions for support for R&D.

More recently, the Commission agreed to the State's entry into PSA's capital after having accepted the need for the company's restructuring in July 2013 (decision [SA.35611](#)). This capital acquisition was not found to constitute State aid. The French State was considered a private investor, just like the Chinese company Dongfeng.

In 2013, the French government issued 47 notifications, none of which raised objections. To date only one is under investigation: the alleged subsidies to public transport in the Ile-de-France region around Paris.

What is France's position with regard to State aid?

Of all the notifications addressed by Member States to the Directorate for Competition from 2000 to 2013 – i.e. 4765 in the field of industry and services – France sent 8.8%,

compared with 10% for Italy and Spain, 17% for Germany and 6.4% for the UK. The French State, so often accused of a Colbertist tendency, on average gave notice over the period of about half as much aid as Germany. The statistics provided by the “Scoreboard on State aid” ([DC, Aid in volume and as a % of GDP](#)) can be used to see France’s position in the EU15 in terms of the volume of aid granted relative to GDP. Table 1 shows that France is about average: higher than the group of countries with a free market tradition (UK, Netherlands, Belgium, Austria, Luxembourg) but below countries with a social-democratic tradition (Denmark, Finland, Sweden, Germany). With regard to the volume of aid relative to its purpose, it is customary to distinguish sectoral aid that benefits a particular sector, an “old version” brand of industrial policy, from horizontal aid that caters to all businesses, a “modern” brand of industrial policy, such as support for R&D. Once again, France occupies a middle position in terms of the percentage of sectoral aid relative to the EU15 group.

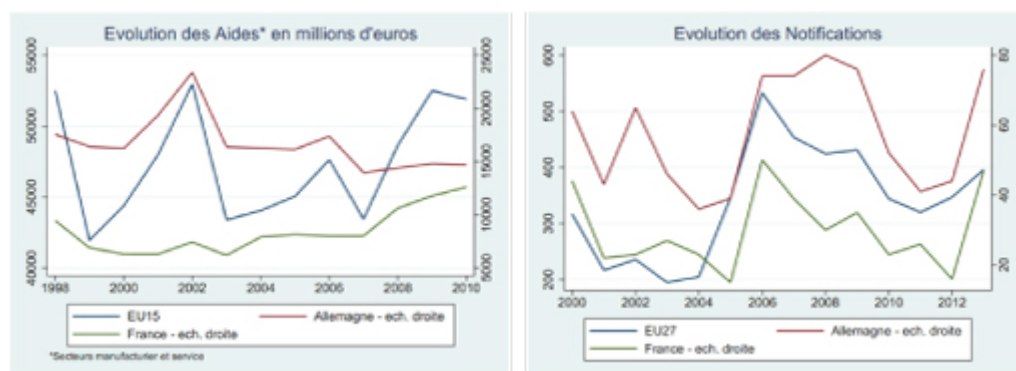
Table 1. Average public aid per country in the EU15 from 2000 to 2012

Country	Total		Service and Manuf.		% total aid	
	Millions of €	% GDP	Millions of €	% GDP	Sect. aid	Horiz. aid
Austria	1688,0	0,59	1214,3	72	27	73
Belgium	1567,4	0,44	1117,3	71	24	76
Denmark	2091,9	0,87	1719,6	82	17	83
Finland	2347,2	1,29	628,2	27	68	32
France	13495,8	0,69	8480,4	63	40	60
Germany	18130,5	0,75	16635,3	92	30	70
Greece	1462,8	0,68	841,3	58	36	64
Ireland	1193,7	0,79	684,8	57	54	46
Italy	7094,7	0,44	5232,7	74	32	68
Luxembourg	111,1	0,28	63,6	57	35	65
Netherlands	2429,8	0,43	1331,8	55	43	57
Portugal	2217,0	1,32	1462,5	66	80	20
Spain	6196,7	0,63	4833,1	78	47	53
Sweden	2751,5	0,74	2036,5	74	19	81
United Kingdom	4659,2	0,26	3201,5	69	29	71

Source : European Scoreboard Statistics, author’s calculations.

Both the volume of aid and the notifications are very sensitive to a country’s economic and institutional

environment and to shocks to this environment (German reunification, industrial restructuring, etc.). France is among the countries that have granted more aid in the recent period (2010-2012) than in the beginning of the crisis period (2007-2009). Countries that are comparable to it (Germany, Italy, Spain) have instead reduced their aid payments. The following graphs show changes in the volume of aid (constant euros). While the amount of aid clearly increased in 2007, the crisis does not seem to have fundamentally altered behaviour in terms of notifications. Aid for the banking industry is the subject of a specific legal system and separate accounting. The amounts described therefore do not include aid to the banking sector.



Source: DC, Europa State Aid Scoreboard Statistics.

There is nothing to show that the European Commission's controls on aid have hurt industry

This brings us to the question that concerns our Minister. If the level of public aid is positively correlated with manufacturing's share in the economy (see [Guillou S., 2014](#)), this is mainly because the characteristics of the manufacturing industry – regional imbalances, R&D, environmental investment – correspond more to the criteria for the authorized payment of aid. The manufacturing sector has also been characterized historically by lobbying, a potential trigger for aid, and is also the sector most exposed to international competition. There is no evidence that the causality would run from State aid to manufacturing's share of

value added. The reverse is much more likely.

Moreover, a careful analysis of the European Commission's control of aid shows that negative decisions are relatively rare. But a strong inhibitory effect cannot be excluded, in the sense that governments might exercise self-censorship in light of their knowledge of the case record of Europe's Directorate for Competition. This kind of censorship is difficult to quantify, but it is detectable for all the Member States in the decrease in notifications since controls were implemented.

There is however much room for exemptions, spaces in which aid to industry may be authorized. If indeed it is not possible to envisage a "CICE" tax credit that would be reserved for companies in the manufacturing industry alone, as this would be too selective, any measure is acceptable that is considered support for innovation and R&D, the development of renewable energies, the handling of regional and major sectoral imbalances, or job creation.

Moreover, a judgment on aid's legality is based on an economic cost-benefit analysis, which is sometimes not exempt from criticism or debate, but is undeniably based on an economic assessment of the allocation of public funds and of any distortions in competition that this allocation could create. There are *a priori* rules mandating rejection or acceptance, but most cases are subject to a reasoned economic analysis. This consists of a "balancing" between "the contribution to the attainment of an objective of well-defined common interest", such as efficiency or equity, and "the resulting distortion of competition and trade". The measure is also reviewed in order to determine its appropriateness, its effectiveness as an incentive and its proportionality. Finally a comparative scenario, a sort of counterfactual that envisages no implementation of the aid, is also used to help reach a decision.

On the question of support for energy-intensive industries, firms that consume electricity intensively have generally negotiated preferential rates with energy providers. This was the case in France with the Exeltium consortium, but it is also the case in Germany. Whether this involves preferential tariffs granted by a State-owned company (historical supplier) or a tax exemption or reduction, these measures have been analyzed by the Directorate for Competition. To date, these special rates have not encountered systematic opposition, but the process of deregulating Europe's electricity market and the new regulation on aid for the environment and energy – scheduled for the first half of 2014 – should not necessarily work in their favour. It is still the case that the best support for industries that intensively consume energy, and not just electricity, remains the appreciation of the euro vis-à-vis the dollar, which is reducing the cost of imported energy, even though this is rather debilitating for exporters, as our Minister frequently points out. In addition, the cost of energy is an incentive (among others) to invest in energy-saving technologies. This perfectly illustrates the economic adage that any choice (aid) is also a renunciation (of another use of resources). The competitiveness of energy-intensive industries or a policy to reduce fossil fuels – this is the choice at the heart of the European Commission's decisions.

Control on aid is aimed at a different type of objective

It is because the control of State aid is consistent with European objectives (Lisbon Objectives, 2008 Climate and Energy Package, and now the 2030 Climate and Energy Framework) that it might be possible to develop a coherent European economic policy.

The regulatory system and the jurisprudence on public aid have proven to be relatively flexible and adaptive. This should not prevent us from discussing and commenting on the decisions of the Directorate General for Competition, particular as competition policy does not need to resemble a doctrine to be

effective. It does, of course, entail some loss of economic sovereignty. But it needs to be recognized that control over aid is a major element in European economic cohesion, in the convergence of economic levels, and most of all in democracy. This reporting requirement generates valuable information for citizens about the use of public funds. Furthermore, it facilitates the readability of industrial policy and more generally of public aid from States, which citizens and the media have an interest in assessing on the eve of the upcoming European elections.

Vertical networks or clusters: what tool for industrial policy?

By [Jean-Luc Gaffard](#)

The concept of a “vertical network” [*filière*] is back in the spotlight and is playing the role of an instrument of the new industrial policy. A working document of the Fabrique de l’Industrie [Manufacturing Industry], ‘What use are ‘vertical networks’?’ (Bidet-Mayer and Tubal, 2013) recognizes that the concept has the virtue of helping to identify good practices and develop their application in relationships between businesses and between business and government. However, the same paper concludes by questioning the merits of a concept that emphasizes an approach to industrial organization that is more technical than entrepreneurial.

Our purpose here is to explore this issue and to challenge the

relevance of the “vertical network” concept and to advocate instead the notion of a “cluster”, which seems to correspond better to the need – for industrial policy – to recognize the leading role of the company in making strategic decisions.

The “vertical network”: a simplistic notion

In its old but strict sense, a “vertical network” consists of all or part of the successive stages of production, ranging from raw materials to the final product. This chain of products extends from upstream to downstream and is composed of technical relationships, which are identifiable based on technical coefficients of production. These are subsets of input-output tables that are characterized by the existence of a high level of spill-over or dominance effects that stem from the fact that the concentration of relationships is denser in some industries than in others (Mougeot, Auray and Duru, 1977).

Defined like this, a “vertical network” obviously says nothing about industrial organization *per se*, that is to say, about how firms set the boundaries for their activities. The companies concerned may choose to integrate the different stages in a vertical network or on the contrary focus on one stage and build pure market relations both upstream and downstream. They can also choose to form a relationship that could be described as a hybrid, based on medium-term contractual relationships both upstream and downstream.

The organizational decision takes place in a specific technical context, based on a comparison between the costs of operating through the market, through contracts or through internal transactions ([Coase, 1937](#); Williamson, 1975). The technical features are covered over by the transaction costs and have limited relevance. The specific characteristics of the assets, which have a technical dimension, are taken into account in making the choice, but primarily because of the possibility for opportunistic behaviour (hostage-taking) that

it permits.

The designation of a thusly defined "vertical network" as a tool of industrial policy, based on a certain stability of technical relations, creates an obstacle to innovation, whose major characteristic is to upset linkages within the vertical network and thus its very structure. In fact, the use of the "vertical network" concept really holds interest only for a short-term perspective, when it comes to measuring the impact of the transmission of cyclical fluctuations within a technically stable, productive structure (Mougeot, Auray and Duru, 1977).

The industrial policy measures that flow from this may affect how companies define the scope of their activities by affecting transaction costs. One example is the rules governing the relationships between contractors and subcontractors. But their effects are somewhat unclear with respect to the expected impact on the innovative capacity of the firms concerned.

The simplicity of the concept of a vertical network, together with its limitations, make the way that the concept is used (1) dangerous, if the fixed nature of the technique is taken literally (as has been the case in the past), and (2) ambiguous, if it is understood as dealing with the technical and organizational changes inherent in a market economy. As evidence of this ambiguity, consider a list of "vertical networks" today, which refer to objects such as cars, trains and planes; to luxury items whose most common feature is that they are aimed at a very rich clientele; to generic technologies such as information and communication technology; and to social issues such as health care and the ecological transition, not to mention the mishmash constituted by the consumer goods industry.

While the notion of a vertical network, that is to say, a group of industries that are technically related, has to some

extent fallen into disuse since the 1980s, it is precisely because strategic business decisions are far from being dominated by technology, and a frozen state of technology in particular. The structuring of the industrial fabric is constantly changing as a result of the choices and constraints that determine them. In other words, industries are more the result of processes of innovation than of technical frameworks that supposedly control strategic choices.

It is not surprising, then, that industrial policy in the narrow sense of direct aid to companies in specific sectors has itself fallen into disuse and made room for policies on competition and regulation that are designed as efforts to move closer to a state of full competition.

The company: the essential reference

This observation does not mean that intra- and inter-vertical network relations do not matter and that all that counts are market incentives. Companies are not islands of planned coordination in a sea of ??market relations. They come to agreements about technology, distribution and marketing and develop subcontracting relationships and create joint ventures ([Richardson, 1972](#)). There is a major reason for this. To invest, a company has a need for coordination that cannot be met simply by the competitive market, but rather involves the emergence of forms of cooperation that reflect membership in a particular group. This company is characterized by its mobility, which leads it to introduce new products or even to change vertical network, thereby upsetting the relationships it has formed with others, but always along a trajectory that is determined by its core competencies.

Generally speaking, companies interact and have to solve difficulties in coordination arising from a lack of information. This is not so much a lack of technical information as a lack of information about market conditions, meaning the configuration of demand but also of competing and

complementary suppliers (Richardson, 1960).

In fact, companies face two deadlines: a deadline for the gestation of irreversible investments, including investments in intangibles, and a deadline for acquiring market information. To deal with this and decide how to invest effectively, companies need to have a certain degree of confidence about the levels of competing investments and of complementary investments. The coordination required is not assured solely by market signals or, more precisely, by price signals alone. This also demands that cooperative relationships between companies complement their competitive relations (Richardson, 1960). These relationships constitute business networks for which the qualification of a "vertical network" is undoubtedly too narrow, even if technical proximities or complementarities do play a role. Belonging to a group characterized by having broadly similar skills or qualifications, rather than to a vertical network or business sector, is related to these relationships which secure the investments of each group member.

Companies seeking to innovate do not mainly face the existence of entry barriers (due to the price or investment behaviour of the established companies) or barriers to business creation. They have to deal in particular with the existence of barriers to growth that are related to their ability to be mobile ([Caves and Porter, 1977](#)). It is obviously difficult for companies to enter new business fields or to increase their size significantly. They are successful in attaining new size thresholds whenever they can acquire new managerial capabilities and ensure control of their capital. They enter into a new activity, possibly one that is quite different from their current activity in terms of the markets served, only so long as the technical and managerial skills in one business are useful in the other. Thus business groups come into being that are organized around similar or complementary skills, which transcend divisions into industries or sectors. These

groups are the arenas where competition is carried out. Their very nature limits, or even thwarts, the development of an oligopolistic consensus. Because of their structural similarities, each group member responds in the same way to internal and external disturbances and anticipates the reactions of the others with a good deal of accuracy (Caves and Porter, 1977). A sort of coordination and mutual dependence thus develops within each group.

Based on this dual observation of the need for both coordination and mobility, it is clear that an industrial fabric is complex and can only with difficulty be reduced to "vertical networks" in the original meaning. Industrial policy is thereby inevitably affected, as it cannot be reduced to direct aid to firms, sectors or even technologies, nor to the application of rules on supposedly perfect competition.

Clusters: a suitable response

The nature of the productive system requires a horizontal industrial policy, which involves in particular subsidizing R&D and occupational training, but which makes sense only if this type of aid is conditional on the achievement of the objective of business mobility and of vertical as well as horizontal cooperation between companies.

It is with regard to this objective that the creation and development of *clusters* should be preferred, this being understood to mean groups or networks of companies and institutional structures that, while certainly having a geographical dimension, cannot necessarily be reduced to a strictly defined territory. A cluster is primarily a tool that aims to develop both voluntary cooperation between companies and a network of expertise. Its configuration is determined by the companies. The capacity building that arises from this organizational network nourishes a capillary type of action and the progressive entry of the individual members into new fields of activity.

Logically speaking, the initiative for these clusters should come from the companies themselves, with the government's role being to encourage them, specifically by making its aid contingent on the reality of the cooperation achieved. Ensuring that there is genuine cooperation requires that public funding be conditional on the contribution of private funds. The method of governance must recognize the pre-eminent role of the firms in the industry. It is this feature that has underpinned the success of German industry – it is, to say the least, risky to chalk this success up to competitiveness gains generated by labour market reform (Duval, 2013).

In this light, there should be nothing surprising about the successes and failures of industrial policy. When these configurations have the characteristics of clusters in the sense used here, whether this involves aerospace, automotive or railway, the mechanisms implemented have allowed for credible projects that have promoted competitiveness. When the supposed industries are loosely or not at all structured and bear no relationship to clusters, the failures are obvious, because there are no eligible projects under existing public procedures and in particular because of the weak involvement of small and medium-sized enterprises in collaborative projects.

The fact that the vertical networks adopted cover almost every industry forbids, moreover, any real discrimination between the forms of industrial organization. There is thus a very real risk that public funds will be wasted. Some groups, who are accustomed to dealing with the government, will capture aid for projects that they would have carried out anyway, while at the same time companies that are engaged in innovative activities will not win any support, due to failing to fit the pre-defined framework.

Once again on the question of company size

There is a functional relationship between organizational

efficiency and the growth rate, with the first falling when the second rises beyond a certain threshold (Richardson, 1964). The exploitation of new investment opportunities normally goes to companies that have the most suitable production experience, business contacts and marketing skills. These capabilities are a matter of degree. The degree of organizational constraint will depend not only on the growth rate but also on the direction in which the expansion takes place. This will also depend on the extent to which the company concerned can acquire the skills, including managerial, required to be mobile without incurring excessive costs ([Richardson, 1964](#)). A cluster type organization will be able to help.

The cluster is a place for exchanges and skills transfers that facilitate the entry of firms into new fields of activity, even if only geographical, which should enable the smaller ones to grow in size. The cluster organization can also promote mechanisms that facilitate the access by small firms to the financing required for investment, while at the same time allowing them to retain control of their capital, and thus their identity.

By way of a conclusion

As is clear, industrial policy should not amount to planning based on a purely technical approach to industrial organization, the kind captured in the "vertical network" concept, which would make it hostage to local and national lobbies. Nor should it be reduced to regulatory and competition policies designed for a virtual world where the only relations among companies are market relations. It must be understood as a way to stimulate the creation and development of clusters designed as operational networks of expertise, whose governance must be ensured under conditions that favour entrepreneurial decisions, and not bureaucratic ones.

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Competitiveness and industrial demand: The difficulties facing the French-German couple

[Jean-Luc Gaffard](#)

The obsession with competitiveness has returned to centre

stage with the election campaign. This reflects the reality that French companies are indeed suffering a loss of competitiveness, which is behind the deterioration in foreign trade for almost a decade. This loss is clear vis-à-vis the emerging markets and explains the trend towards relocating abroad. It is also clear vis-à-vis firms from other developed countries, mainly in the euro zone and in particular German companies. This latter situation is especially serious, as it challenges the coherence of European construction ([cf. OFCE, note 19: Competitiveness and industrial development: a European challenge in French](#)).

The gap in competitiveness that has emerged with Germany is clearly based on non-price competition. One of the reasons for this is Germany's superior business model, which is characterized by the maintenance of a network of local businesses of all sizes that focus on their core business and on the international fragmentation of production. This model is especially suitable for business development that is targeted at global markets, and it largely protects the countries hosting these companies from the risk of deindustrialization.

It would, nevertheless, be a mistake to ignore that this development is also the product of an adverse change in price competitiveness. This reflects labour market reforms in Germany, which lowered the relative cost of labour, as well as strategies that are based on the segmentation of production and the outsourcing of intermediate segments, which have also contributed to lowering production costs.

Germany has thus managed to virtually stabilize its market share of global exports by increasing their level in the European Union (+1.7% in the 2000s) and even more so in the euro zone (+2.3%), while France has lost market share in these same areas (3.1% and 3.4%, respectively).

Two developments have particularly hurt France's industry. Its network of industrial SMEs has fallen apart. They were hit

less by barriers to entry than by barriers to growth. All too often SME managers have been inclined or encouraged to sell the enterprises to large corporations rather than to ensure their growth. This is due both to the lack of genuine partnerships with these corporations and to the difficulties experienced in obtaining permanent financing from the banks and markets. For their part, the large industrial firms, both those operating on a multitude of local markets and those in the international markets, have chosen to focus on acquisitions and on the geographical decentralization of both their operations and their equipment and services suppliers. This strategy has been designed to meet geographical shifts in demand and to deal with the demand for immediate profitability set by volatile shareholders, but this has come in part at the expense of the development of local production networks. This process involved a vast movement of mergers and acquisitions that primarily drew on financial skills. The financial institutions were, in turn, converted to the universal banking model, abandoning some of their traditional role of being lending banks and investment banks. These concomitant developments have proved disastrous for overall competitiveness, particularly as hourly labour costs in industry were rising simultaneously.

There are two requirements for restoring the competitiveness of French companies and thereby encouraging the country's re-industrialization. The first is to allow immediate control of labour costs and the restoration of profit margins; this could be helped in particular by tax measures that would adjust the financing of a portion of social protection. The second requirement is to promote the reorganization of industry through the creation of a network of stable relationships between all those involved in the industrial process, especially by the use of aid that is conditioned on cooperation between large and small firms in "competitiveness clusters".

This medium-term effort will nevertheless largely remain ineffective if cooperative policies are not implemented across Europe. These policies need both to stimulate supply through the implementation of technology development programmes and to boost internal demand wherever it is clearly insufficient to satisfy production capacity.