

War in Ukraine and rising international tension: What impact on GDP?

By [Raul Sampognaro](#)

The invasion of Ukraine launched by Russia on 24 February 2022[[1](#)] dealt a major shock to the European economy, which was already suffering from other constraints (supply problems[[2](#)], recruitment difficulties, rising energy prices, inflation). Beyond the massive impact on the economies of the countries directly affected by the war, in particular the aggressed country itself (human losses, destruction of capital, diversion of resources from production, among others), the rise in geopolitical tensions can have economic effects even in countries not (directly) involved in the fighting. In the face of this, these countries may boost their military spending, adopt wait-and-see investment behaviour, increase precautionary savings, or suffer unanticipated shocks to import prices and capital flows (in or out). In a study [available online](#) [in French], we have attempted to quantify the effects of these ongoing tensions on GDP growth in the six economies most closely followed by the OFCE: France, the United States, the United Kingdom, Germany, Italy and Spain. In addition, we have tried to measure the impact on world trade and global industrial production.

[Caldara and Iacoviello \(2022\)](#) have recently proposed a [quantitative indicator of geopolitical risk](#). The authors construct an indicator for the level of tension at the global level, which they have developed for 43 countries, including the main players on the international scene. The study also

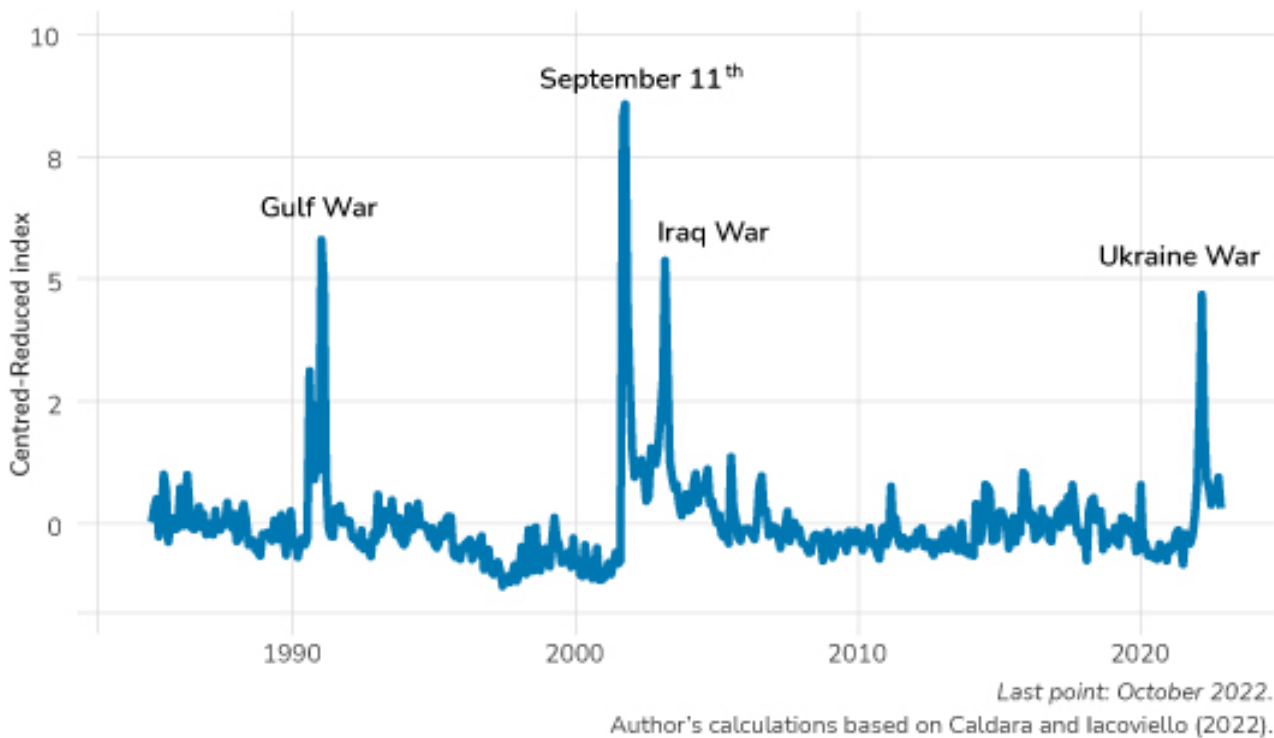
sets out the statistical method used to quantify the causal impact of the developments observed in 2022. This publication comes at just the right time for the forecaster.

2022: A historic year for international relations

For Caldara and Iacoviello (2022), *geopolitical* risk is associated with the impact of international crises, and more specifically with violence that affects the peaceful course of international relations. According to the authors, geopolitical risk refers to threats, or materializations of threats or the escalation of a pre-existing conflict. Such conflicts may be related to war, terrorism or any other type of tension between states or political actors. It should be noted that the term risk used by the authors for this type of phenomenon has a broad meaning that goes beyond the measurement of uncertainty or the probability that a random event will occur. The geopolitical risk index measures not only potential conflicts (which is consistent with a probabilistic definition of risk) but also conflicts that are actually taking place[\[3\]](#).

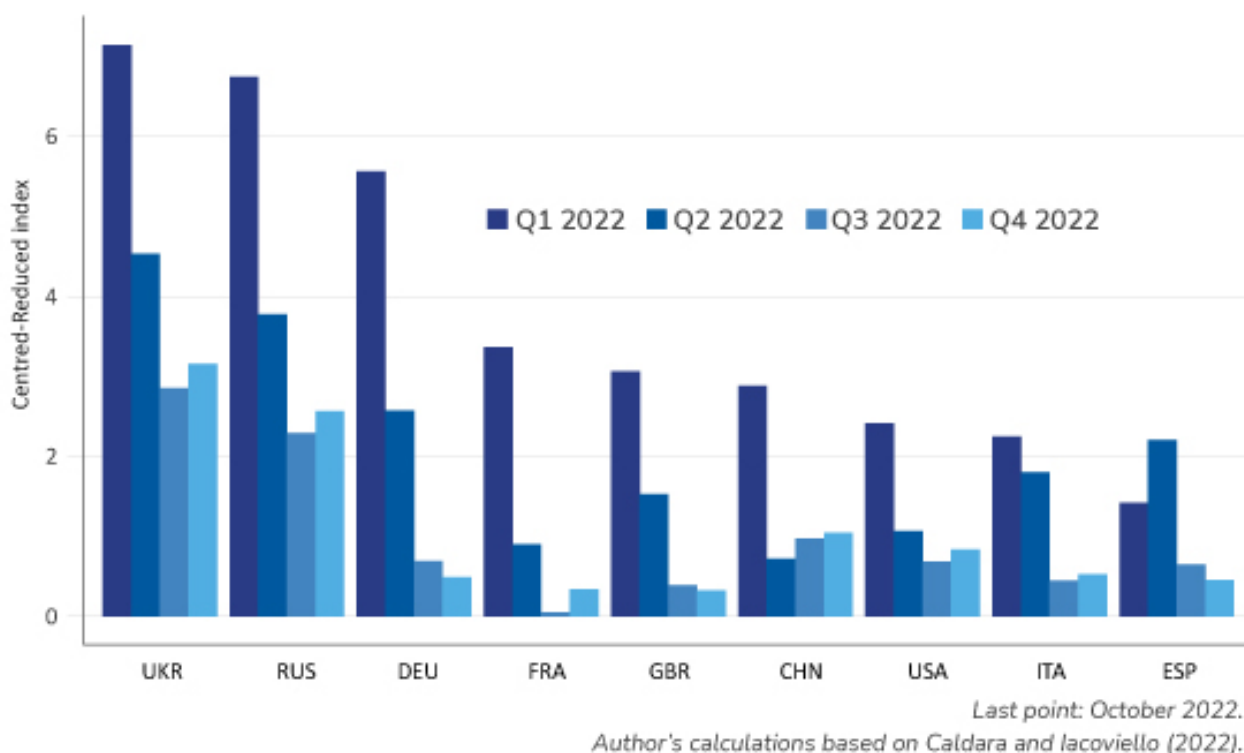
Since the 1980s, this index exhibits major changes, notably during the Gulf War, September 11th, the war in Iraq and more recently the invasion of Ukraine (see [Figure 1](#)). Moreover, between 2003 and 2022, there were occasional peaks in tension following the various terrorist attacks that took place in Europe (with France in the front line) but also in the United States, as well as other conflicts (war in Libya, for example).

Figure 1. Geopolitical Risk (GPR) Index



Of course, shocks do not affect all countries equally. [Figure 2](#) shows recent changes in the geopolitical risk index in a selection of countries since the beginning of 2022. Unsurprisingly, the risk rose the most in Ukraine and Russia. In the wake of the invasion of Ukraine, geopolitical risk has risen sharply in Germany, which is especially dependent on Russian hydrocarbons. The other European countries seem – logically – more exposed to the current tensions than China and the United States.

Figure 2. Quarterly changes in the Geopolitical Risk Index in several countries in 2022



Germany's growth strongly affected by the rise in tension

The study estimates the responses of several economic variables (GDP, investment, interest rates, market capitalization) caused by a geopolitical risk shock^[4]. In our main results, the geopolitical shock induces an endogenous fall in oil prices and interest rates. In this context, a geopolitical risk shock operates as a demand shock. When this negative effect on energy prices occurs – which is not the case for all countries – we have neutralized this endogenous effect, which does not seem to be operational in the current context, particularly in Europe, in order to make more robust quantitative assessments.

According to our estimates, if the global geopolitical risk index remains at its October 2022 level until the end of the year, the rise in geopolitical tensions observed in 2022 will have accounted for a 0.7 point drop in world merchandise trade (in volume terms) and a 0.6 point drop in world industrial production. In addition, Germany will have lost up to 1.1

percentage points of GDP in 2022 due to the year's rising geopolitical tensions. Elsewhere, the effects are smaller but significant: between 0.4 and 0.5 points of GDP in France, and 0.3 and 0.4 points in the US, Italy and the UK. Finally, Spain's GDP loss would be about 0.2 points (Table 1) [5].

These results provide a basis for reflection but should be taken with caution. Each international crisis is unique, and it is difficult to assess one exclusively in terms of a quantitative indicator. In particular, the current crisis has major consequences for Europe's energy supply, especially in terms of gas, which produces a different crisis from what would spontaneously emerge from a statistical model based on observations in the past [6].

Table. Impact of the invasion of the Ukraine on the GDP of six advanced economies in 2022

	Impact on GDP in 2022 if the GRP stays at its October 2022 level...		...and if the impact on Brent is neutralized
	...until October 2022	...until December 2022	...until December 2022
France	-0.4	-0.4	-0.5
United States	-0.3	-0.3	-0.4
Germany	-1.0	-1.1	-1.1
Italy	-0.2	-0.3	n.p.
Spain	-0.2	-0.2	n.p.
United Kingdom	-0.3	-0.3	-0.3

In the last column, it is not pertinent (n.p.) to neutralize the endogenous reaction of Brent prices to the shock of a geopolitical risk – and its impact on GDP – since this variable is not included in the models used for Italy and Spain.

Source: Author's calculations based on Caldara and Iacoviello (2022).

[1] Caution: When it is said that Russia's invasion of Ukraine dates from 24 February 2022, this is done for ease of language. It should not be forgotten that parts of Ukraine's territory, including the Crimea, have been under Russian control since 2014. What we are currently experiencing, far from being the beginning of a conflict, is above all the crossing of a milestone in a conflict that has persisted for many years.

[2] See [Dauvin \(2022\)](#) for an analysis of the impact of a supply shock on GDP growth in the six advanced economies.

[3] The reader interested in a more comprehensive presentation can refer to the original article for greater detail.

[4] The estimates are made using the local projection method of Jordà. See Òscar Jordà, 2005, "Estimation and Inference of Impulse Responses by Local Projections", *American Economic Review*, vol. 95, no. 1, pp. 161-82. <https://doi.org/10.1257/0002828053828518>.

[5] Obviously, while most of the increase in international tension can be attributed to the consequences of Russian decisions, it is not possible to exclude other sources of international tension, particularly in connection with the future of Taiwan and Sino-American relations.

[6] [Geerolf \(2022\)](#) discusses the implications of modelling an energy supply shock specifically in the context of a Russian cut-off of the gas supply.

Reducing uncertainty to facilitate economic recovery

Elliot Aurissergues (Economist at the OFCE)

As the health constraints caused by the pandemic continue to weigh on the economy in 2021, the challenge is to get GDP and employment quickly back to their pre-crisis levels. However, companies' uncertainty about their

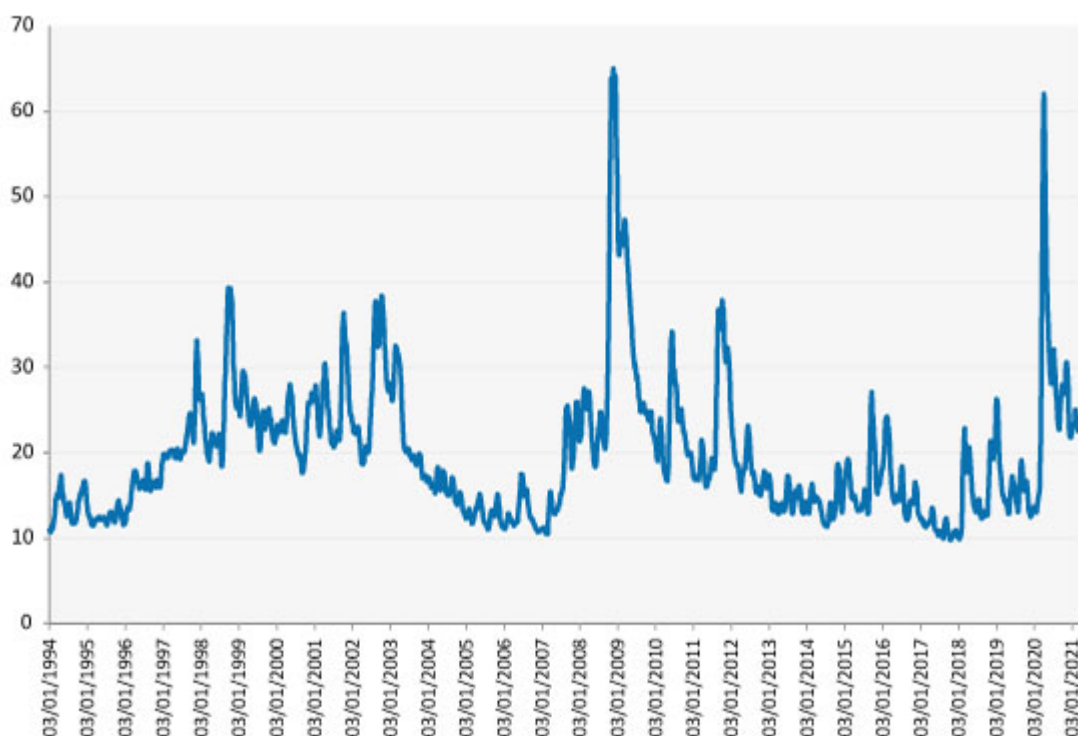
levels of activity and profits in the coming years could slow the recovery. In order to cope with the possible long-term negative effects of the crisis, and weakened by their losses in 2020, companies may seek to restore or even increase their margins, which could result in numerous restructurings and job losses. Economic recovery could take place faster if business has real visibility beyond 2021. While it is difficult for the current government to make strong commitments, on the other hand mechanisms that in the long term are not very costly for the public purse could make it possible to take action.

Post-pandemic uncertainty will hold back a recovery

In economic terms, the pandemic represents an atypical crisis. It combines both goods and labour supply shocks and a fall – largely constrained – in consumption (Dauvin and Sampognaro, 2021). There are not many recent episodes that can provide useful points of comparison for economic actors. Some elements do indicate a rapid return to normalcy, including the dynamism of some Asian economies, in particular the Chinese economy, and the resilience of the US economy and the Biden administration's economic policy. On the other hand, there are other factors that may limit economic growth in the coming years. The heavy losses of some companies could lead to a wave of bankruptcies (Guerini *et al.*, 2020; Heyer, 2020), with possible negative effects on productivity or the employment of certain categories of workers. Some consumption patterns could be modified permanently, with a heavy impact on sectors like aeronautics and retailing. The trajectories of some of the

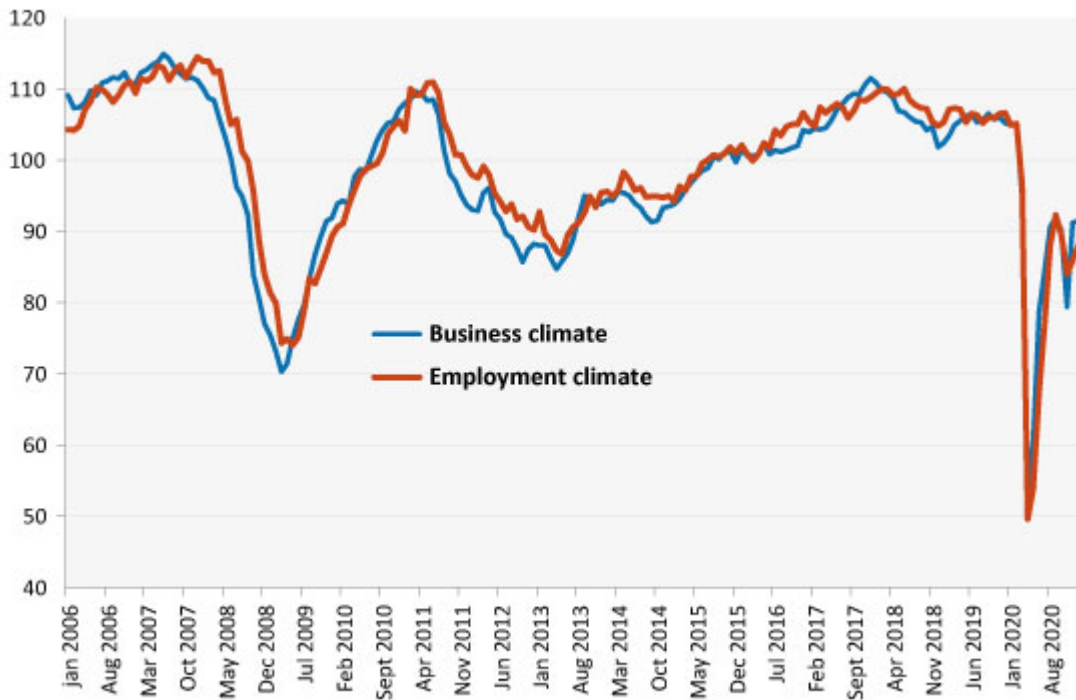
emerging economies are another unknown, as they cannot afford the same level of fiscal support as do the US and Europe. Finally, the concentration of the shock on sectors that tend to employ low-skilled workers risks increasing inequalities within countries, and thus generating a further rise in global savings. Some indicators reflect this still high uncertainty. The VIX index, which captures market expectations for the volatility of US stock prices, remains twice as high as before the crisis and is comparable to the levels reached during the Dotcomcrisis (see Figure 1). In France, the business and jobs climate has rebounded strongly from its historical low in March-April 2020, but is still at the same level as during the low point of the eurozone crisis in 2012-2013 (see Figure 2).

Figure 1. Changes in the VIX index since 1994



Sources: Chicago Board Options Exchange, VIX smoothed over 20 days, OFCE calculations.

Figure 2. Business and jobs climate in France



Source: INSEE.

The literature shows that uncertainty about the medium-term path of the economy affects the way companies behave today. By identifying uncertainty with stock price volatility, Bloom (2009) suggests that it has had a significant negative impact on GDP and employment in the US. A number of other studies have used different methodologies to confirm this idea [1]. Given the severity of the recession in 2020, uncertainty could have an even greater impact. Effects that are usually second-order may be enough to derail an economic recovery.

A proposal for giving visibility to businesses

The measures in France's current stimulus package basically focus on 2021 and 2022 and do not give any visibility to businesses about their activity or cash flow beyond 2022. It is true that it is difficult for the current government to commit to major expenditures that would have to be assumed by future governments. However, it is possible to envisage relatively

strong measures that have limited budgetary costs over the next ten years (and therefore a limited impact on the fiscal manoeuvring room of future governments).

Proposal: Give companies the following **option:** a subsidy of 10% of their wage bill (wages under 3x the minimum wage – the SMIC) between 2022 and 2026 in exchange for an additional tax of 5% on their gross operating profits (EBITDA) over the period 2022-2030.

For firms applying for the scheme, this is **the fiscal equivalent of a temporary recapitalization**. They exchange a subsidy today for a fraction of their profits tomorrow. The implicit cost of capital would be particularly attractive. The scheme is calibrated so that its “interest rate” (given by the ratio between the sum of additional taxes over 2022-2030 and the sum of subsidies over 2022-2026) is close to 0% for the “average” French company. This rate would be lower *a posteriori* for companies that will have performed less well than expected. Compared with other recapitalization methods such as direct public shareholdings or the conversion of loans into quasi-equity, there is no risk that the current shareholders will lose control of the company.

The advantage of the scheme is that it automatically targets the companies that face the greatest need. The businesses that anticipate possible economic

difficulties over the next few years and that have employment-intensive activities will self-select, while others will have no interest in applying for the subsidy. As the subsidy is disbursed gradually, companies that maintain employment over the period will be favoured. Capital-intensive and high-growth companies would not be penalized, as the scheme would remain optional. The additional tax on EBITDA is temporary and should not have a negative impact on investment by those applying for it.

The cost in terms of public debt up to 2030 would be low: about 10 billion euros [\[2\]](#), or 0.4 percentage points of GDP, if all companies were to apply. The self-selection effect of the scheme would increase the average cost per beneficiary company but would also decrease the number of beneficiaries, thereby having an ambiguous impact on the total cost. This does not take into account the beneficial impact of the scheme on the public finances in so far as it prevents job losses and the non-repayment of certain guaranteed loans. The fiscal impulse over 2022-2025 could on the other hand be quite strong, on the order of 1 to 1.5 GDP points per year (i.e. 4 to 6 GDP points over the four years) but would be counterbalanced by an automatic increase in revenue over 2025-2030 [\[3\]](#).

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[1] Fernandez-Villaverde, Guerron-Quintana, Rubio-Ramirez and Uribe (2011) show that increased interest rate volatility has destabilizing effects on Latin American economies. In a 2015 paper, the same authors suggest that increased uncertainty about future US fiscal policy leads firms to push up their margins, reducing economic activity. This result has been confirmed by Belianska, Eyquem and Poilly (2021) for the euro zone. Using consumer confidence surveys, Bachmann and Sims (2012) show that pessimistic consumers reduce the effectiveness of fiscal policy during a recession. Finally, uncertainty among CEOs has a negative impact on output, as shown by German data analysed by Bachmann, Elstner and Sims (2013).

[2] The total of wages below 3 SMICs in 2019 was on the order of 480 billion euros (the total of gross wages and salaries came to 640 billion for non-financial companies, and the latest INSEE data suggest that wages below 3 SMICs represent 75% of the wage bill, an amount that seems consistent with the data on the cost of France’s CICE tax scheme). The EBITDA of non-financial companies was 420 billion euros. Based on these 2019 figures, and if all companies were to apply for the scheme, the total

subsidy would amount to $0.1 \times 480 \times 4$ or 196 billion euros. The EBITDA tax would under the same assumptions yield $0.05 \times 420 \times 8 + 0.05 \times 196$ (5% of the subsidy will be recovered via the extra EBITDA) or 186 billion euros.

[3] This additional tax revenue should not penalize activity over this period because (1) it will concern capital income for which the marginal propensity to consume is rather low, and (2) the beneficiary companies should be able to anticipate it correctly.

On French corporate immaterial investment

By [Sarah Guillou](#)

A note on the [immaterial singularity of business investment in France](#) from 26 October 2018 highlighted the significant scale of investment in intangible assets by companies in France. In comparison with its partners, who are similar in terms of productive specialization, the French economy invests relatively more in Research and Development, software, databases and other types of intellectual property. Looking at gross fixed capital formation (GFCF) excluding construction, the share of intangible investment reached 53% in 2015, compared to 45% in the United Kingdom, 41% in the United States, 32% in Germany and 29% in Italy and Spain.

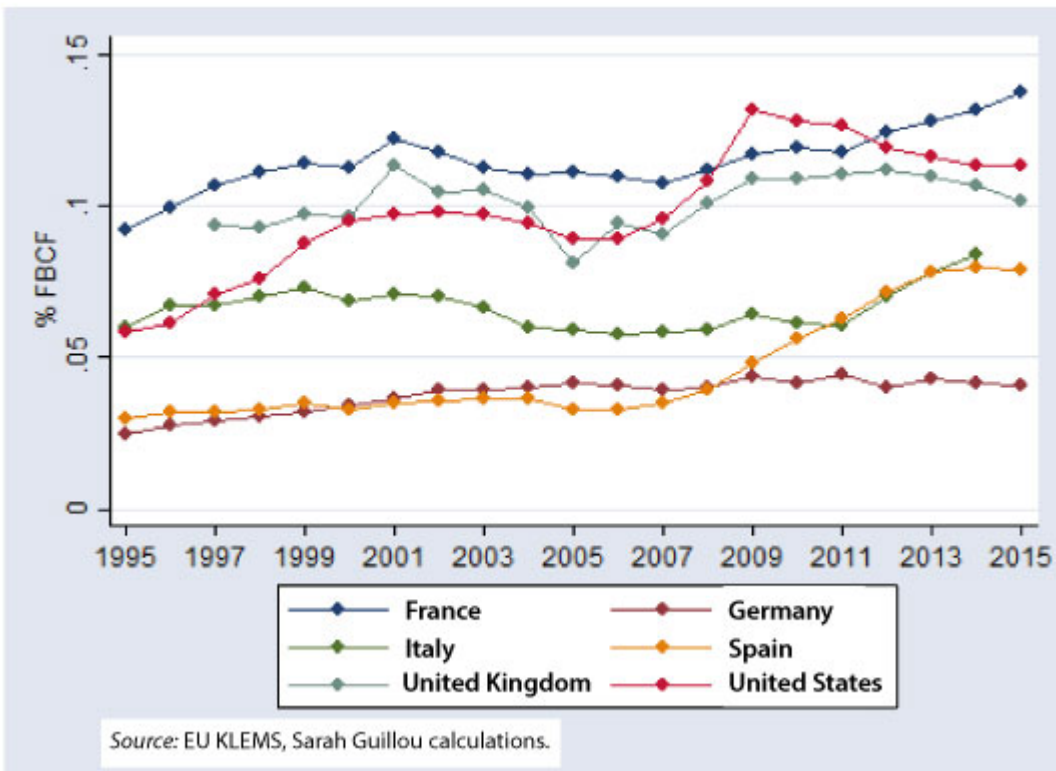
These results are corroborated by statistics that evaluate other dimensions (INTAN basis), outside the national accounts,

of intangible investments, such as those in organization, training and marketing. France is not lagging behind its partners in this type of asset either (see Guillou, Lallement and Mini, 2018).

As for the national accounts, these include two main intangible assets: R&D expenditure and expenditure on software and databases. In terms of R&D, French investment performance is consistent with the technological level and structure of its production specialization. If the French economy had a larger manufacturing sector, its spending on R&D would be much larger. What is less coherent is the extent and intensity of investment in software and databases, to such an extent that one cannot help but wonder whether this immaterial dimension of investment is almost unreal.

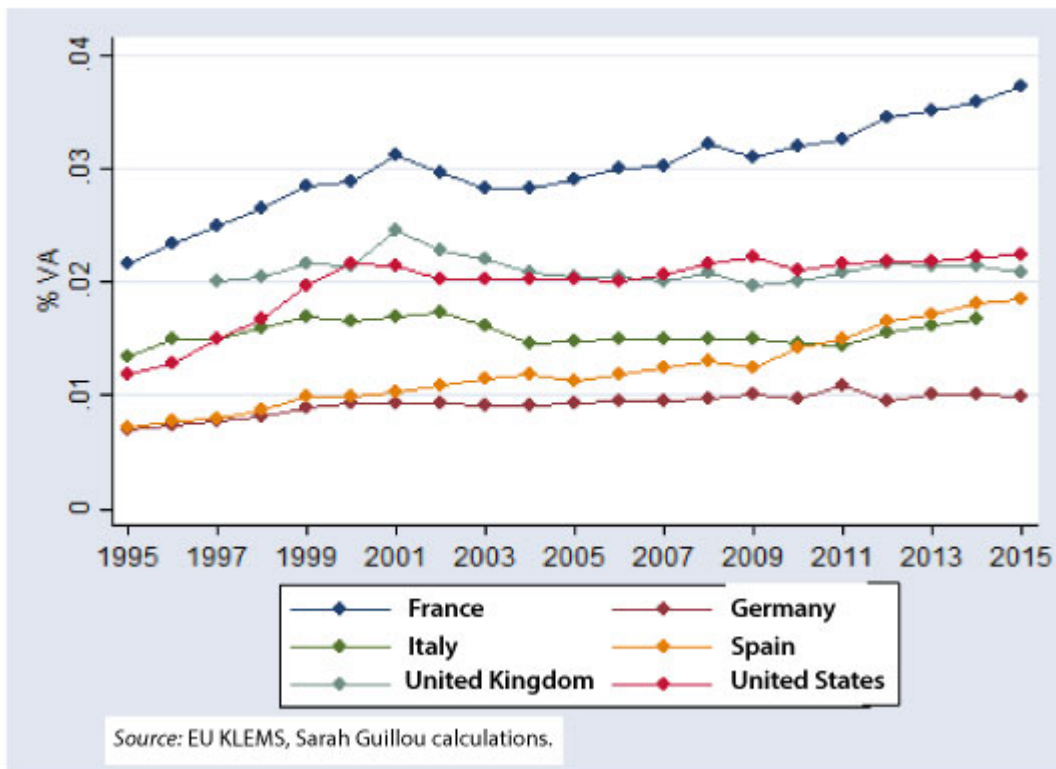
Figure 1 illustrates that “Software and databases” investment is larger in France than in the rest of the European countries. The share is, however, close to the levels observed in the United Kingdom and the United States. Of course, this share reflects the weakness of other targets for investment such as machinery and equipment specific to the manufacturing sector (see the earlier note on investment).

Figure 1. Share of GFCF in software and databases in total market sector GFCF



In terms of the rate of investment, that is to say, investment expenditure as a ratio of value added of the market economy, the dynamism of the French economy in terms of software and databases is confirmed: France clearly outdistances its partners.

Figure 2. Rate of investment in software and databases
in the market sector



This also raises questions because it reveals a gap of 2 percentage points of the VA relative to the United States and 3 points relative to Germany. French companies invested 33 billion euros more in software and database than did German companies in 2015. Note that in 2015 total GFCF excluding construction was 285 billion euros in Germany and 197 billion in France. Moreover, the gap in the investment rate across all types of assets in France was 4 percentage points vis-à-vis Germany ([see Guillou, 2018, page 20](#)).

This gap can be explained only under the conditions, 1) that the production function of the French economy uses more software and databases than its partners, or 2) that the GFCF software and databases item is either artificially valued in relation to the current practices of France's partners, which may be the case, or because the value of the software asset is more important in France (companies may choose to put spending on software in current spending), either because the asset value is greater (which is possible because part of this

value, that of software produced in-house, is up to the discretion of the companies).

Understanding this gap is of considerable importance, because it is decisive for making a diagnosis of the state of French corporate investment and the state of its digitization (see Gaglio and Guillou, 2018). The aggregate macroeconomic value of GFCF includes GFCF in software; if this is overestimated, it has implications for the macroeconomic balance and the contribution of GFCF to growth. The measurement of total factor productivity would also be affected, as the overestimation of capital (fuelled by investment) would lead to underestimating residual technical progress. So not only would the investment effort of French companies be overestimated, but the diagnosis of the nature of growth would also be off.

But there are reasons to question how real this gap is. In other words, shouldn't the immateriality of GFCF be viewed as a flaw in reality?

On the one hand, it is not clear that France's productive specialization justifies such overinvestment in software and databases. For example, the comparison with Germany, the United Kingdom, Italy, the United States and Spain shows specialization that is relatively close, with the exception of the manufacturing sector, which has a much greater presence in Germany. The share of the "Information and Communication" sector in which digital services are located correlates well with GFCF in software, but this sector is not significantly more present in France. It represents 6.5% of the value added of the market economy, compared to 6% in Germany and 8% in the United Kingdom ([see Guillou, 2018, page 30](#)).

On the other hand, the data from the input-output tables on consumption by branch of goods and services coming from the digital publishing sector (58) – a sector that concentrates the production of software – do not corroborate French

superiority. The following graphs show that, whether considering domestic consumption (Figure 3) or imported (Figure 4), intermediaries' consumption of digital services in France does not confirm the French domination recorded for GFCF in software and databases. On the contrary, these two graphs show that the French economy's consumption of inputs from the digital publishing sector is not especially high and even that domestic consumption has fallen.

While the overlap between "software and databases" on the one hand and "digital publishing services" on the other is not perfect, there should not be a contradiction between the trends or the hierarchies between countries – unless software expenditure consists mainly of software produced in-house, in which case it will be recorded as assets rather than as consumption of inputs from other sectors.

Figure 3. Consumption of digital publishing companies of domestic services (per 1000 of value added)

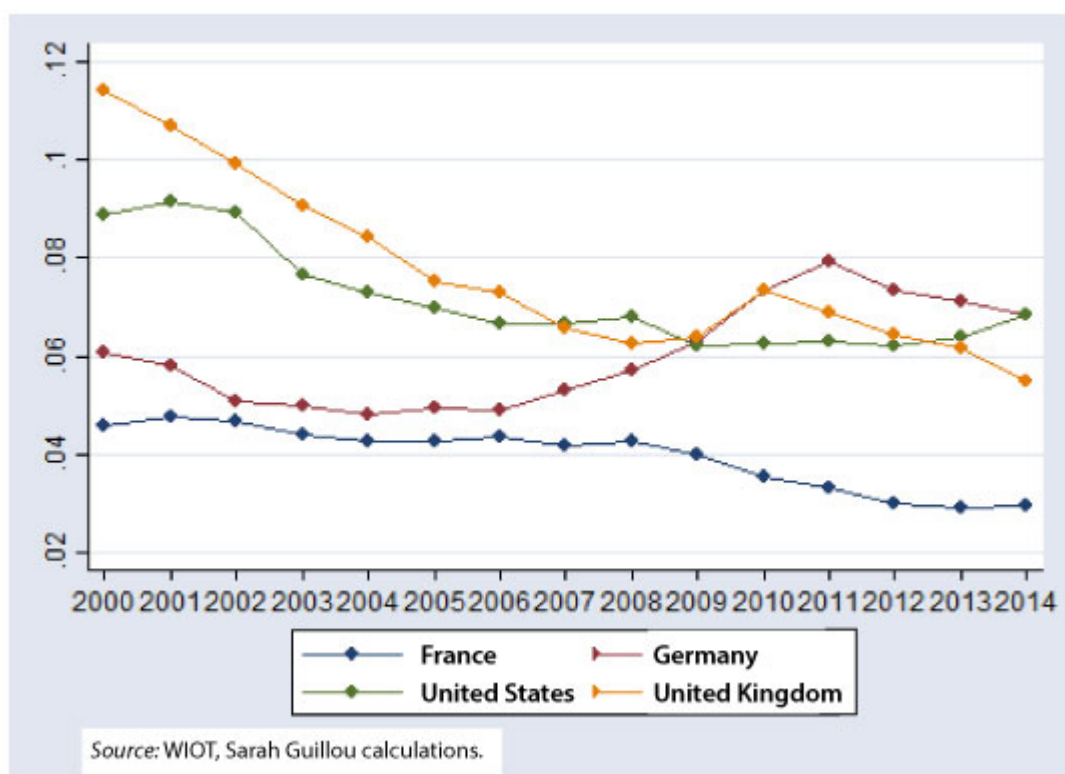
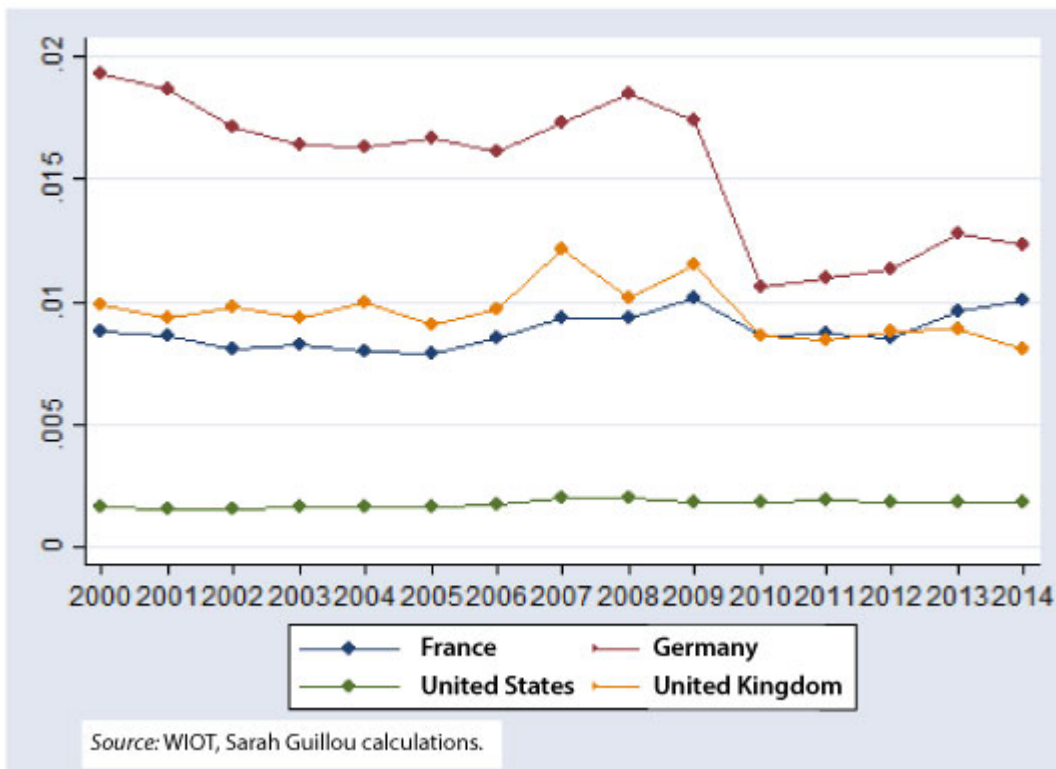


Figure 4. Consumption of digital publishing intermediaries of imported services (per 1000 of value added)



As a result, investment in software and databases would be mainly the result of in-house production, whose capital asset value (recorded as GFCF) is determined by the companies themselves. Should we conclude that GFCF is overvalued? This is a legitimate question. It calls for more specific investigation by investor and consumer sectors in order to assess the extent of overvaluation relative to economies comparable to France.

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Which new path for raising labour productivity?

By [Bruno Ducoudré](#) and [Eric Heyer](#)

The industrialized countries are experiencing what seems to be a persistent slowdown in the growth of labour productivity since the second oil shock. This has been the subject of a great deal of analysis in the economic literature [\[1\]](#) that considers the possible disappearance of the growth potential of the developed economies, and consequently their inability to return to a level of activity in line with their pre-crisis trajectories. In other words, could the industrialized countries have entered a phase of “secular stagnation”, making it more difficult to reduce public and private debt? The exhaustion of gains in productivity would also modify any diagnosis made of their conjunctural situation, particularly as regards their labour markets.

Trend productivity gains are inherently unobservable; it is therefore necessary to decompose observed productivity into a trend component and a cyclical component that is linked to the more or less rapid adjustment of employment to changes in economic activity (the productivity cycle). In a [recent study published in the Revue de l'OFCE](#), we seek to highlight the slowdown in trend productivity gains and the productivity cycle in six major developed countries (Germany, Spain, the

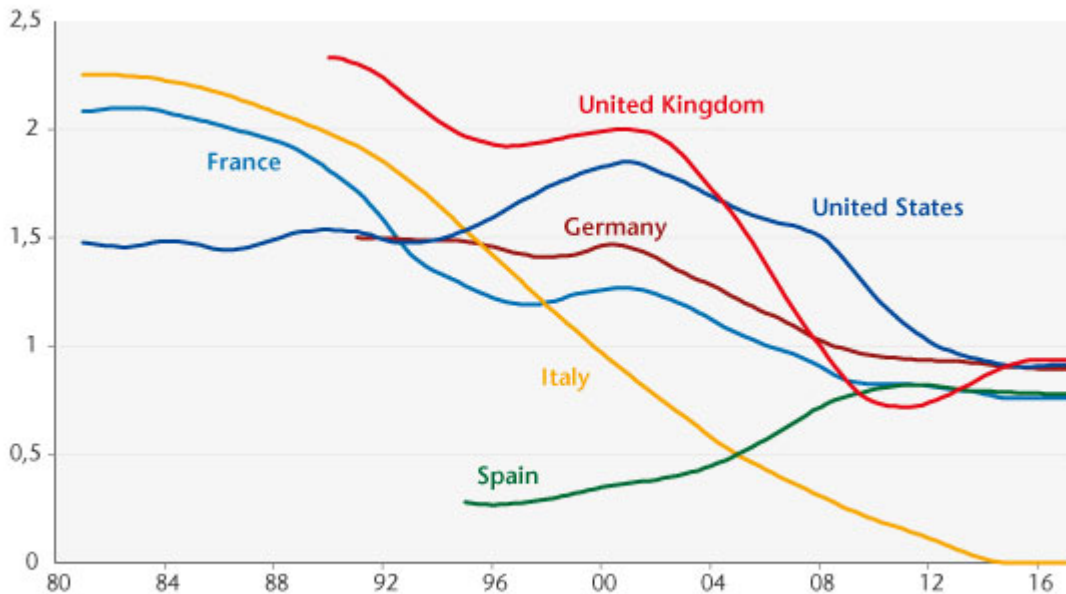
United States, France, Italy and the United Kingdom) using an econometric method – the Kalman filter – so as to allow the estimation of an equation for labour demand based on explicit theoretical underpinnings and the estimation of trend productivity gains.

After reviewing the various possible explanations for the slowdown described in the economic literature, we present the theoretical modelling of the equation for labour demand and our strategy for an empirical estimation. This equation, derived from a CES-type production function[\[2\]](#), is based on the assumption of maximizing the profit of firms in monopolistic competition and on the assumption of a stable long-term capital-to-output ratio. This makes it possible to break down the trend and cyclical components in a single step, but makes productivity gains depend solely on labour[\[3\]](#).

The existing empirical studies usually rely on a log-linear estimate of the productivity trend and introduce fixed-date trend breaks[\[4\]](#). We propose an alternative method that consists of writing the employment equation in the form of a state-space model representing the underlying productivity trend. This model has the advantage of allowing a less bumpy depiction of trend productivity gains since it doesn't rely on ad-hoc break dates.

We then evaluate the new growth path for labour productivity and the productivity cycle for the six countries considered. Our results confirm the slowdown in trend productivity gains (Figure 1).

Figure 1. Labour productivity growth



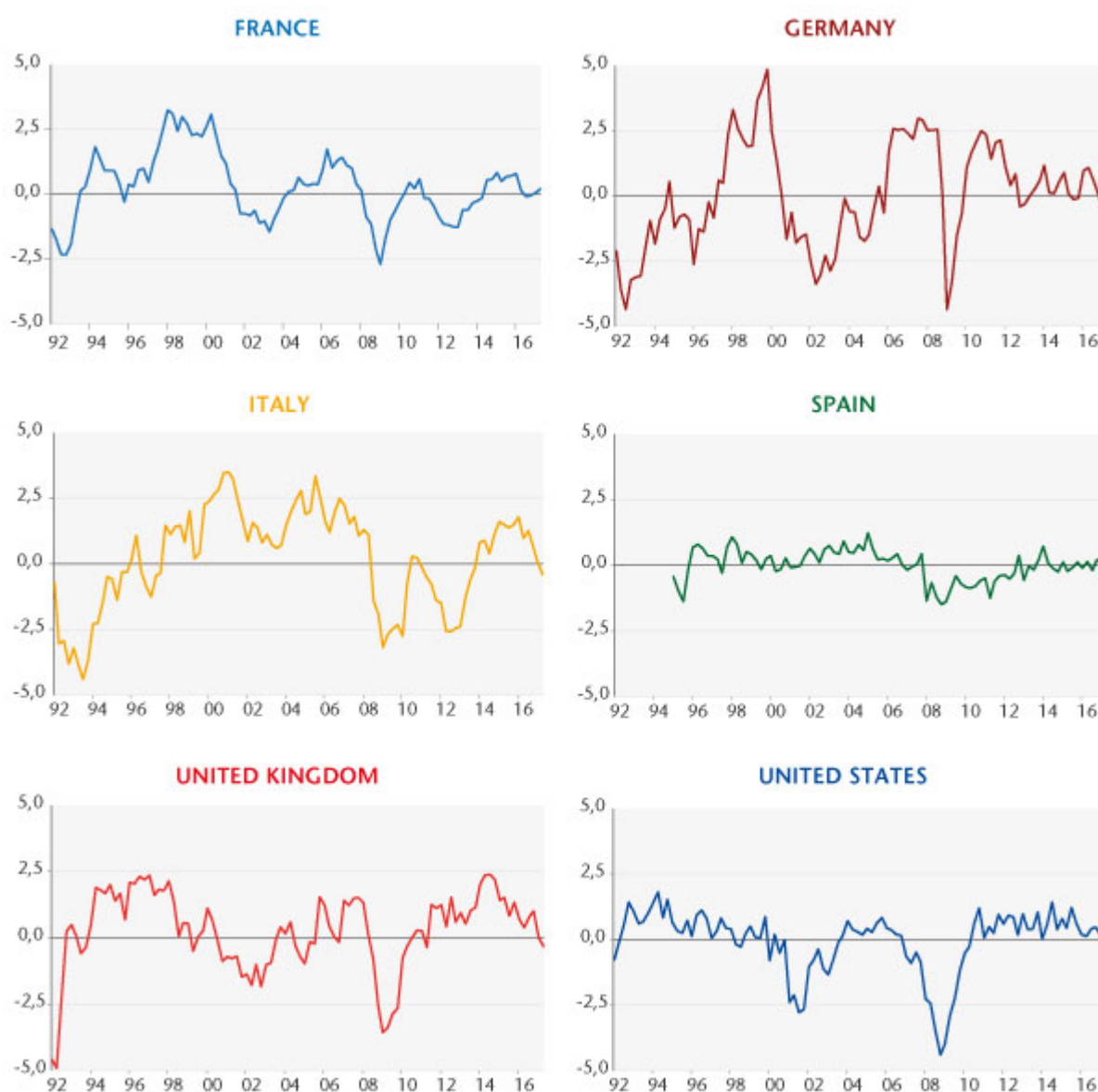
Note: year-on-year hourly trend productivity gains.
Source: authors' calculations.

The growth rate for trend productivity for five countries (France, Germany, Italy, the United States and the United Kingdom) shows a slow decline since the 1990s. Trend productivity, estimated at 1.5% in the United States in the 1980s, increased during the 1990s with the wave of new technologies, then gradually decreased to 0.9% at the end of the period. For France, Italy and Germany, the catch-up stopped during the 1990s (during the 2000s for Spain), even though the slowdown in trend productivity gains was interrupted briefly between the mid-1990s and the early 2000s. Leaving aside Italy, whose estimated trend productivity gains were zero at the end of the period, the trend growth rates converged in a range of between 0.8% and 1% in annual trend productivity gains.

The estimated productivity cycles are shown in Figure 2. They show the greatest fluctuations for France, Italy and Germany and the United Kingdom. A calculation of the average times for the adjustment of employment to demand indicates an adjustment period of 4 to 5 quarters for these countries. The cycle fluctuates much less for the United States and Spain,

indicating that the speed of adjustment of employment to economic activity is faster for these two countries, which is confirmed by the average time of adjustment to demand (respectively 2 and 3 quarters). Finally, the estimates indicate globally that the productivity cycle will have closed for each of the countries considered in the second quarter of 2017.

Figure 2. Productivity cycles



Source: authors' calculations.

[1] See, for example, A. Bergeaud, G. Clette and R. Lecat, 2016, "[Productivity Trends in Advanced Countries between 1890 and 2012](#)", *The Review of Income Wealth*, (62: 420-444) and N.

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[3] The equation for labour demand is based on a production function and an assumption of neutral technical progress in Harrod's sense.

[4] See M. Cochard, G. Cornilleau and E. Heyer, 2010, "[Les marchés du travail dans la crise](#)" [Labour Markets in Crisis], *Économie et Statistique*, (438: 181-204) and B. Ducoudré and M. Plane, 2015, "[Les demandes de facteurs de production en France](#)" [The Demand for Production Factors in France], *Revue de l'OFCE* (142: 21-53).

The euro zone: A general recovery

By [Christophe Blot](#)

This text is based on the 2017-2019 outlook for the global economy and the euro zone, a full version of which is available [here](#).

The euro zone has returned to growth since mid-2013, after having experienced two crises (the financial crisis and the sovereign debt crisis) that led to two recessions: in 2008-2009 and 2011-2013. According to [Eurostat](#), growth accelerated during the third quarter of 2017 and reached 2.6%

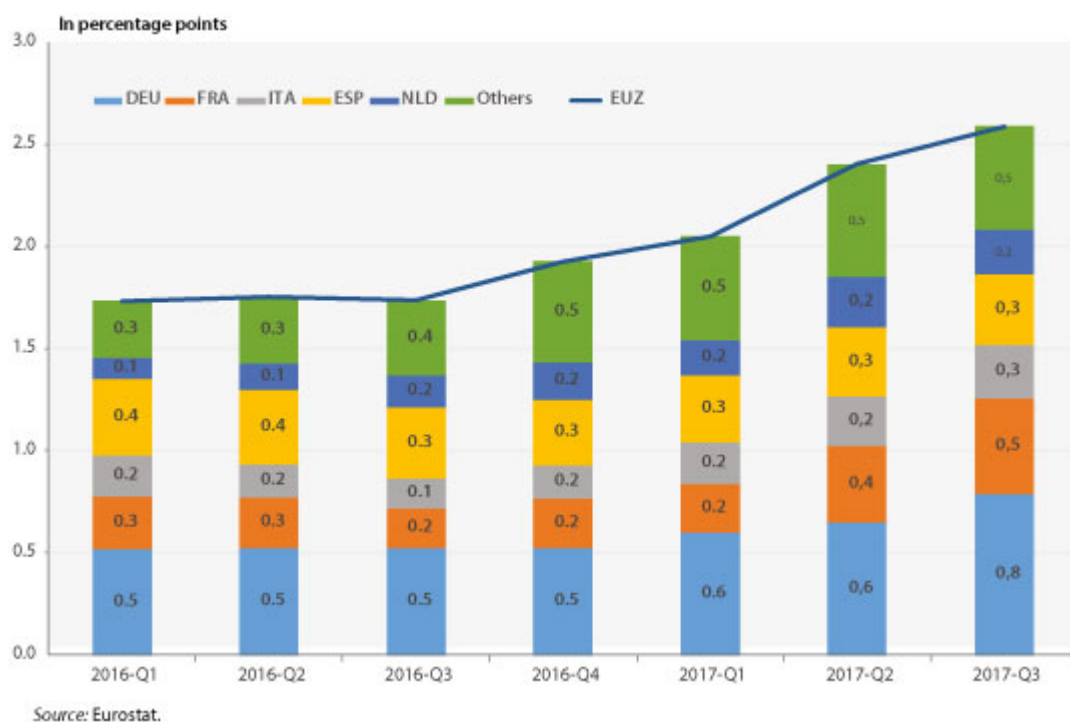
year-on-year (0.6% quarter-on-quarter), its highest level since the first quarter of 2011 (2.9%). Beyond the performance of the euro zone as a whole, the current situation is marked by the generalization of the recovery to all the euro zone countries, which was not the case in the previous phase of recovery in 2010-2011. Fears about the sustainability of the debt of the so-called peripheral countries were already being reflected in a sharp fall in GDP in Greece and the gradual slide into recession of Portugal, Spain and a little later Italy.

Today, while Germany remains the main engine of European growth, all of the countries are contributing to the accelerating recovery. In the third quarter of 2017, Germany's contribution to euro zone growth was 0.8 point, a faster pace than in the previous two quarters, reflecting the vitality of the German economy (see the Figure). However, this contribution was even greater in the first quarter of 2011 (1.5 points for growth of 2.9% year-on-year). This catching-up trend is continuing in Spain, which in the third quarter of 2017 had quarterly growth of 3.1% year-on-year (0.8% quarter-on-quarter), making a 0.3 point contribution to the euro zone's overall growth. Above all, activity is accelerating in the countries that up to now had been left a little bit out of the recovery, particularly in France and Italy, which contributed respectively 0.5 and 0.3 points to the growth of the zone over the third quarter^[1]. Finally, the recovery is taking root in Portugal and Greece.

This renewed dynamism of the European economy is due to several factors. Monetary policy is still very expansionary, and the securities purchases being carried out by the Eurosystem help to keep interest rates low. Credit conditions are favourable for investment, and the access to credit for SMEs is being loosened up, especially in the countries that were hit hardest by the crisis. Finally, fiscal policy is generally neutral or even slightly expansionary.

The current optimism must not nevertheless hide the scars left by the crisis. The euro zone unemployment rate is still higher than its pre-crisis level: 9% against 7.3% at the end of 2007. The level still exceeds 10% of the active population in Italy, 15% in Spain and 20% in Greece. The social consequences of the crisis are therefore still very visible. These conditions justify the need to continue to support growth, particularly in these countries.

Figure. The contributions to growth in the euro zone



Is the recovery on the right path?

Analysis and Forecasting Department

This text is based on the 2016-2018 outlook for the world economy and the euro zone, a full version of which is

available [here](#) [in French].

The growth figures for 2016 have confirmed the picture of a global recovery that is gradually becoming more general. In the euro zone, which up to now had lagged behind, growth has reached 1.7%, driven in particular by strong momentum in Spain, Ireland, the Netherlands and Germany. The air pocket that troubled US growth at the start of the year translated into slower GDP growth in 2016 than in 2015 (1.6% vs. 2.6%), but unemployment has continued to decline, to below the 5% threshold. The developing countries, which in 2015 were hit by the slowdown in the Chinese economy and in world trade, picked up steam, gaining 0.2 point (to 3.9%) in 2016.

With GDP growing at nearly 3%, the world economy thus seems resilient, and the economic situation appears less gloomy than was feared 18 months ago – the negative factors have turned out to be less virulent than expected. The Chinese economy's shift towards a growth model based on domestic demand has led not to its abrupt landing but to a controlled slowdown based on the implementation of public policies to prop up growth. Even though the sustainability of Greece's debt has still not been resolved, the crisis that erupted in the summer of 2015 did not result in the disruption of the monetary union, and the election of Emmanuel Macron to the presidency of the French Republic has calmed fears that the euro zone would break up. While the question of Brexit is still on the table, the fact remains that until now the shock has not had the catastrophic effect some had forecast.

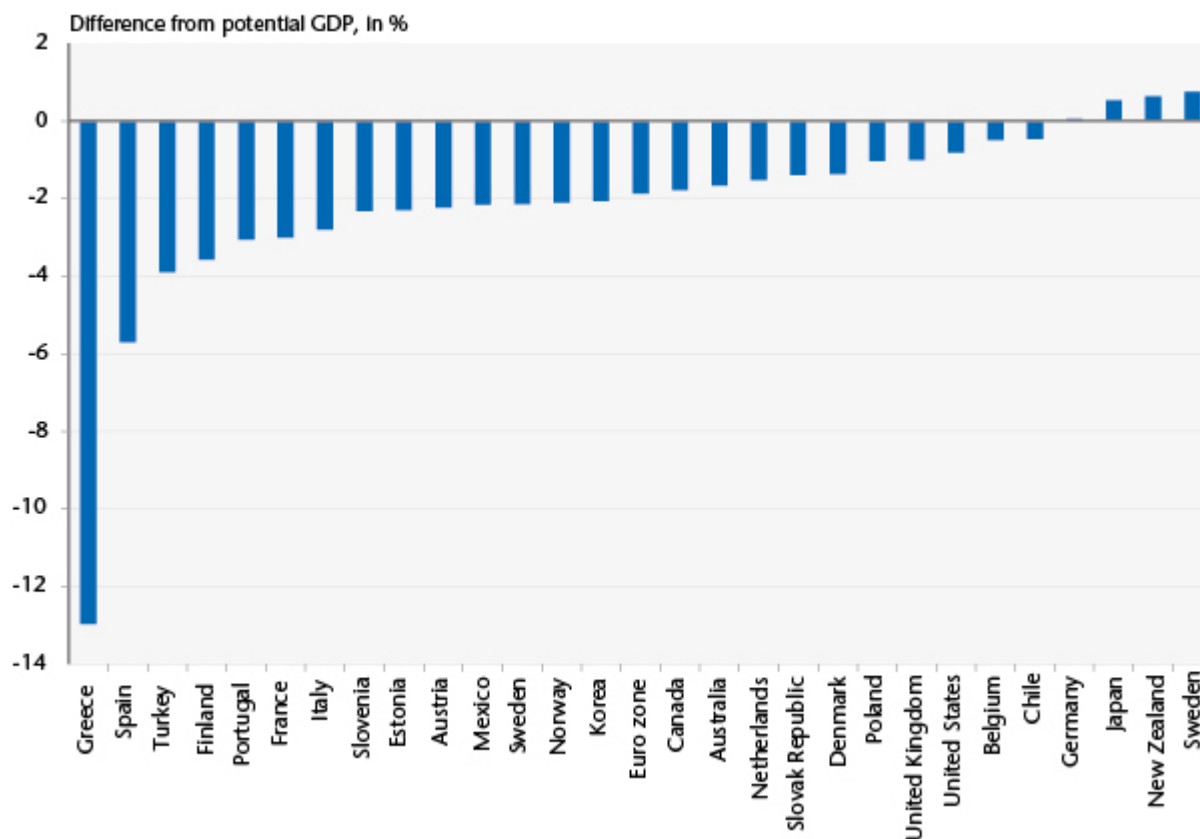
This pattern is expected to continue in 2017 and 2018 as a result of monetary policies that will continue to boost economic activity in the industrialized countries and somewhat scaled down fiscal efforts. US fiscal policy should become even more expansionary, allowing for a rebound in growth, which should once again surpass 2% in 2018. While oil prices have recently risen, they are not expected to soar, which will limit the negative impact on household purchasing power and

business margins. The rise should even revive the previously moribund rate of inflation, thereby lowering the deflationary risk that has hovered over the euro zone. Pressure on the European Central Bank to put an end to unconventional measures could mount rather quickly.

Although the recovery process is consolidating and becoming more widespread, output in most of the developed economies is still lagging behind in 2016, as is illustrated by the gap in output from the potential level, which is still negative (Figure). This situation, which contrasts sharply with the past cyclical behavior of economies as GDP swung back towards its potential, raises questions about the causes for the breakdown in the growth path that has been going on for almost ten years now. One initial element in an explanation could be the weakening of potential GDP. This could be the result of the scale of the crisis, which would have affected the level and / or growth of the supply capacity of the economies due to the destruction of production capacity, the slowdown in the spread of technological progress and the de-skilling of the unemployed.

A second factor would be the chronic insufficiency of demand, which would keep the output gap in negative territory in most countries. The difficulty in once again establishing a trajectory for demand that is capable of reducing underemployment is related to the excessive indebtedness of private agents prior to the recession. Faced with swelling liabilities, economic agents have been forced to cut their spending to shed debt and restore their wealth. In a situation like this, unemployment or underemployment should continue to fall, but this will take place more slowly than in previous recovery phases. Ten years after the start of the Great Recession, the global economy has thus still not resolved the macroeconomic and social imbalances generated by the crisis. The recovery is therefore well under way, but it is still not fast enough.

Figure: Output gaps in 2016



Sources : OECD, *Economic Outlook*, November 2016, OFCE Calculations.

Europe's competition policy – or extending the domain of integration

By [Sarah Guillou](#)

The principle of “fair competition” was set out in the general principles of the Preamble to the Treaty of the European Communities (TEC) in 1957, as was the commitment that the Member States will enact policies to ensure this fairness. Competition policy – overseen by the Competition Directorate – is the benchmark policy for market regulation, but also for industrial strategy and, more recently, for fiscal regulation.

The need for a competition policy flows directly out of Europe's project to establish a common market, and numerous attempts at industrial policy have come to grief on the altar of Articles 81 to 89 of the TEC (and now Articles 101 to 109 of the Treaty on the Functioning of the European Union), which establish the framework for competition. In practice, the two policies are clearly complementary in the European Union, and the space granted to the former develops thanks to the set of exceptions to the latter.

Competition as a general framework in the European Union

As a foundation of the common market, respect for and controls on market competition is a general principle underlying all European policy. More fundamentally, competition can be considered a *constitutional* principle of the European Union. It makes it possible to define the European space, the common space whose existence depends on controls on competition between States. Europe's competition law is therefore developed first of all to control economic competition between the States. The aim is to prevent the States from adopting policies that create benefits for companies in their own territory and discriminate against companies from other States.

Within the European Commission, the Competition Directorate therefore has a significant role and responsibility. Supervision of competition is exercised through the control of mergers and cartels on the one hand, and the control of State aid on the other. To monitor cartels or any other abuse of a dominant position, competition law is exercised *ex post* to protect consumers and competitors from predatory behavior and abusive pricing. Control over concentration developed generally from the second half of the 1980s, in synch with the increase in the size of mergers and the opportunities for European rapprochements, which resulted from the success of the single market. Moreover, mergers and acquisitions are increasingly the subject of negotiations between the companies

involved and the European Commission and conclude with a transfer of activity. For example, the acquisition of Alstom's energy division by General Electric in 2015 was accompanied by the sale of part of the gas turbine business to the Italian company Ansaldo Energia. This control has given the Commission an active role in the structuring of the market, which amounts to a super power, but since the 1990s, fewer than 1% of notifications concerning concentrations have led to a veto by the Commission.

European supervision of aid has been relatively continuous since it presupposes a permanent exercise of supervision of "undistorted competition" in the European area. It is a tool both to control any distortions of competition created by a Member State granting advantages to its companies and to fight against a race to "who grants most" in terms of subsidies. Thus, Article 87 (1) of the Treaty establishing the European Community states that State aid is considered to be incompatible with the common market, and Article 88 gives the Commission a mandate to monitor such aid. But Article 87 also specifies the criteria the Commission uses to investigate aid.

Business subsidies are subject to the Commission's authorization if they exceed 200,000 euros over three years and they are not included in the set of exemptions decided by the EU. The majority of aid investigated is authorized (almost 95%). As for France, the percentage of aid disallowed out of the amount granted is in line with the European average. There have of course been some noteworthy decisions, such as when EDF was required to repay 1.4 billion euros in 2015 following tax assistance dating back to 1997. But the Commission also recently allowed the French State to acquire an interest in the capital of PSA Peugeot Citroën (2015). Similarly, the Commission authorized the public-private partnership underpinning the construction of the Hinkley Point nuclear power plant in Great Britain.

Some recent developments in the exercise of this control

should be noted. The regulation of State aid has been used to examine the provisions of tax agreements negotiated by companies with certain governments such as Ireland, Luxembourg and the Netherlands. By favouring some companies to the detriment of their competitors, these tax agreements create not only distortions in competition but also competition between States to attract the profits and jobs of the large multinationals. For example, in October 2016, the Commissioner for Competition, Margarethe Vestager, described the tax agreement that Apple had received in Ireland as unauthorized State aid, and accordingly required the Irish government to recover 13 billion euros from Apple. This use of the regulatory power over State aid constitutes a turning point in competition policy, in that it recalls that the object of competition policy is to ensure that competition between States does not go against the notion of a common market.

Industrial policy is expressed in the exceptions to competition policy

Note that while competition policy is well defined at European level, there are many meanings of industrial policy in Europe, almost as many as there are members. This makes it more difficult to find policy compromises prior to the definition of such a policy. Moreover, the institutional logic and the economic logic are not the same. As already noted, competition policy has a strong institutional anchorage, which is not the case with industrial policy. Even though the European Coal and Steel Community was at the origin of the European Community, industrial policy is not at the heart of the European project. Moreover, the economic logic is different: competition policy is defined with reference to space (the relevant market), whereas industrial policy can be understood only by integrating the life cycle of companies and industries, and therefore in reference to each country's industrial history. In a shared sense, industrial policy can be defined as policy that is aimed at orienting an economy's sectoral and / or

technological specialization. It is therefore easy to grasp the dependence of industrial policy on national preferences. The tool favoured by the States to express this policy is aid to companies, whether directly or indirectly.

State aid is classified according to 15 objectives, ranging from “preservation of the heritage” to aid for “research and development and innovation”. For the EU as a whole, the three categories that are largest as a percentage of total aid are: environmental protection (including aid for energy savings), regional aid, and aid for R&D and innovation. The amounts involved are far from negligible: in 2014, for example, 15 billion euros for France and 39 billion for Germany. A higher amount of aid in 2014 was due largely to an increase in aid for renewable energy as a result of the adoption in 2014 of revisions on the rules on this type of aid. Germany is the country that contributed the most to this increase. Support for renewable energies is indeed at the heart of its industrial policy.

European industrial policy develops as exemptions to the application of control on aid and hence to competition policy. These exemptions are set out in the general regulations on exemptions by category. There are many Block Exemptions, which revolve around the following five themes: innovation and R&D, sustainable development, the competitiveness of EU industry, job creation, and social and regional cohesion. It can be seen in this set of exemptions that supervision is also the expression of Europe’s policy choices on orienting public aid, and thence directing public resources towards uses that are in line with these choices. These choices are the result of a relative consensus on the future of the European economy which shapes industrial policy. The largest categories of aid are research and development and environmental protection. In a word, the European economy will be technological and sustainable. This is a policy of orientation and not a policy of resources, and it takes shape within the overarching

framework of the policy on competition.

What future for Europe's competition policy?

It seems that, given the primacy of competition policy and its foundational role for Europe's union, competition policy is the conductor of microeconomic policy. It has, up to now, proved capable of adapting. Thus, in compliance with the European project, economic constraints and societal orientations have led to changes in the definition of exemptions on the control of aid, which have allowed for the expression of industrial policy. Similarly, it has seized upon the fiscal hyper-differentiation between certain States, which sharply contravened European integration and the common market.

Competition policy must not be weakened in authority or scale, but it must retain its capacity to adapt both to industrial orientations and to the deployments of Member States' strategies on competition with each other. It is also an essential counter-power to the growing strength of the multinationals, and governments must support it in this sense rather than becoming the mouthpieces of their national champions.

François Hollande's five years in office: Stagnation or recovery?

By OFCE

The five-year term of French President Francois Hollande has

been marked by serious economic difficulties, but also by some signs of improvement in the last year of his mandate. Overall, France experienced low growth from 2012 to 2014, mainly due to the fiscal consolidation policy, with moderate growth after that (see: [OFCE, Policy Brief, no2, September 5th, 2016](#)).

The scale of the fiscal shock at the start of Hollande's mandate, when the government underestimated the negative impact on growth, proved to be incompatible with a fall in unemployment during the first half of the mandate.

The effort to improve France's public finances involved a major fiscal adjustment, even though the target of a 3% public deficit was put off till the end of Hollande's term in office. According to the calculations of the European Commission, France's structural balance (i.e. the balance adjusted for cyclical effects) will have improved by 2.5 points over the 2012-2016 period. This effort did not however prevent the public debt from reaching a historic peak and from diverging significantly from the level in Germany.

Fiscal consolidation in France and in Europe had a marked negative impact, amounting to 0.8 point per year on average between 2012 and 2017. The simultaneity of the austerity policies enacted in Europe amplified their recessionary impact by depressing domestic demand, but also external demand.

The economic policy of the governments led by Ayrault and Valls was initially marked by a significant period of rising taxation, on both companies and households, followed by a shift towards a supply policy in 2014. This policy, embodied in the Responsibility Pact and the CICE tax credit, is bearing fruit late in Hollande's term, as business margins improve, although household purchasing power and short-term growth have been hurt.

After a period marked by a significant downturn in business margins, they picked up over the first four years of the five-

year term by the equivalent of 1 point in added value thanks to tax measures, and one additional point due to lower oil prices. The profit margin in industry even reached a level comparable to the historical records of the early 2000s.

Based on our forecasts for the five-year mandate as a whole, ILO-measured unemployment will have increased by about 100,000 people, despite the creation of 720,000 jobs, due to the lack of growth, combined with an increase in the labour force.

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.

Small recovery after a big crisis

By the Analysis and Forecasting Department

[This text summarizes the 2016-2017 outlook for the global economy and the euro zone. Click here to consult the complete version \[in French\].](#)

Global growth is once again passing through a zone of turbulence. While growth will take place, it is nevertheless being revised downwards for 2016 and 2017 to 2.9% and 3.1%, respectively. The slowdown is first of all hitting the emerging countries, with the decline in Chinese growth

continuing and even worsening (6.1% anticipated for 2017, down from 7.6% on average in 2012-2014). The slowdown in Chinese demand is hitting world trade and fuelling lower oil prices, which in turn is exacerbating the difficulties facing oil and commodity producers. Finally, the prospect for the normalization of US monetary policy is resulting in a reflux of capital. The dollar is appreciating even as the currencies of the emerging countries of Asia and Latin America are depreciating. While the industrialized countries are also suffering from the Chinese slowdown through the demand channel, growth is resilient there thanks to falling oil prices. The support provided by monetary policy is being cut back in the US, but is strengthening in the euro zone, keeping the euro at a low level. Countries are no longer systematically adopting austerity policies. In these conditions, growth will slow in the US, from 2.4% in 2015 to 1.9% in 2016 and then 1.6% in 2017. The recovery will pick up pace slightly in the euro zone, driven mainly by the dynamism of Germany and Spain and the improved outlook in France and Italy. For the euro zone as a whole, growth should come to 1.8% in 2016 and 1.7% in 2017. This will push down the unemployment rate, although by year-end 2017 it will still be 2 points above its pre-crisis level (9.3%, against 7.3% at year-end 2007).

While the United States seems to have avoided the risk of deflation, the euro zone is still under threat. Inflation is close to zero, and the very low level of expectations for long-term inflation reflects the ECB's difficulty in regaining control of inflation. Persistent unemployment indicates some continuing shortcomings in managing demand in the euro zone, which has in fact been based entirely on monetary policy. While the ECB's actions are a necessary condition for accelerating growth, they are not sufficient, and must be supplemented by more active fiscal policy.

At the level of the euro zone as a whole, overall fiscal

policy is neutral (expansionary in Germany and Italy in 2016 but restrictive in France and even more so in Greece), whereas it needs to be more expansionary in order to bring unemployment down more rapidly and help to avert deflationary risks. Furthermore, the continuing moderate growth is leading to the accumulation of current account surpluses in the euro zone (3.2% in 2015). While imbalances within the euro zone have been corrected to some extent, this mainly took place through adjustments by countries in deficit prior to the crisis. Consequently, the surplus in the euro zone's current account will eventually pose risks to the level of the euro, which could appreciate once the monetary stimulus ends, thereby slowing growth.

Table. Outlook for world growth

Annual growth rate (%)

	Weight in the total(1)	GDP in volume		
		2015	2016	2017
DEU	3,7	1,4	1,9	1,6
FRA	2,6	1,2	1,6	1,6
ITA	2,3	0,6	1,2	1,0
ESP	1,6	3,2	3,3	2,4
EUZ	13,4	1,5	1,8	1,7
GBR	2,4	2,3	2,1	1,7
NPM(2)	2,4	3,8	3,1	3,2
UE 28	18,6	1,9	2,0	1,8
USA	17,2	2,4	1,9	1,7
JPN	4,8	0,5	0,7	0,4
Developed countries	44,5	1,9	1,7	1,6
RUS	3,6	-3,7	-1,0	1,0
CHN	14,9	6,9	6,3	6,1
Other Asian countries	16,6	5,2	5,2	5,4
Latin America	8,8	-0,4	-0,9	1,5
World	100	2,9	2,9	3,1

(1) Weight according to GDP and PPP estimated by the IMF for 2008.

(2) Poland, Hungary, Czech Republic, Romania, Bulgaria and Croatia.

Sources: IMF, OECD, national sources, OFCE calculations and forecast, April 2016.