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FRANCE

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September 6, 2017

Approved By
European Department

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A REVIEW OF CAPITAL TAXATION IN FRANCE¹

The government's planned tax reforms are an important opportunity to make capital taxation in France more efficient and growth friendly. The current system is characterized by a range of distortions and inefficiencies. The corporate income tax (CIT) regime features a high statutory rate but low revenue productivity, as well as a bias toward debt financing, ineffective size-dependent regimes, and inefficient tax incentives. Profit-insensitive taxes are comparatively high. Anti-tax-avoidance rules are strong, but risks to outbound profit shifting remain. Tax uncertainty is another concern. At the individual level, the system of taxing wealth and capital income is complex, with distortions from differential taxation across savings instruments. To address some of these issues and make the tax system more supportive of growth and job creation, the government plans to reduce the CIT rate, further cut the labor tax wedge, unify taxes on capital income, and narrow the wealth tax. Staff's analysis suggests that complementing these reforms with measures to remove inefficient tax incentives, further reduce the debt bias, address disincentives to company growth, and streamline the taxation of long-term savings could enhance their impact on competitiveness, revenues, and growth.

A. Introduction

- 1. Capital tax reform has become an important element of the agenda of France's newly elected government.** Under the previous administration, the top headline rate of the corporate income tax was scheduled to be gradually lowered from 33.3 percent in 2017 to 28 percent by 2020, following a broader international trend. The Macron-appointed government announced a further reduction to 25 percent by 2022. Additionally, there are plans to exclude financial investment from the wealth tax, streamline the taxation of portfolio income (interest and dividends), and further reduce taxes on labor.
- 2. Capital tax reform is a balancing act.** International tax competition over mobile capital, together with increased sophistication of strategies to avoid capital taxes, create the challenge of protecting the domestic tax base while supporting competitiveness and respecting fiscal constraints. Identifying efficiency-enhancing options for reforming capital taxation is vital for balancing these objectives and constraints.
- 3. This paper analyzes key features of capital taxation in France, and key linkages to the broader tax system.** Although the focus is on the corporate income tax (CIT), which is generally the most important for efficiency and competitiveness, other taxes on capital are also discussed, linking the CIT to the broader capital tax system, including: taxes on real property and portfolio income of individuals, and taxes on wealth, inheritances and gifts of individuals.
- 4. The analysis suggests that there is significant scope for tax reforms that could enhance international competitiveness, efficiency, revenue productivity, and economic growth.** Section II describes the main elements of capital taxation in France. Section III discusses reform options for the CIT. Section IV links these options to possible reform avenues in the broader income tax system. Section V considers tax uncertainty, mostly in the CIT. Section VI concludes.

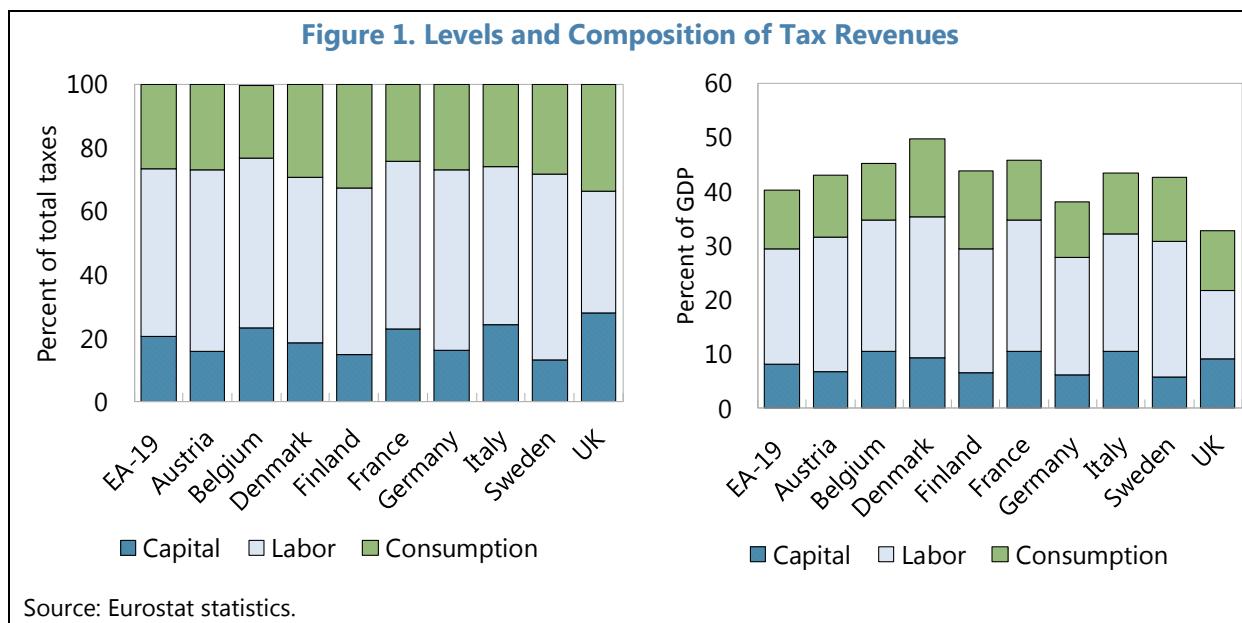
¹ Prepared by Shafik Hebous, Mario Mansour, Victoria J. Perry (all FAD), and Christophe J. Waerzeggers (LEG).

B. Key Features of Capital Taxation in France

5. France's tax ratio is higher than in most comparator countries, reflecting the large size of the public sector. At more than 56 percent of GDP, government spending is one of the highest in the OECD. The state plays an extensive role in the economy, especially in social protection and health. Accordingly, at 53 percent of GDP, the revenue ratio exceeds that of most comparator countries. Taxes are equivalent to 45½ percent of GDP, again one of the highest in the OECD.

6. The composition of tax revenues (the tax mix) is broadly similar to comparator countries, whereas tax-to-GDP ratios are relatively high, except for indirect taxes (Figure 1).

Both the level of capital taxes (about 10.8 percent of GDP), and their share of total tax revenues (23.5 percent), are higher than the EU average and Germany, but broadly in line with Italy and the UK. Labor taxes are high in relation to GDP, though their share in total tax revenue is comparable to many European countries. By contrast, the share of indirect taxes in total revenue is below that of most other countries.



7. A considerable portion of capital taxation is insensitive to income or profits, including taxes on personal wealth, real estate, and local taxation of businesses. The tax on capital is split into a tax on the capital stock (4.3 percent of GDP) and a tax on capital income (6.5 percent of GDP). The latter is decomposed as 2.8 percent from corporate income ("impôt sur les sociétés"; IS, referred to in this paper as CIT), 1.8 percent from household income, and 1.9 percent from self-employed income). The major local profit-insensitive tax on businesses is the territorial local contribution ("contribution économique territoriale"; CET), which consists of two components: a tax on rental value of fixed assets (buildings and lands), known as the "cotisation foncière des entreprises" (CFE), and an origin-based value-added tax known as the "cotisation sur la valeur ajoutée des entreprises" (CVAE). The CVAE is paid by companies with annual turnover above 500,000 euro, and its rate ranges from 0.5 to 1.5 percent depending on turnover. Additionally, there are turnover taxes and several local earmarked taxes on production.

The Corporate Income Tax Regime

8. The headline statutory CIT rate in France, currently one of the highest in the EU, is scheduled to be gradually reduced. The previous government had already foreseen a reduction from 33.3 percent in 2017 to 28 percent by 2020. The government recently appointed by President Macron has announced a further reduction, to 25 percent by 2022. In the current CIT regime, there are size-dependent rates: the first 75,000 euro of profits of SMEs² are taxed at 28 percent; above that, the headline rate of 33.3 percent applies; and enterprises with turnover below 7.63 million euro are subject to a reduced rate of 15 percent on profits up to 38,120 euro.

9. The corporate tax base in France is broadly consistent with international practice, but features France-specific provisions. The French CIT is a territorial tax system—i.e., foreign-source income is generally not taxed and foreign-source losses cannot be deducted against income earned in France. As in most countries, taxable profit is, broadly, total income (i.e., business and capital income) minus qualified business expenses. Fixed assets depreciate over their lifespan, but with some exceptions; e.g., company cars can be depreciated up to a value of 18,000 euro. There is an enhanced depreciation regime of 40 percent of the acquisition cost of certain equipment (used primarily in manufacturing) ordered before April 14, 2017. Losses can be carried forward indefinitely, but only up to one million euro plus 50 percent of the profits over one million euro. Under certain conditions, losses up to one million euro can also be carried backward for one year. Generally, empirical evidence finds that limitations to loss offset significantly reduce the level of investment (Dressler and Overesch 2013), e.g., because of discouraging entrepreneurs from undertaking risk, which is vital for innovation and growth (IMF, 2016a).

10. There are several costly tax expenditures under the CIT. The largest two tax expenditures are: (i) the competitiveness and employment tax credit (“crédit d’impôt compétitivité emploi”, CICE), which amounts to 7 percent of the gross payroll, up to 2.5 times the national minimum wage in the preceding year; and (ii) the R&D tax credit (“crédit d’impôt recherche”; CIR), which amounts to 30 percent of qualified R&D expenses up to 100 million euro, and 5 percent above this threshold.³ Both the CICE and CIR are refundable. Other tax expenditures include: a reduced CIT rate of 15 percent on income from qualified patents and know-how assets (“IP box” regime); the Young Innovative Enterprise (“jeune entreprise innovante”; JEI) regime, which exempts startups (businesses less than eight years old) from the CIT in the first year of making taxable profits, followed by an exemption of 50 percent for the next year; startups under this scheme are also exempted from the CET and from employers’ social security contributions.

11. France has anti-tax avoidance rules covering transfer pricing, controlled-foreign companies (CFC), and limitation to interest deductibility. These are largely in line with the G20/OECD Base Erosion and Profit Shifting (BEPS) actions and the July-2016 EU Anti-Tax Avoidance

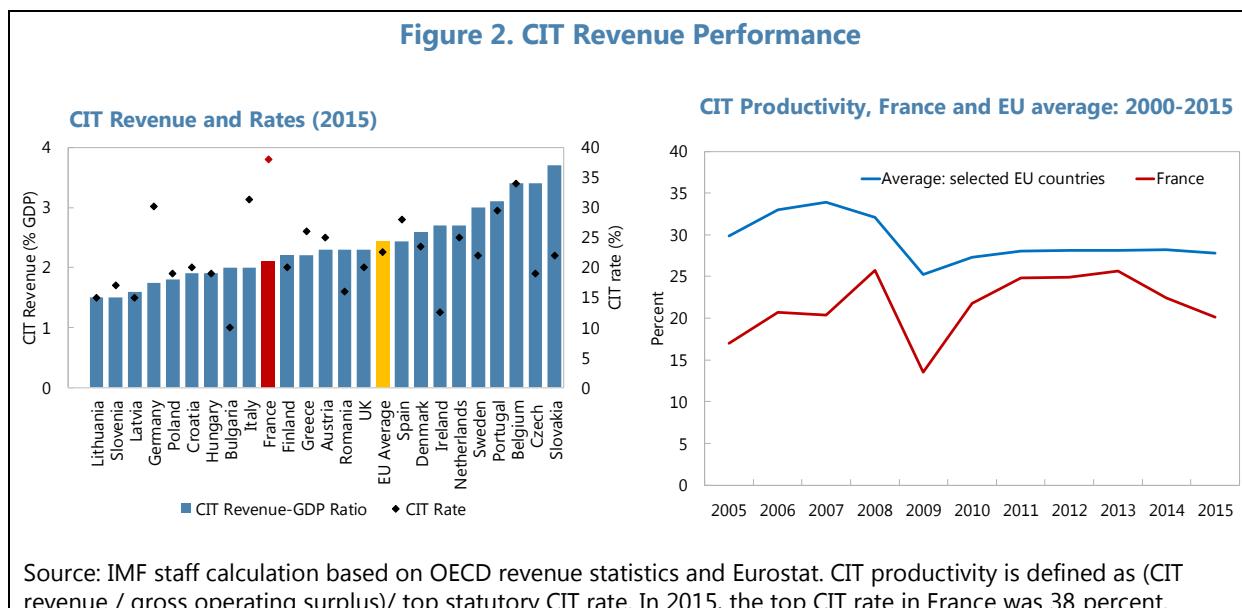
² These are enterprises with less than 250 employees and with annual turnover of less than 50 million euro or a balance sheet total of less than 43 million euro.

³ The range of qualified expenses includes wages of researchers (200 percent in the first two years of employment for those with a PhD degree), subcontracted and collaborative R&D expenses, R&D-related operating expenses including support staff, administrative expenses, and maintenance.

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Directive (ATAD) (Box 1). Deduction of interest expenses is subject to a multi-tier test including a maximum related-party debt-equity ratio of 1.5, and a ratio of net interest payment to EBITDA not exceeding 25 percent (see Annex 1 for detail). Ultimately, the deductible amount is capped at 75 percent of net interest payments exceeding 3 million euros, after the application of the specific limits. The disallowed interest deduction cannot be carried forward. In the case of a domestic group of companies, the cap applies to the consolidated tax result of the group. This disallowance rule, however, does not apply to banks.

12. The CIT revenue performance is comparatively weak in France. Despite imposing one of the highest statutory rates in the EU, CIT revenue—at around 2.1 percent of GDP—is lower than the EU average of 2.4 percent (Figure 2, left panel). CIT productivity—an indicator of its revenue performance expressed as the amount of revenue collected from 1 euro of gross operating surplus—has been consistently lower than comparators (Figure 2, right panel).



C. Options for Efficiency-Enhancing Reforms to Corporate Taxation

13. The key question regarding capital taxation in France concerns primarily the efficiency and productivity of capital taxes, arguably more so than the overall tax burden. Some important reforms to local capital taxes have been undertaken in the past decade, such as the introduction in 2010 of the CFE and the CVAE in lieu of a previous complex property tax ("taxe professionnelle").⁴ Still, the efficiency of these taxes could be further improved, for instance by consolidating local property taxes on companies into a single tax based on market values, and further reducing the number of local earmarked taxes on production.⁵

⁴ See Keen and Luzio (2008) for a more detailed review of local taxes.

⁵ Earmarking can carry significant costs as the value of one earmarked euro should be weighed against its value in alternative uses, which typically tend to generate higher social benefits.

14. The relatively weak CIT revenue performance is due to four factors: (i) tax incentives (notably, R&D incentives and size-dependent regimes, the CICE), (ii) outbound profit shifting, (iii) potentially, lower genuine profitability due to high business costs, and (iv) the deductibility of local taxes from the CIT base. The first and fourth factors are relatively easy to quantify, while there is more uncertainty around the revenue impact of the others.

Box 1. France's International Obligations and Commitments Regarding the CIT

France is committed to implementing the four Minimum Standards of G20/OECD BEPS actions. These are: countering harmful tax practices (particularly important for the French IP box), preventing tax treaty abuse, transfer pricing documentation, and improving tax treaty dispute resolutions. France has already largely implemented all 15 BEPS Actions. For example, the 2016 Finance Law implements country-by-country reporting in line with the transfer pricing documentation requirements. In addition, France has several obligations and commitments under EU law. Notable obligations in relation to the IS include the implementation of the Anti-Tax Avoidance Directive (ATAD), adopted on July 12, 2016. ATAD requires all Member States to implement five anti-tax abuse measures. The ATAD goes further than the BEPS four minimum standards. The following Table provides a summary:

ATAD Measures	BEPS Action/ Minimum Standard ?	France	Description
Interest limitation rule	Yes/No	Some differences ¹	France has a multi-step test including a maximum related-party debt-equity ratio of 1.5. Ultimately, the deductible amount is capped at 75 percent of net interest payments exceeding 3 million euro, after the application of specific limits. Banks are excluded. ATAD foresees an earning-stripping rule that denies interest deduction on intra-company loans if the ratio of net interest payments to EBITDA exceeds 30 percent. Unused deduction can be carried forward.
Controlled foreign company (CFC) rule	Yes/No	✓	CFC rules attribute profits of a non-resident controlled entity located in a non-EU country to a French resident if the foreign effective tax rate is lower than 50 percent of France's. If the CFC is in the EU, CFC rules may apply in the case of an artificial scheme to avoid taxes. Capital income from a CFC in a "non-cooperative" country is subject to withholding tax at 75 percent.
Hybrid mismatch rules rule	Yes/No	✓	This rule counters tax planning that exploits differences in countries' legal characterization of an entity or a financial instrument (leading to double deductions). The ATAD, which originally addressed arrangements within the EU, was extended in March 2017 to cover arrangements between EU and non-member states (ATAD II).
GAAR	No/No	✓	The French GAAR applies to arrangements that are "solely" tax driven as opposed to "principally" in the case of ATAD. It might need to be brought in line with the ATAD by December 31, 2018.
Exit taxation	No/No	✓	EU Member States shall apply an exit tax to prevent companies from avoiding tax in the state of origin by moving their tax residence or closing a permanent establishment. This tax safeguards against base erosion, rather than a source of revenues. France applies an exit tax.

¹ France will have until January 1, 2024 to conform to the ATAD if its current system is equally effective.

R&D Incentives

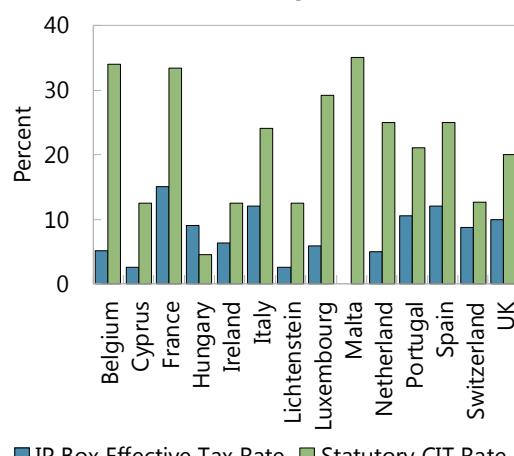
15. Well-designed and implemented R&D tax incentives can have a sizable impact on productivity. Where the social benefits from R&D investments exceed the private benefits from R&D, government intervention to correct for this positive externality is justified. Taxation can incentivize private R&D activities through the input side (in the form of an R&D tax credit or deduction), or the output side (in the form of a reduced tax rate on IP income). France has measures on both sides.

16. R&D tax deductions/credits tend to be more efficient than IP box regimes in stimulating domestic R&D investment. Empirical evidence suggests that one dollar spent by the government on R&D tax incentives, on average, increases domestic private R&D by one dollar, whereas one dollar spent on IP income can, at best, increase R&D by less than one dollar (IMF, 2016a; Dumont, 2015). Bloom et al. (2002) estimate that a 10 percent reduction in the cost of R&D increases the level of R&D by about 1 percent in the short-run and 10 percent in the long-run. In contrast, Griffith et al. (2014) estimate that IP regimes have resulted in lower revenues from IP in the Benelux countries and the UK. In addition, there are some more fundamental conceptual concerns with IP box regimes as they:

- *reward only success.* Successful R&D outputs are a function of many non-R&D related inputs (including management) that are not characterized by market failure—for which R&D subsidies would be wasteful;
- *are disconnected from the level of R&D expenditures.* The tax benefit from the IP box is proportional to the amount of qualifying IP income; i.e., two patents may generate the same income, thus receiving the same benefits from the IP regime despite having very different levels of R&D input; and,
- *cannot perfectly target the location of R&D.* There is a distinction between the legal ownership of patents (and know-how assets) and the location of R&D activities that led to the development of the patent. IP boxes can influence the location of the legal ownership of the know-how assets (within a multinational group) with little effect on domestic R&D investments. Essentially, large enterprises, particularly in the manufacturing sector, benefit the most from this scheme.

17. There is little evidence that the French IP box regime stimulates domestic R&D activities (Box 2). Not all EU countries adopt an IP box. The French tax rate of 15 percent on qualified IP income is relatively

Figure 3. Statutory CIT and IP Box Rates in Europe



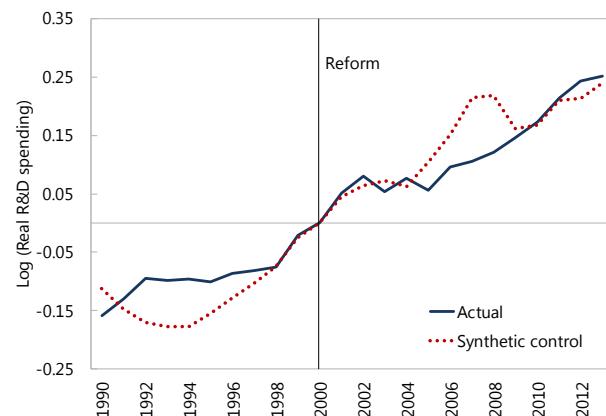
Source: Authors' calculations and IBFD.
Note: The French IP rate takes local taxes into account (Evers et al., 2015). Rates for Switzerland are for the canton of Nidwalden.

high,⁶ compared, for instance, to 2.5 percent in Cyprus, 5 percent in the Netherlands, and 4.5 percent in Hungary (Figure 3). This can explain the relatively low cost of the French IP box regime (about 300 million euro in 2016), although it is not clear whether this money is well spent (see staff's analysis in Box 2). A potential reform may be useful based on the European 2016 proposal to introduce a Common Consolidated Corporate Tax Base (CCCTB), which envisages a super deduction for R&D expenditures.⁷ If implemented, the CCTB would phase out IP regimes (Annex II).

Box 2. R&D Spending and the IP Box Regime in France: An Assessment Using the Synthetic Control Method

The challenge of assessing the impact of the IP Box regime on R&D spending is that the counterfactual is not observable—i.e., what would have happened to total domestic R&D spending had France not introduced the IP Box regime in 2000? This challenge can be addressed using a recent empirical technique—the synthetic control method (Abadie et al., 2010)—whereby the pre-IP Box R&D spending in France is replicated using a weighted average of the same variable in non-IP Box countries (called “control units”). In the exercise presented here, the source of the data on R&D is Eurostat, and the sample includes 12 non-IP Box countries as well as France. The weights are determined optimally by minimizing the distance between the French and the synthetic R&D spending using predicting variables that are typically used in the literature. These predictors are at the country-year level and include, e.g., GDP per capita, population, and FDI-GDP ratio. Having constructed a variable mimicking the French R&D spending before the reform (i.e., the synthetic control), the predicted evolution of the synthetic control after the reform gives a measure of the counterfactual R&D spending in France without the IP Box regime. The results show that the actual French R&D spending does not differ significantly from the synthetic R&D spending after 2000, suggesting that the IP Box regime was not successful in stimulating R&D activities.

Source: IMF Fiscal Monitor, April, 2016.



18. One option for improving the efficiency of tax incentives for innovation would be to abolish the IP box while reforming the design of R&D tax credits. France's CIR, with 15,245 beneficiary companies in 2013, costs 5.6 billion euro, which is about 10 percent of total CIT revenue (Cour des Comptes, 2016). In conjunction with other reform options that can lower the cost of employment and the cost of equity financing (as discussed in this paper), there is scope for reviewing the CIR to improve its targeting. In addition to the relatively generous qualification of expenses for the CIR, SMEs can benefit from a tax credit of 20 percent of innovation expenses excluding R&D expenses, e.g., expenses of developing a new product. Such size-dependent R&D credits, as with size-dependent regimes in general, tend to be inefficient.

⁶ The French IP regime was introduced in 2000. At that time, the tax rate of 15 percent effectively treated IP income as capital gains.

⁷ Under certain conditions regarding the design of the super deduction, and provided the IS has a single rate, the French tax credit could be consistent with the super deduction.

Size-Dependent CIT Regimes

19. Tax incentives targeted at SMEs are extensive by international comparison. These include the CIR, CII, and a reduced CIT rate (or even an exemption from the CIT). In addition, individual investors that invest, directly or indirectly through investment funds, in SMEs, benefit from a reduced wealth tax (a scheme known as "ISF-PME"). A medium-scale business can benefit from multiple special tax provisions through the entire chain. For example, a business borrowing to finance an R&D project, may benefit from interest deduction, a CIR tax credit (including skilled-labor employment costs), a CII tax credit,⁸ an employment tax credit (CICE), a size-dependent lower CIT rate (and possibly a lower rate from the IP box); and finally, the investors obtain a tax break on their income from this investment, within the ISF-PME or other shares saving plans.

20. The size-dependent tax incentives targeting SMEs are not only expensive but can also generate a “small-business trap”. For example, in relation to the tax rate, about one-third of companies subjected to the CIT in France have benefited in recent years from the reduced rate of 15 percent (Table 1). The budgetary cost of the reduced rate is estimated to be around 2,560 million euro annually. In addition to this revenue loss, such special regimes for small business generate a disincentive to firms' growth and open loopholes for tax planning, for instance by splitting the legal structure of a business to remain below the threshold. CPO (2016) discusses empirical evidence on this type of tax policy discontinuity.

Table 1. France: The Cost of Offering a Reduced CIT Rate of 15 Percent

	2013	2014	2015
Number of companies benefiting from the reduced rate of 15% (millions)	0.64	0.67	0.67
Number of companies subjected to the IS (millions)	1.9	1.9	2.0
Budgetary cost of the reduced rate (millions of euro)	2,550	2,550	2,560

Source: Cour des Comptes, 2016.

21. The Young Innovative Enterprise (JEI) regime appears to have economic benefits, and its cost is moderate. Targeting young rather than small business is more effective in promoting innovative entrepreneurship (IMF, 2016a). About 3,500 enterprises benefited from the JEI regime in 2015, and about 80 percent of them have less than 10 employees (Ministère de l'Économie et des Finances, 2016). The cost in 2015 was 170 million euros in social security contribution exemptions and 10 million euros in tax cuts. Firms participating in the regime had an 8 percent higher employment growth rate, higher survival rates, and generally paid higher wages than nonparticipants (Hallépée and Garcia 2012).

⁸ The CIR and CII are not additive; they cannot be claimed in relation to the same R&D expenses.

22. Options for reforming special tax regimes include:

- Adopting a single CIT rate eliminates the distortions mentioned above. The current plan to reduce the statutory rate further to 25 percent offers an opportunity to reconsider the cost-benefit of multiple CIT rates.
- Reviewing other size-dependent regimes including the SMEs' innovation tax credit (CII).
- Periodically assessing the cost-effectiveness of the JEI regime.

Outbound Profit Shifting

23. Lowering the CIT rate will decrease the incentive for outbound profit shifting. A high statutory rate encourages French and foreign-owned multinationals to shift profits from France to low tax jurisdictions. The empirical literature suggests that the semi-elasticity of profit with respect to the CIT rate is 0.8; i.e., a 10 percentage-point higher tax rate in an affiliate (compared to the weighted average in the multinational group) leads to a decline of its pre-tax profits by 8 percent (Heckemeyer and Overesch, forthcoming). Dharmapala (2014) suggests that profit shifting elasticities are somewhat smaller.

24. Existing commitments and obligations of EU Member States already tackle profit shifting *within* the EU, but not to other countries. France is committed to the EU Code of Conduct for Business Taxation that restrains Member States from engaging in "harmful tax competition". EU state aid rules prohibit Member States from offering government support, including through the tax system, that gives a company an advantage over its competitors in the EU. Cases can be simultaneously within the ambit of the Code of Conduct and state aid rules. The proposed CCCTB, if implemented, would be expected to eliminate profit shifting within the EU. However, it may intensify CIT rate competition, reallocation of factors of production, and perhaps regulatory competition. Incentives to shift profits out of the EU would remain, and may even become more important.

25. Despite tight anti-tax avoidance rules in France, the observed bilateral FDI pattern suggests that profit shifting remains a risk to CIT revenue. About 44 percent of inbound FDI in France comes from Luxembourg, the Netherlands, and Switzerland (Table 2). While FDI from these countries reflects a variety of economic factors, it is possible that their relatively high shares in total inbound FDI may also reflect, to some extent, conduit and other complex structures of multinationals that funnel part of their investment in and out of France for tax purposes.

Table 2. France: Top French FDI Partners			
Inward FDI (% of total inward FDI)		Outward FDI (% of total outward FDI)	
Luxembourg	20	United States	18
Netherlands	12	Belgium	13
Switzerland	12	United Kingdom	11
United Kingdom	11	Netherlands	10
United States	11	Germany	5

Source: IMF Coordinated Direct Investment Survey (CDIS). Numbers are for 2015.

26. Receiving special tax treatments and exploiting treaty networks of major French FDI partners may explain to some extent aggregate FDI statistics. For example, since 2013 the European Commission has been investigating whether some tax ruling practices (i.e., potential state aid in the form of reduced effective tax rate for specific companies) in some member states were compliant with EU state aid rules. These include cases such as GDF Suez ENGIE, Amazon, and McDonalds. The Commission has made findings of state aid through tax rulings against Ireland (in relation to Apple), the Netherlands (in relation to Starbucks), Luxembourg (in relation to Fiat) and Belgium (for its excess profits rulings).⁹ Another important factor that may drive bilateral French FDI is seeking to benefit from double tax treaties between a conduit country and a non-EU member (“treaty shopping”)—which can be especially important for non-French multinationals.

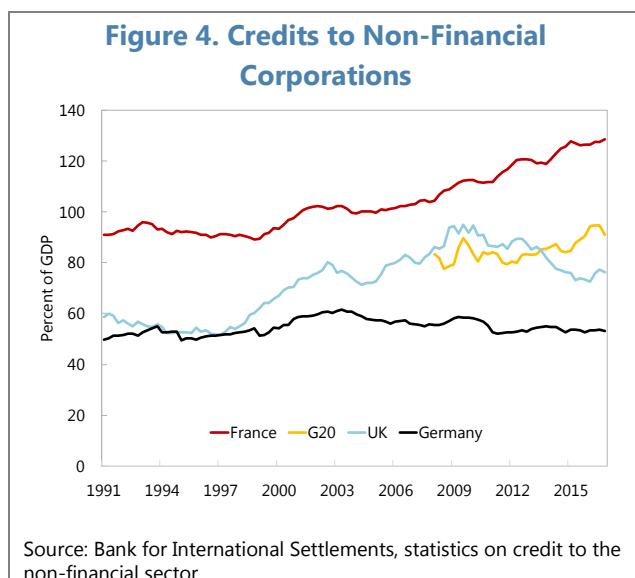
27. It is difficult to quantify the revenue cost associated with each potential outbound profit shifting method, but given French rules in place, transfer mispricing does not seem to be a major issue. Profit shifting methods abound, but prominent ones include the above two specific examples (advanced rulings and treaty shopping), transfer pricing (e.g., overpricing of imports from affiliates in low tax jurisdictions), and intra-company debt (i.e., affiliates in high tax countries borrow from affiliates in low tax jurisdictions and pay interest to them). Existing empirical evidence suggests that transfer mispricing resulted in only a 1 percent reduction in French corporate tax revenue (Davis et al., 2016). Vicard (2015) finds that the cost of transfer pricing abuse in 2008 in France was about 8 billion US dollars.¹⁰ Abuse of transfer pricing is expected to become even more difficult, since French transfer pricing rules were considerably tightened recently, e.g., by introducing country-by-country reporting and other requirements, in line with international standards.

⁹ As of 2017, such rulings are no longer in place, although several Member States have appealed against the Commission’s decisions.

¹⁰ These estimates are within the range of those found for Germany (e.g., Hebous and Johannessen, 2015).

Debt Bias

28. Interest deductions tend to contribute to corporate leverage and CIT base erosion. The debt level of non-financial corporations in France has been increasing considerably since 2007, reaching almost 130 percent of GDP in 2015 (Figure 4). This is significantly above the level in Germany (53 percent), the UK (67 percent), and the G20 (91 percent). While there are various factors that determine the level of credits to the non-financial sector, including the low-interest environment in recent years, the relatively high CIT rate makes deduction of interest expenses in France particularly attractive.



Source: Bank for International Settlements, statistics on credit to the non-financial sector.

29. The tax bias favoring debt to equity finance in France, as elsewhere, is a major distortion. The debt bias encourages borrowing (from banks or unrelated parties) to benefit from interest deductions under the CIT, ultimately increasing corporate leverage and thus risks of instability (IMF, 2016b). The debt bias is distinct from—but related to— intra-company debt shifting (mentioned above). Anti-avoidance rules that target only intra-group debt—unlike the French rule—do not address the debt bias (De Mooij and Hebos, 2017; IMF, 2016b). The French interest disallowance rule is a helpful tool to tackle this bias.

30. Further increasing the interest deduction disallowance could help reduce the debt bias and combat earnings stripping through debt shifting. France has already tightened the scope for interest deductions by raising the disallowance from 15 percent to 25 percent starting in 2014. Another increase could help limit tax incentives for building up corporate leverage while also offsetting part of the loss in fiscal revenue as the CIT rate is cut.¹¹ This would also move the CIT closer to a “comprehensive business income tax” (CBIT), which denies all net interest deductions for all corporations. However, in contrast to the interest disallowance rule, a CBIT, as originally proposed by the U.S. Treasury in 1992, would also exempt from tax the interest received by corporations to avoid double taxation. In fact, a CBIT is consistent with a source-based tax on all capital income (including interest). No country has applied a CBIT, however, and the French cap on interest deductions is not common despite its desirable properties. Germany has a somewhat similar limitation at the municipality level (“Gemeinde”), where 25 percent of interest payments deductible for the federal CIT are disallowed as a deduction for municipalities’ CIT purposes.¹²

¹¹ For example, Pozen and Goodman (2012) simulate that capping interest deduction at 65 percent in the US would have increased CIT revenues by 651 billion U.S. dollars over the period 2000–2009 (0.43 percent of GDP annually, on average).

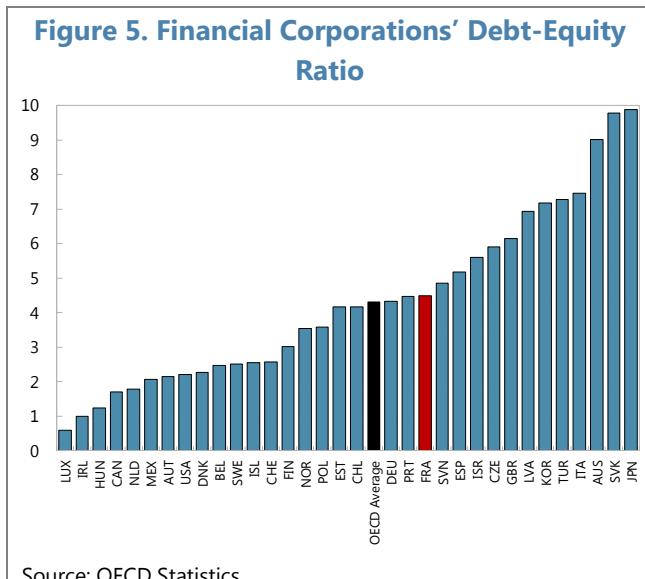
¹² The German CIT rate is 30 percent; split into 15 percent federal and, on average, 15 percent municipal.

31. There are, however, important challenges to relying solely on tightening the scope for interest deductions. First, it can raise the cost of capital and thus dampen investment.¹³ Second, a unilateral implementation of a very tight disallowance rule can significantly increase the risk of double taxation in the domestic and international context, thus generating distortions—the disallowance rule implies a partial taxation of interest income at source, while almost all countries tax interest on a residence basis. Third, a transition would be needed to cope with pre-existing debt.

32. An allowance for corporate equity (ACE), in combination with a tighter interest limitation rule, would be an effective option to address the debt bias. The ACE would mitigate a potential increase in the cost of capital caused by further tightening of interest disallowance, by allowing a deduction for the normal return on equity. Thus, ACE reduces the marginal effective tax rate on investment, and corporate debt (IMF, 2016b; Hebous and Ruf, forthcoming). The ACE has been advocated in the EU CCCTB proposal as an allowance for growth and investment, reflecting its potential favorable effects on firms' investment (Annex 2).

33. The revenue cost of an ACE depends on the design, but can be moderate. The design of an ACE entails two important aspects: the base for the allowance and the rate. An incremental ACE allows a deduction only for new equity compared to a reference period. This design is considerably less costly than a regime that defines the base as the total book value of equity. Additionally, it avoids giving a windfall for existing equity. Strengthening the interest limitation rule would further reduce the cost of an incremental ACE in France as the equity allowance would be capped to match the allowed interest deduction. The ACE rate should approximate the "risk-free" rate, e.g., proxied by the interest rate on government bonds (IMF, 2016b) but with a minimum ACE rate of 2 percent.¹⁴

34. The ACE can be applied to the banking sector without major implementation problems. Addressing the debt bias in the financial sector is important, especially considering potential instability risks and externalities. The financial corporation debt-to-equity ratio in France, at 4.5 is slightly above the OECD average (Figure 5). Existing evidence based on the



¹³ In comparison, under a CBIT, an immediate deduction for all investment can be provided, transforming the CIT into a cash-flow tax to eliminate tax distortions at the margin.

¹⁴ An incremental ACE could have other positive budgetary impacts. These include higher equity finance (hence, lower interest deduction) and less need for accelerated depreciation—as faster depreciation in one period leads to a lower equity in the next period, and thus a lower ACE base.

Belgian experience shows that offering an ACE is associated with a decrease in leverage in the banking sector by 13 percent (Schepens, 2016) and increased lending to firms (Celerier et al., 2017). France imposes a bank levy of 0.222 on minimum equity. Empirical evidence, however, suggests that a bank levy can affect banks' portfolio choices and increase their holdings of riskier assets, thereby partly undoing the effect of lower debt on the overall riskiness of banks (Devereux et al., 2015).¹⁵

35. Dealing with the corporate debt bias calls for a carefully calibrated reform, that should ideally be coordinated at the EU level. An EU wide perspective on debt bias can limit potential spillovers from a tighter interest limitation rule and explore ways to combine an interest limitation rule with an ACE.

The CICE and the Labor Tax Wedge

36. The tax wedge—a measure of taxes on labor income—is relatively high in France (Figure 6).¹⁶ For example, the average tax wedge for a single person earning an average income is 48 percent, well above the OECD average of 41.5 percent. The same pattern is observed for various levels of income and types of households (Figure 6, left panel). The high tax wedge partly reflects employers' social security contributions (SSC), which average 36.5 percent, compared to the OECD average of 23 percent (Figure 6, right panel). However, these figures do not account for the employment tax credit (CICE), which offsets labor costs, up to a threshold, against the CIT (loss making firms get a refund).

37. There is little economic rationale for using the CIT to reduce labor costs, as opposed to directly lowering the employers' SSC. The effectiveness of lowering the cost of employment depends on policy design. The analysis of the CICE Monitoring Committee concluded that CICE has not had an impact on investment, R&D, exports or wages, but appears to have had a positive impact on employment, by creating or saving between 50,000 and 100,000 jobs in 2013–2014.¹⁷ The government's plan to replace the CICE with an outright SSC cut should nonetheless be an improvement, as it would more directly target employment creation by lowering the non-wage cost per employee.

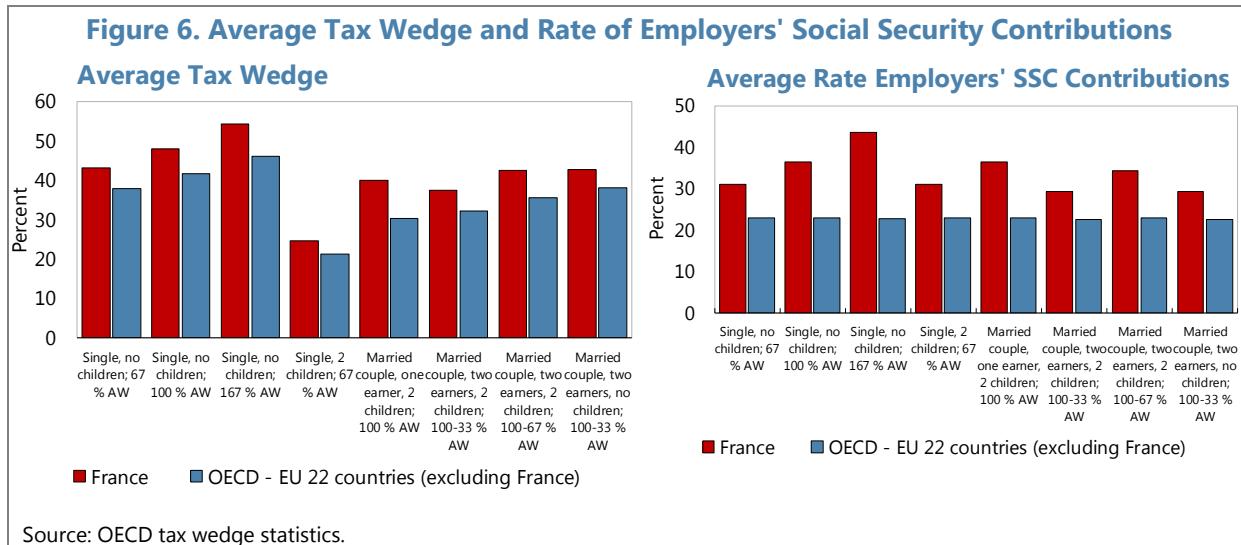
38. If the minimum wage is above the market clearing level, targeted SSC cuts around the minimum wage can help boost lower-wage earners' employment. In the presence of a binding minimum wage, the non-wage labor costs cannot be shifted to workers in the form of lower real wages. The implication of this economic incidence of the labor tax is that flat labor taxes hit lower-wage earners (often unskilled labor) disproportionately, thus justifying SSC cuts targeted at lower-wage earners. However, the positive impact on employment depends to some extent on subsequent

¹⁵ The bank levy will be phased out by 2019 with the introduction of the EU Single Resolution Fund.

¹⁶ The tax wedge is the sum of taxes and SSCs paid by employees and employers, minus family received benefits. The average tax wedge is the tax wedge divided by the total cost of labor for the employer. This measure can be computed at various levels of income and types of households (singles, couples, with or without children).

¹⁷ Given the relatively recent introduction of the CICE, these results should be interpreted with caution.

wage bargaining outcomes and on firms' incentives for hiring in jobs that do not benefit from the targeted SSC cut.



39. The cost of lowering employers' SSC depends on the design details. Converting the CICE, which is expected to cost 15,770 million euro in 2017 (Cour des Comptes, 2016), into a lower SSC can be designed to lower the cost with better targeting. The first-year transition cost, associated with claims in relation to the previous year, could be spread by phasing in the SSC cut over two years.

D. Linkages Between the CIT and the Broader Tax System

Tax Neutrality vis-à-vis Legal Business Forms

40. The planned CIT rate cut to 25 percent may well increase the incentive for individuals to incorporate their businesses, thus risking an erosion of the personal income tax (PIT) ("impôt sur le revenu"; IR). The classic function of the CIT is a backstop for the PIT (IMF, 2017). The tax treatment of business income, including dividends and capital gains, depends on whether the firm is organized as a corporation or as a non-corporate business (e.g., as a sole proprietorship or partnership). It is important to align these tax burdens to avoid distortions in the choice of legal form. Empirical evidence for Europe points to significant shifts in the choice of legal form due to tax differences between corporate and non-corporate businesses (De Mooij and Nicodème, 2008). Furthermore, the tax burden on corporate business income should be aligned with that on wage income, as otherwise people will have an incentive to supply their labor effort through a small corporate business entity and be taxed favorably.¹⁸

¹⁸ It is difficult to neutralize entirely this distortion if the wage tax rate schedule is progressive while the CIT applies at a single rate. For example, under a pure dual income tax system, this alignment is made at the lowest marginal tax

(continued)

41. Figure 7 illustrate some of the properties of the current system in France, by comparing the average tax burden on business income derived from two forms of businesses along the income distribution up to 350,000 euro: (1) a non-corporate business that is subject to the progressive PIT; (2) a corporate business that pays CIT at 25 or 33.3 percent. Under the current PIT, a single-earner household has a strong incentive to incorporate at relatively low tax rates, but not dual-earner households, due to the “quotient familial” (the income averaging scheme for families). Under a CIT at 25 percent, the incentive to incorporate is increased significantly for dual earners, while it is unchanged for single-earner households. Thus, to lower potential arbitrage opportunities via the organizational form, the CIT rate cannot be seen in isolation from PIT rates.

Capital Income Taxes at the Individual’s Level

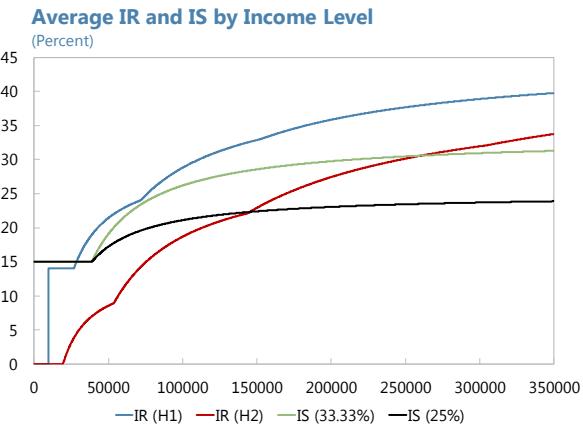
42. Capital taxation must be seen in the context of all the taxes that apply to capital, at both the individual and corporate levels.¹⁹ The system of capital taxes on individuals in France combines multiple taxes on the returns and stocks of capital that affect individuals’ and households’ choices to save and invest over their lives. Taxes on capital returns (i.e. interest, dividends, rent from real property, and the like) include the PIT progressive rate structure, the “contribution sociale généralisée” (CSG)—a schedular single-rate tax that finances social protection spending²⁰—, and other earmarked taxes of lesser revenue importance. Taxes on the stock of capital includes several recurrent taxes and transaction taxes on real property—primarily for the benefit of local governments, and levied by them—a wealth tax, and inheritance and gift taxes. Many of these taxes are reduced through numerous tax-deferred schemes, which attempt to direct savings to specific areas of the productive sector or to retirement, but tend to be narrowly defined in their objectives,

rate on wage income, but rules are set in place to attribute a return to assets or equity, leaving the residual to be taxed as labor income. In France, such considerations need a broader perspective on the overall architecture of the income tax system.

¹⁹ A full assessment of the interaction between the various taxes on capital, including real property taxes and central-local tax assignment, is beyond the scope of this paper. The analysis here focuses on key central taxes, while acknowledging the need for a more comprehensive analysis of all taxes on capital.

²⁰ The CSG is a schedular tax on all income sources, including wages, certain budgetary transfers to individuals, business income, and portfolio income. Rates vary little across types of income, and are low relative to the marginal tax rates of the PIT (about 8 percent). But due to its very broad base, and the relative absence of allowances, it generates more revenues than the PIT.

Figure 7. CIT Rate Cut and Non-Neutrality Among Different Types of Business Income



Note: IR is the French PIT (“impôt sur le revenu”). We consider two scenarios for households, H1 has one earner, and H2 has two earners. We consider only the IR marginal tax rate, which ranges from 14 to 45 percent. The incentive to incorporate is more complicated since other factors (tax and non-tax) come into play. For instance, the phasing out of the “quotient familial” for high-income households is not reflected here.

and hence have low revenue cost, except for life insurance contracts, which remain one of the most heavily utilized tax-advantaged savings instruments.

43. France's system of capital taxes on individuals is complex, and causes distortions that interfere with an optimal allocation of savings in the economy. First, there are distortions to savings across types of instruments, the use of savings in the productive sector, and inter-temporal decisions (i.e. tax advantages that depend on the holding period of securities). Second, the multiple layers of taxes on flows and stocks increase significantly the pre-tax required return on savings, hence the cost of domestic capital. In addition, certain schemes may encourage individuals to take more risks with their savings, hence undermining incentives for retirement savings.

44. There is scope to simplify the taxation of individuals' capital while improving the neutrality of the system. Tax distortions across savings instruments could be reduced by moving toward a single-rate tax on capital income (interest, dividends, capital gains), as planned by the new government, giving the income tax system a "dual" form. This can be complemented by transforming instrument-based tax breaks—such as for life insurance, real estate investments, and regulated saving accounts—into comprehensive tax-deferred long-term savings vehicles. It is also useful to review the coexistence of wealth and inheritance taxes. Taxes on inheritances can theoretically be more effective in raising revenue from high income persons, and tend to be less distortionary than wealth taxes (IMF Fiscal Monitor, October 2017, forthcoming). Any changes in this regard would, however, depend on the fiscal impact and likely require a significant transition.

45. With proper design, the overall revenue and equity implications of reforming capital taxes on individuals can be manageable. The planned unified tax rate on capital income, possibly combined with a broader inheritance tax base, can be designed to yield the same amount of revenue from capital income as currently collected.²¹

46. The CIT rate cut and reform to capital taxation may require increasing revenues from other sources to meet fiscal objectives. While reforming capital taxation at the individual level can be made revenue neutral, the government's plans to reduce the CIT rate to 25 percent is likely to call for a broader perspective on tax reform. In this regard, consumption taxes, in particular excises and environmental taxes, are areas where more revenues could be mobilized. France started down this path under the Hollande mandate, and the new government has already signaled its intention to continue in this direction—for example, tobacco taxes will increase significantly in coming years. As noted above, indirect taxes are comparatively low as a share of total taxes, and there is generally scope for enhancing the use of "green" taxation.

²¹ For instance, Didier and Ouvrard (2016) estimate a rate of 30 percent as a replacement for all taxes on capital held by individuals—flows and stocks, and central and local.

E. Tax Uncertainty

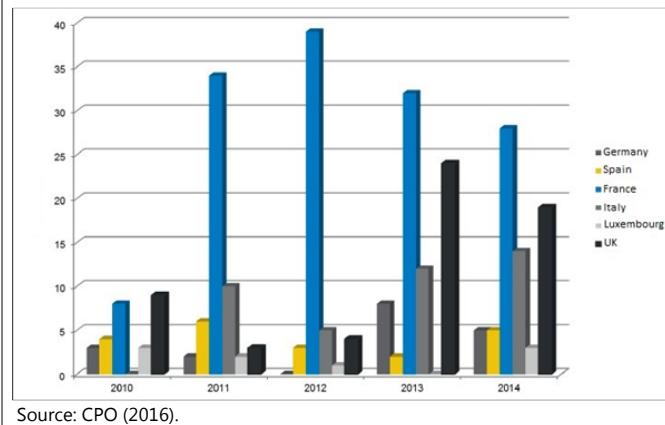
47. Tax uncertainty is a concern among the business community—as in many other countries. It has been subject to a longstanding debate in France,²² most recently in relation to the corporate income tax.²³ The importance of improving stability and certainty in tax matters has also received attention internationally in the context of the G20 tax agenda.²⁴

48. A stable and predictable tax system is important from the perspective of businesses as well as governments. Theoretically the impact of uncertainty on investment is unclear, but empirical studies, while sparse, suggest that tax uncertainty can adversely impact investment and trade. This is supported by the business and tax administration surveys included in the recent G20 report on tax certainty, according to which uncertainty in the corporate income tax (and VAT) systems has an important impact on investment and location decisions of businesses.²⁵

49. Complexity of tax legislation and frequency of tax law changes are commonly cited sources of tax uncertainty. While the sources of tax uncertainty are many and varied—and taxpayers and tax administrations typically point to the behavior of the other as a source of uncertainty—both taxpayers and tax administrations commonly cite complexity of tax legislation and frequency of tax law changes as key sources of tax uncertainty.

50. These sources of tax uncertainty, and in particular the frequency of tax law changes, are also of major concern in France. Indeed, compared to other EU countries, France has by far the highest number of yearly corporate tax law changes (Figure 8). Earlier studies show that, on average, every year close to 20 percent of provisions in the tax code are subject to change. Coupled with the complexity of the tax law, such high frequency of changes seriously undermines the understandability of the tax law.²⁶

Figure 8. Number of Corporate Tax Law Changes in Selected EU Countries



²² Fouquet (2008); Le Club des Juristes (2015).

²³ CPO (2016), at pp. 144–146.

²⁴ IMF/OECD (2017).

²⁵ IMF/OECD (2017)

²⁶ Le Club des Juristes (2015), at pp.245–246.

51. Important efforts have been made to improve legal certainty or “sécurité juridique” for taxpayers, in particular through the “*rescrit fiscal*”, a procedure that enables taxpayers to obtain prior assurance from the tax administration on how the tax law will apply to their situation. Advance tax rulings are widely recognized as an important tool for improving taxpayer certainty,²⁷ and as a way to promote clarity and consistency in the application of the tax law for both taxpayers and tax authorities.²⁸ To fully achieve these objectives, however, taxpayers should be able to obtain a swift response from the tax administration on the widest range of issues.²⁹ Furthermore, in the interest of transparency and to maximize their beneficial impact on certainty, advance tax rulings should be systematically published for the benefit of all taxpayers, redacted for taxpayer specific information.

52. While advance tax rulings are a powerful tool for improving the legal certainty (“sécurité juridique”), improving the stability and predictability of the tax system requires streamlining the process of tax policy design and implementation. In this respect, a few concrete measures can improve the design, reduce the complexity and increase the clarity of tax policy and legislation:

- *Tax policy coherence*: maintain government control over tax policy making—under the direct supervision of the ministry of finance and control of the parliamentary finance committee—to avoid policy dispersion through cross parliamentary initiatives;
- *Stability of the tax legislation*: limit major tax law changes to annual finance laws; and
- *Predictability of tax legislation*: avoid retroactive tax legislation,³⁰ even where there is no constitutional prohibition (so-called “*petite rétroactivité*”); in addition to transitional, grandfathering and sunset provisions to carefully manage the impact of tax law changes,³¹ systematically engage in (*ex-ante*) stakeholder consultations, such as by systematically releasing policy papers and draft legislation for stakeholder comments prior to parliamentary debate.

F. Conclusions

53. There are opportunities for efficiency- and growth-enhancing reforms of France’s capital tax system. The central issue is not so much that the overall tax burden is unreasonably high (especially when compared to the total level of taxation), but that there are many distortions and inefficiencies that lead to misallocation of resources and a low revenue productivity of certain

²⁷ IMF/OECD (2017), at pp. 45–46.

²⁸ Waerzeggers, Christophe and Cory Hiller, 2016, “Introducing an advance tax ruling (ATR) regime”, Tax Law IMF Technical Note 2016/2, IMF Legal Department.

²⁹ The CPO notes that more progress can be made with respect to the speed with which rulings are issued; see CPO (2016), at p. 146.

³⁰ Unless there is an overriding reason, such as to make a technical correction to restore the original intent of the law, or to close a loophole.

³¹ CPO (2016), p. 145.

taxes, especially the CIT. Relying solely on reducing the CIT rate would therefore not address the full range of issues that may hamper France's international competitiveness and productivity at the corporate level.

54. The high statutory CIT rate in France has contributed to the creation and use of “niches”, many of which are beyond the proper focus of this tax. Examples include using a CIT credit to lower labor costs, as well as size-dependent regimes that provide disincentives to company growth. Improving competitiveness and reducing inefficiencies require a broader perspective on capital tax and a CIT base reform. In combination with the planned cut in the French CIT rate and conversion of the CICE into an outright reduction in employer SSC (envisioned for 2019), reform options include: removal of inefficient CIT incentives, such as the IP box; elimination of size-dependent regimes, such as reduced CIT rates; and streamlining of local production taxes.

55. France is a leader in the employment of anti-avoidance rules to combat outbound profit shifting. But profit shifting remains a concern, and corporate leverage in France is relatively high. One potentially effective approach to address both the debt bias and interest expense stripping would be to increase the 25 percent interest disallowance while introducing an ACE to limit the impact on the cost of capital. The recently announced Franco-German CIT harmonization initiative—on which little is known so far—could provide an opportunity for making progress in this direction, in a way that is coherent with EU CIT coordination.

56. At the individual’s level, capital taxes can be made more neutral across various types of savings and investment instruments. One promising policy option, which would have little impact on revenue and equity, but possibly significant simplification and efficiency gains, is a unified rate on capital income (interest, dividends, and capital gains), as envisaged by the new government. This could be complemented by transforming instrument-based tax breaks into a generalized tax-deferred long-term savings vehicle.

57. Frequent changes to tax laws, including the addition and removal not only of specific provisions, but of entire new taxes, give rise to undesirable uncertainty. In France, this seems a greater concern than administrative uncertainty. This suggests that there is scope for instilling more discipline in the tax policy process, including by limiting tax changes to annual budget laws and improving consultations with the private sector to minimize unintended effects.

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Annex I. Restrictions on Tax Deduction for Interest Expense in France

France has an interest rate test applied on loans from shareholders and related parties. Interest deduction is limited to the higher of:

- the average annual interest rate charged by lending institutions to companies for medium-term (e.g., the rate was fixed at 2.15 percent in 2015)
- the interest that the indebted company could have obtained from independent banks under similar circumstances

A higher interest rate may be allowed only if the borrowing company can prove it is on an arm's length basis.

In addition, there are thin capitalization rules:

Interest paid to related parties, which is deductible under the above test, is limited to the highest of the following threshold:

- The intragroup loan exceeds 1.5 times the net equity,
- the interest exceeds 25 percent of the EBIDA, and
- the intragroup interest exceeds intragroup interest received.

The rules apply to each enterprise member of the group taken on a standalone basis with the possibility of carrying forward interest expenses that are not immediately deductible without a time limit (but the carry forward amount is reduced by 5% each year).

The rules do not apply:

- to interest payable by banks and lending institutions;
- if the interest paid does not exceed 3 million euro; or,
- if the French indebted company demonstrates that the debt-to-equity ratio of the worldwide group to which it belongs exceeds its own debt-to-equity ratio.

Finally, the deducted amount is capped at 75 percent of net interest payments. This cap, however, does not apply if net interest payments do not exceed 3 million euro.

Annex II. A Common Consolidated Corporate Tax Base (CCCTB)

In October 26, 2016, the European Commission proposed introducing a common consolidated corporate tax base (CCCTB) in the EU using a two-step approach.

- **First step: Common Corporate Tax Base (CCTB):** In the first step, Member States would agree on, and implement a single EU-wide set of rules for computing the tax base of companies in the EU. Those rules would be mandatory for large multinational groups with global sales of at least EUR 750 million, but other companies can opt in the system. In the proposed CCTB, the tax base is broad including all revenues that would be taxable (unless exempted¹), but allows for deducting financial costs up to the extent of financial revenues, with the excess restricted to the higher of EUR 3 million or 30 percent of EBITDA. The proposal includes two measures that aim at enhancing growth:
 - *The allowance for growth and investment* (AGI) provides tax deduction for notional return on equity.
 - *Super-deduction for R&D expenditure* between 125 percent and 200 percent of actual costs are meant to support innovation in the economy.

The proposal foresees several anti-avoidance measures including those from the ATAD as well as a "switch-over clause" in relation to dividends and capital gains from zero or low-taxed companies that would not benefit from the participation exemption.

- **Second step: Introduce EU-wide consolidation and formulary apportionment (i.e., complete CCCTB):** Groups would deal with a single tax administration. The group's common consolidated corporate tax base would be shared between the Member States in which the group is active using an apportionment formula comprising three equally weighted factors: (1) labor, based in equal measure on the number of employees and payroll costs; (2) assets (tangible fixed assets, whether owned, rented or leased); and (3) sales (other than intragroup sales) of goods and services net after discounts, returns, VAT and other taxes and duties. The sales factor would be calculated based on destination (i.e., where the goods are sold/dispatched to or where the service is carried out). Each Member State would apply its own CIT rate to the apportioned share of the profits. In other words, there would be no harmonization of tax rates.
- **Timeline:** The proposal requires the unanimous approval by the Member States for adoption. If adopted, Member States should comply with the CCTB Directive by December 31, 2018, for application as from January 1, 2019. The CCCTB Directive would require legislation by December 31, 2020, with application from January 1, 2021.

¹ Dividend income and proceeds from the disposal of shares for participations of at least 10% as well as profits of PEs would be exempt from tax in the state of the head office.

List of Abbreviations

ACE	Allowance for corporate equity
ATAD	Anti-Tax Avoidance Directive
BEPS	Base erosion and profit shifting
CBIT	Comprehensive business income tax
CCCTB	Common consolidated corporate tax base
CET	Contribution économique territoriale; a territorial local contribution
CFC	Controlled foreign company
CFE	Cotisation foncière des entreprises; a local tax on rental value of property
CICE	Crédit d'impôt pour la compétitivité et l'emploi; an employment tax credit
CII	Crédit d'impôt pur l'innovation; Innovation tax credit
CIR	Crédit d'impôt pour la recherche; research tax credit
CIT	Corporate income tax
CSG	Contribution sociale généralisée; a schedular single-rate tax that finances social protection spending
CVAE	Cotisation sur la valeur ajoutée des entreprises ; contribution on the value-added of enterprises
EBITDA	Earnings before interest, tax, depreciation and amortization
FDI	Foreign direct investment
IP	Intellectual property
IR	Impôt sur le revenu
IS	Impôt sur les sociétés; the French corporate income tax
ISF	Impôt de solidarité sur la fortune; wealth tax
JEI	Jeune entreprise innovante; Young innovative enterprise
R&D	Research and development
SSC	Social security contributions

REVISITING THE COMPETITIVENESS PROBLEM¹

There is some evidence that France has lost external competitiveness over the past two decades, reflecting both price and non-price factors. This has contributed to a comparatively weak export performance and a deterioration of France's overall external position, while constraining the contribution of tradable sectors to real GDP and employment growth. Despite solid productivity growth, cost competitiveness weakened before the global financial crisis, partly reflecting the real appreciation of the euro and wage and price dynamics in the services sectors. Moreover, we find that trading partner growth and relative price effects contributed to the loss in export market shares. Since the crisis, cost competitiveness indicators have improved somewhat, reflecting wage moderation and steps to lower the labor tax wedge.

A. Introduction

1. The worsening export performance of France since the late 1990s, alongside the de-industrialization trend, has long attracted the attention of policy makers and researchers.

The literature is extensive, e.g., Didier et Koleda, 2011; Rapport Gallois, 2012; Pacte National pour la Croissance, la Compétitivité et l'Emploi, 2012; Rapport Economique, Social et Financier, 2012 and 2016; Cohen and Buiques, 2014; IMF, 2013 and 2014. Various policy initiatives taken in recent years have aimed at improving competitiveness along the cost dimension—such as the Crédit d'Impôt pour la Compétitivité et l'Emploi (CICE), the Pacte de Responsabilité et de Solidarité—and the quality and technological dimensions—such as various reforms of the Crédit d'Impôt Recherche.

2. This paper revisits the debate, taking a broad view of external competitiveness.

Competitiveness can be defined as the ability of domestic enterprises to withstand foreign competition, both on foreign markets and the domestic market. Indicators of competitiveness can be classified into "price competitiveness" (comparison of product prices among competitors), "cost competitiveness" (notably comparison of unit labor costs), and "non-price competitiveness" (related to the positioning of product quality, the ability to charge mark-ups, etc.). To ascertain the overall degree of competitiveness, it is thus useful to consider not only export growth or market shares, but more generally the growth of value added and employment of a country's tradeable sectors, both goods and services.

3. France's loss in global market shares since the 1990s is not unique among advanced economies, and a priori not all that surprising given the rise of emerging markets. In this paper, we will focus on the question whether France may have a competitiveness problem relative to other advanced economies, including those in the euro area. At first glance, several indicators appear to support the view that France has been falling behind on global markets as the decline in market shares has been steeper than in many peer countries. But there are significant differences and specificities between advanced countries, and it is important to distinguish the broad range of

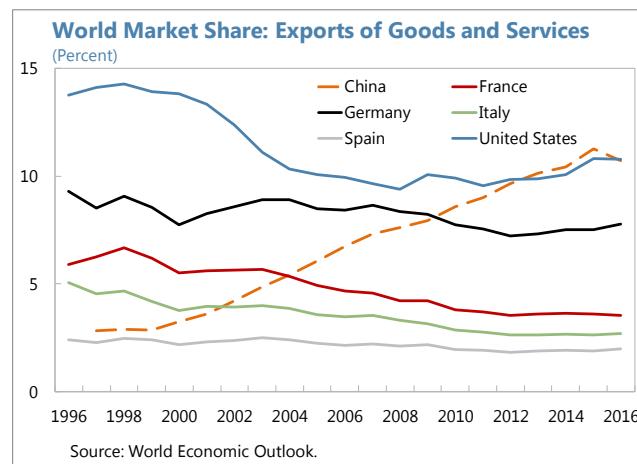
¹ Prepared by Thierry Tressel (EUR). The author thanks Christian Mumssen, Jörg Decressin, Guillaume Gaulier, Rafael Cezar, participants at a seminar at the French Treasury and internal reviewers for very useful comments.

factors that may contribute to losses in market share, which require careful analysis. For instance, the perception of France's declining external competitiveness has often been framed in comparison to the strong export performance of Germany (*Rapport Economique, Social et Financier*, 2012). This bilateral comparison is understandable, given similarities in export structures and the prominent roles the two economies play in the Eurozone (see for instance Tressel and Wang, 2014). However, Germany's imbalanced external position (characterized by large current account surpluses)² calls for caution in drawing policy conclusions for France, especially with respect to trends in cost competitiveness, even if it can be instructive to consider to what extent differences in trading partners, technology, specialization, and other aspects of non-price competitiveness may play a role.

4. The paper is organized as follows. Section B reviews stylized facts of the performance of France's tradable sector, including market shares, growth in value added, and profit margins, which provides some *a priori* evidence that tradable sectors have been less dynamic than in some comparator countries. Section C reviews specific indicators of price and non-price competitiveness to assess potential explanations for the apparent loss of competitiveness since the 1990s. For a more thorough analysis to disentangle the degree to which external or domestic factors have played a role, we present two sets of empirical findings in Section D (a shift-share analysis of export market shares into a domestic effect, geographical and sectoral specialization effects) and in Section E (the impact of foreign demand and relative prices on export performance). Section F concludes.

B. Stylized Facts on the Performance of Tradable Sectors

5. Since the early 2000s, France's exports have lost world market shares more rapidly than many peer countries (Figure 1). With the rise of emerging markets, there has been a trend decline in export market shares of advanced countries, including those in the euro area.³ The loss of the world market share of French exports has been somewhat faster than in many peer countries, for both goods and in services (Figure 1). These facts have been well documented (see for instance IMF, 2014; and *Rapport Economique, Social et Financier*, 2012 and 2016). France's market share has broadly stabilized since 2012.



² The IMF's 2017 External Sector Assessment finds that France's external position in 2016 was weaker than the level consistent with medium-term fundamentals and desirable policies while Germany's external position in 2016 remained substantially stronger than implied by medium-term fundamentals and desirable policy settings.

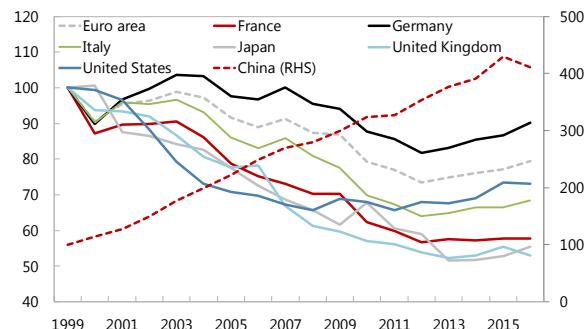
³ When netting out intra-euro area trade, the market share of exports of the euro area to the rest of the world has remained broadly stable over time, implying that the share of intra-euro area trade in world exports has declined.

Figure 1. France's Tradable Sectors Have Lost Ground by International Comparison

The decline in France's world export market share has affected good exports ...

World Market Share: Exports of Goods

(Index, 1999 = 100)

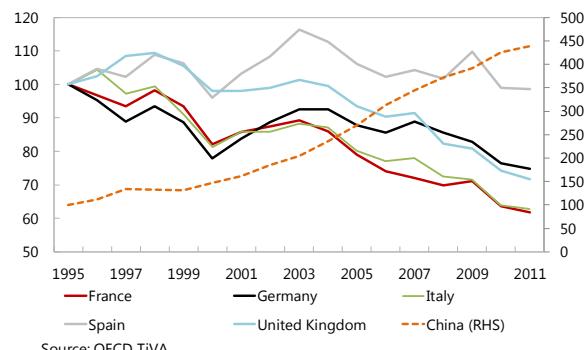


Source: World Economic Outlook.

The decline was pronounced also for the market share of the domestic value-added of exports

World Market Share: Domestic Value Added in Exports

(Index, 1995 = 100)

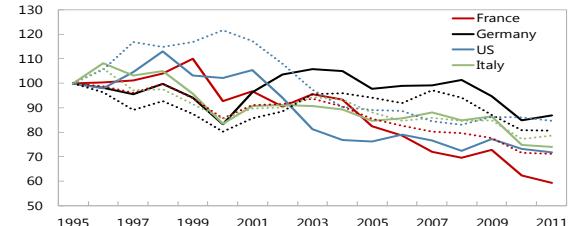


Source: OECD TiVA.

The loss in market share has been particularly strong in the domestic value-added of manufacturing exports in the OECD and outside the OECD ...

Market Share of Manufacturing

(Index, 1995 = 100)



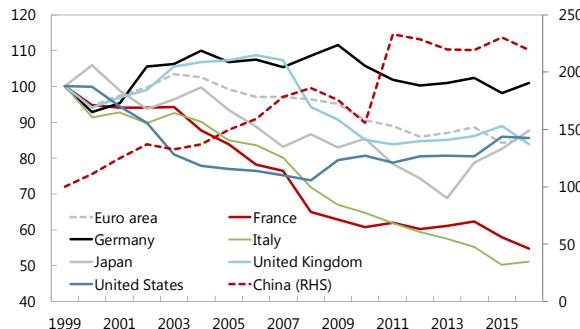
Source: OECD TiVA.

Note: Solid lines indicate exports to non-OECD countries. Dotted lines indicate exports to OECD countries.

... as well as services

World Market Share: Exports of Services

(Index, 1999 = 100)

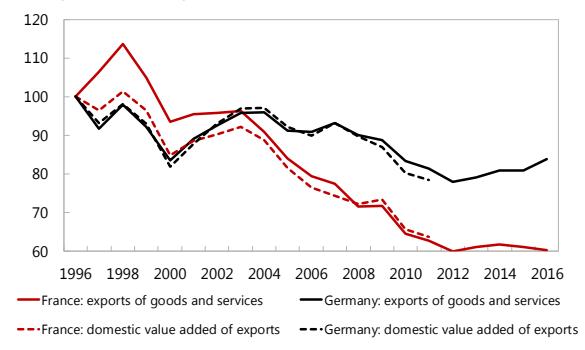


Source: World Economic Outlook.

... though the widening differential to Germany appears similar when focusing on value added of exports.

World Market Shares

(Index, 1996 = 100)

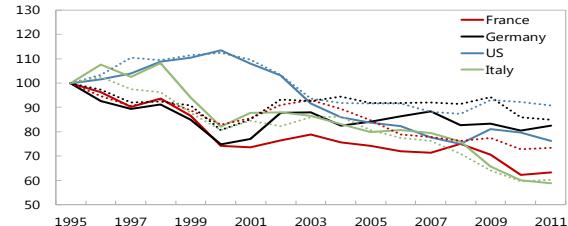


Sources: World Economic Outlook and OECD TiVA.

... while the value-added of service exports have also fallen behind many peer countries in the OECD and outside the OECD.

Market Share of Business Services

(Index, 1995 = 100)



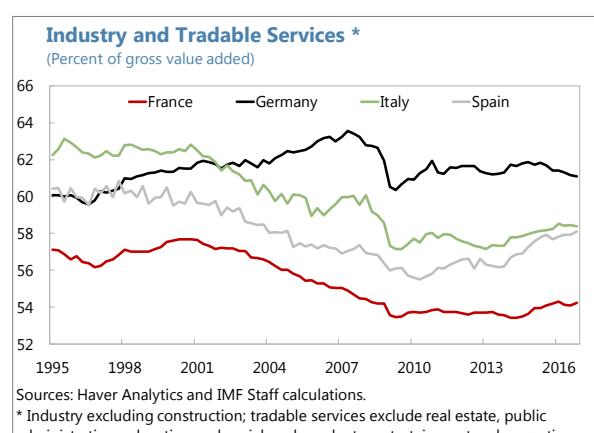
Source: OECD TiVA.

Note: Solid lines indicate exports to non-OECD countries. Dotted lines indicate exports to OECD countries.

6. The same trend broadly applies to the value added of exports. With the rapid development of global and regional value chains, gross exports have become less appropriate measures of trade performance. They may embody a large share of imported intermediate products, and do not measure the value-added that is produced on the domestic market. Using a new OECD database that provides bilateral trade flows with a breakdown between their domestic or foreign value-added content, we show that the main stylized facts of France's declining market shares continue to hold. If the domestic value-added of exports is considered, it is interesting to note that the decline differential with Germany is similar by the end of the period relative to the mid-1990s, but it is smaller if the starting point is the early 2000s, perhaps because of France's relatively lower integration in global value chains.⁴ The market share decline in value-added terms was more pronounced vis-à-vis countries outside the OECD than in the OECD, and occurred both for goods and services.

7. The relatively weak export performance is mirrored in the modest growth of gross value-added (GVA) and employment in France's tradable sectors (Figure 2). Since 2000, tradable sectors contributed ¾ percentage points in France's gross value added growth, somewhat below the growth contributions of tradable sectors in Germany, the UK, and Spain, but well above Italy. Manufacturing contributed very little, as in most other countries (Germany being a notable exception). While tradable GVA plunged less than in other countries at the height of the Global Financial Crisis, its recovery has been lackluster, especially when compared to Germany. Regarding employment creation, we see that tradable services have been the main contributor since 2000, as in other countries, while employment has been falling in manufacturing. The composition of employment growth likely reflects the relative success and delocalization in emerging markets, though it could also partly be the consequence of outsourcing trends and of reclassification of activities from manufacturing to services (Bernard, Smeets, and Warzynski, 2017). The secular decline in France's manufacturing industry and related competitiveness problems have been thoroughly documented, for instance by Cohen and Buiges (2014), and Fontagné, Mohnen and Wolff (2014).

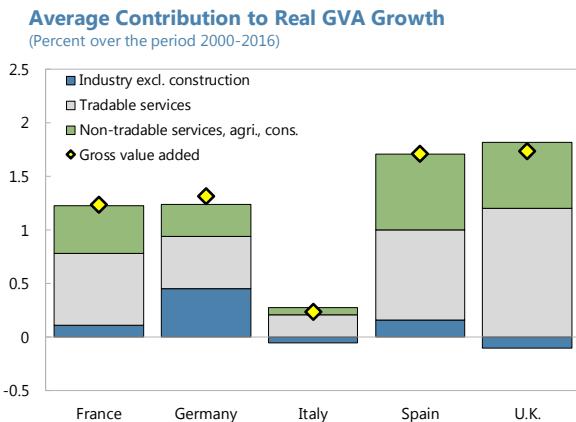
8. There has been some reorientation toward non-tradable sectors. The share of non-tradable sectors in GDP has traditionally been higher than in European comparator countries. The economy has since become even more oriented toward non-tradable sectors—including the public sector, health, education, social work, entertainment and recreation, and real estate and construction. The share of non-tradables in GDP reached about 46 percent of GDP in 2016.



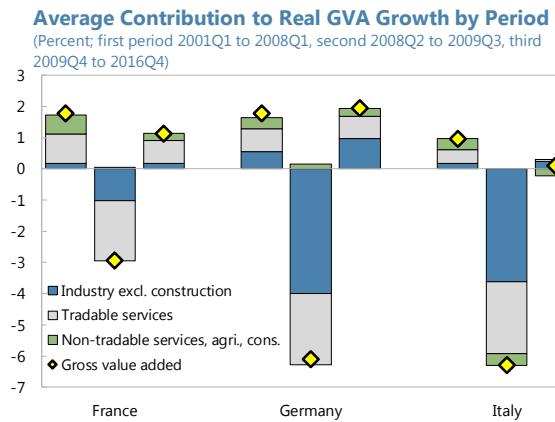
⁴ See also Cezar et al. (2017). Low integration in global value chain may however be expected to result in lower gross exports.

Figure 2. Tradable Sectors Generated Modest Value-Added and Employment Growth

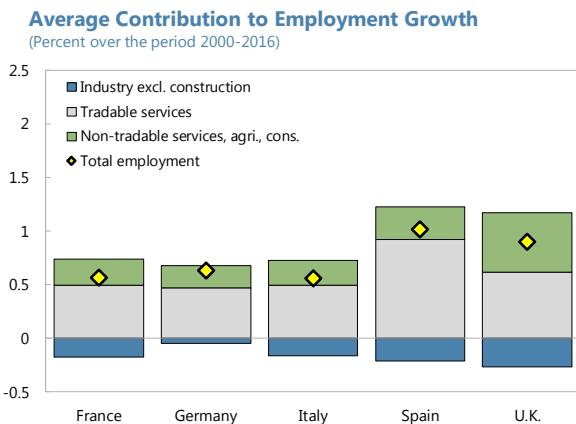
Average sectoral contribution to real GVA growth ...



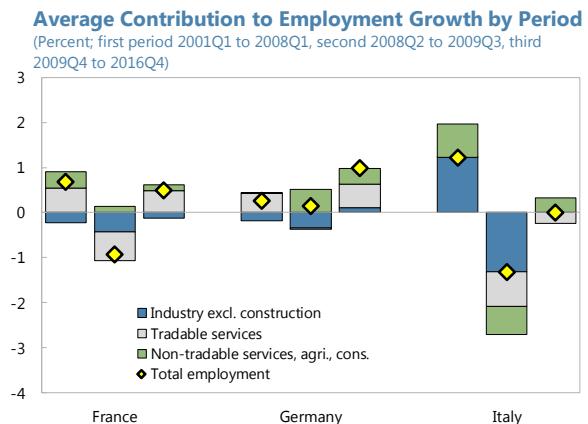
... and split by periods



Average sectoral contribution to employment growth ...



... and split by periods



Sources: Haver Analytics and IMF staff calculations.

9. Profit margins of France's tradable sectors have declined since the early 2000s, but have rebounded moderately in recent years (Figure 3). In the French and Italian industry (excluding construction), the margin between output price and unit labor costs declined moderately between the peak of early 2001 and the onset of the global financial crisis, suggesting that exporters were compressing profit margins to protect their market shares.⁵ ⁶ This trend continued during the crisis years, but price margins have started to trend upward.⁷ These patterns contrasted with the experience of industrial exporters from Germany or Spain where price margins were widening before and after the crisis years. In tradable services, price margins have generally been on a declining

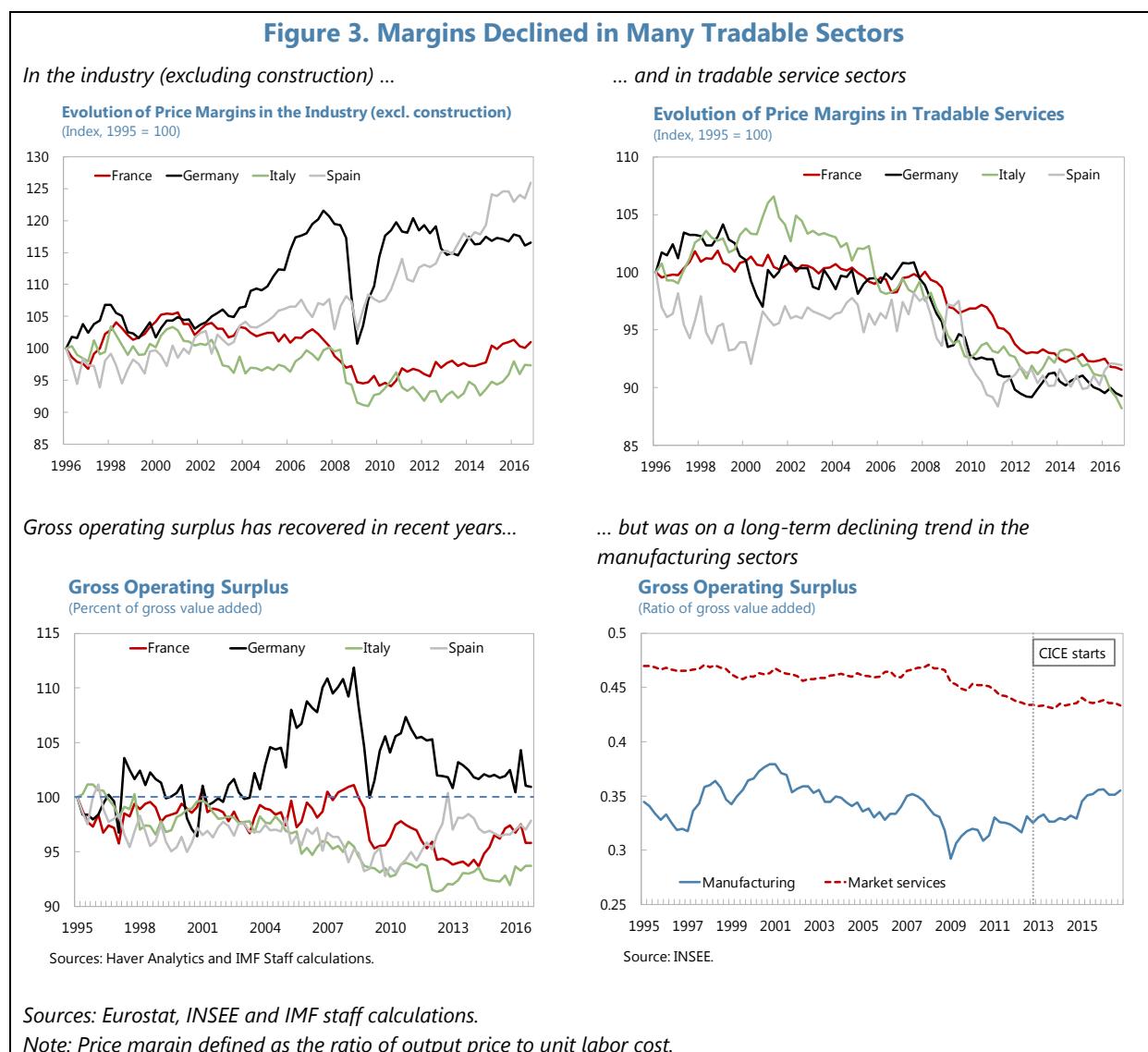
⁵ A similar conclusion appears in Rapport Economique, Social et Financier, 2016.

⁶ The evolution of margins at the industry level could also be the consequence of compositional factors, such as a reallocation of activity from high margin firms to low margin firms.

⁷ This does not account for the effect of the CICE which is accounted as a tax credit instead of a reduction in social contributions.

trend, accelerating since the Global Financial Crisis. Another measure of profitability, gross operating surplus to GVA, was also on a declining trend, especially in manufacturing sectors in France, although it rebounded in recent years.⁸

10. Taken together, these stylized facts point to a potential loss in competitiveness since the 1990s, although the trend has been less pronounced since the crisis. This is likely to have contributed to France's current account deficit, which at around 1 percent of GDP in 2016, or 1½ percent of GDP on a cyclically adjusted basis, was judged to 2¾ percent of GDP lower than the level consistent with medium-term fundamentals and desirable policy settings, according to the Fund's External Sector Assessment methodology.



⁸ Methodologies to estimate gross operating surplus differ across euro area countries. Differences in the level of the gross operating surplus could be partly attributed to different size distribution of firms and sampling techniques.

C. Factors Affecting Competitiveness

11. There are a range of potential causes for the apparent loss of external competitiveness since the 1990s. We group these into four interrelated categories: (i) price and cost competitiveness; (ii) non-price competitiveness (productivity and technology, product quality, integration in global supply chains); (iii) policies; and (iv) “bad luck” in terms of export specialization and trading partners.⁹

12. Prices and cost competitiveness. We look in turn at the real effective exchange rate (REER), and two indicators of cost competitiveness - the relative internal prices, and unit labor costs (ULCs).

- *There is some evidence of a loss of price competitiveness reflected in some overvaluation (Figure 4, top charts).* According to many measures, the REER has mildly appreciated since the early 2000. Despite some depreciation in recent years, the exchange rate is considered to be overvalued by between 8 and 14 percent based on 2016 data according to the IMF’s External Sector Assessment methodology discussed above.¹⁰
- Relative domestic prices suggest that the cost of intermediate inputs to tradable production has strongly risen, in particular in manufacturing (Figure 4, bottom charts). The price of non-tradable sectors, which are typically inputs to tradable sectors, inflated by some 40 percent between the mid-1990s and the onset of the Global Financial Crisis, and remain about 45 percent above their 1995 level.¹¹ The price of tradable services—which often are outsourced from manufacturing firms and can be inputs into the production of tradable goods—relative to industrial goods, also increased significantly—by some 25 percent—between 2000 and 2010, and subsequently experienced a moderate decline of about 5 percent. The relative increase in the price of services (both non-tradable and tradable) relative to manufacturing goods is an important consideration, because France has a large share of service inputs in the value chain of manufacturing goods relative to other large countries, and this share has increased over time (Cezar et al., 2017).
- *Labor costs have risen since the early 2000s* (Figure 5 and Annex Figures 1 and 2). Unit labor cost dynamics were not out of line with other euro area countries, thanks to relatively robust labor productivity growth. Compared with Germany, the pre-crisis period opened a bilateral competitiveness gap in unit labor costs, largely reflecting wage growth differentials, especially in service sectors. Since the crisis, the gap with Germany has somewhat closed, thanks to more rapid wage growth in Germany.¹² France’s loss of cost competitiveness has also been documented in Cohen and Buigues (2014).

⁹ Non-price competitiveness can be seen as the part of demand for a good that is not explained directly by prices; it can be related to the ability to charge a mark-up over market prices, resulting from horizontal differentiation, or vertical differentiation (quality, technological content). We classify productivity and integration as non-price competition even though they may initially be affected by price—and cost—consideration.

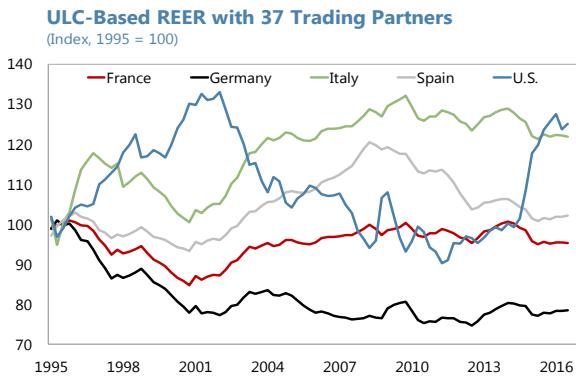
¹⁰ See Annex I of the Staff Report of the 2017 France Article IV consultation.

¹¹ IMF (2013b) quantifies the input components of services in the production of tradable sectors.

¹² Note that the evolution of the ULC after 2013 does not reflect the additional impact of the CICE which is accounted as a tax credit, instead of a reduction in social charges on wages.

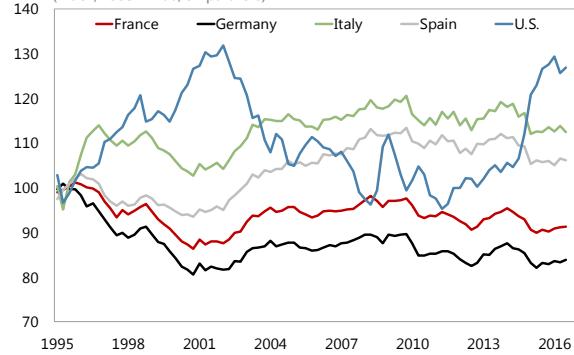
Figure 4. Price Competitiveness

The ULC-based REER appreciated mildly in the early 2000s...

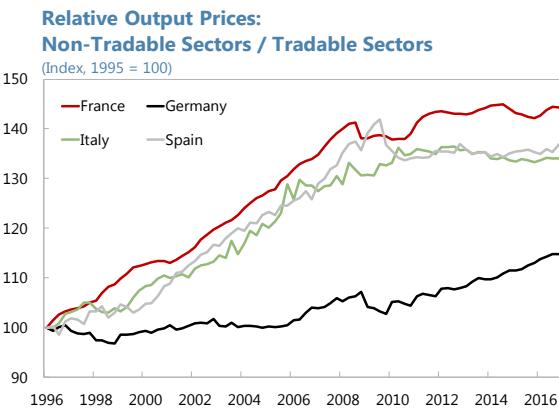


... as did the CPI-based REER, though both have depreciated somewhat since the crisis.

CPI-Based REER, Provided by Eurostat
(Index, 1995 = 100, 37 partners)

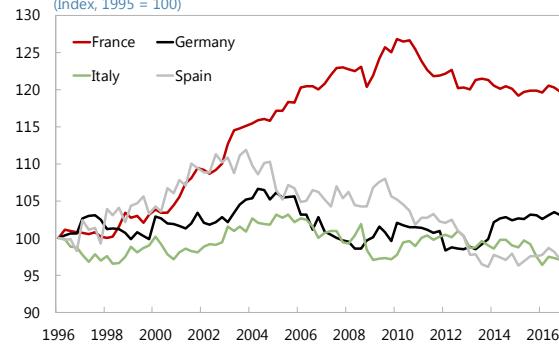


The relative price of non-tradable goods and tradable has strongly increased for the past 20 years ...



... and the relative price of tradable services and industrial goods also strongly increased between 2000 and 2010

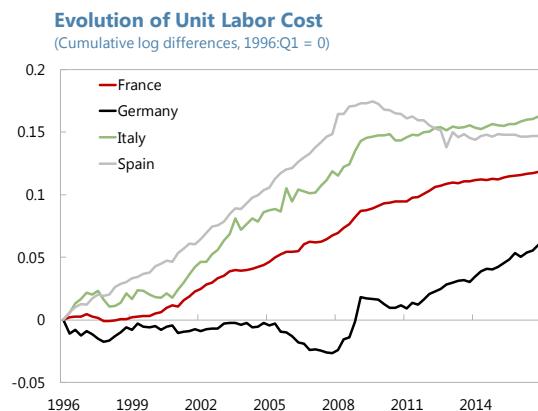
Relative Output Prices:
Tradable Services / Industry (excl. construction)
(Index, 1995 = 100)



Sources: Eurostat, INSEE and IMF staff calculations.

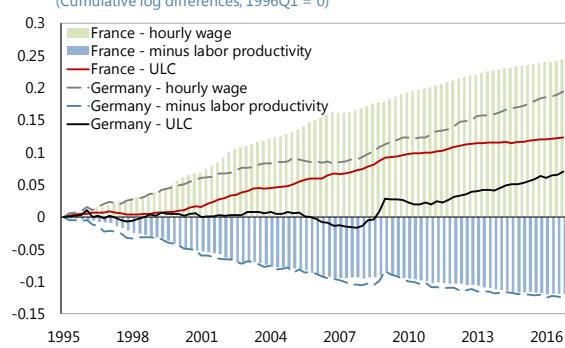
Figure 5. Cross-Country Comparisons of ULC

Significant cumulative increase in ULC ...



... and the differential with Germany was driven by wages

Evolution of Unit Labor Cost and Components
(Cumulative log differences, 1996:Q1 = 0)



Sources: Eurostat and IMF Staff calculations.

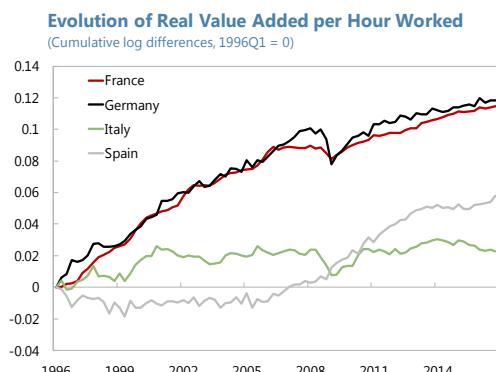
Sources: Eurostat and IMF staff calculations.

13. Non-price competitiveness. Non-price competitiveness can be affected by developments in productivity, product quality, technological complexity and integration in global supply chains.

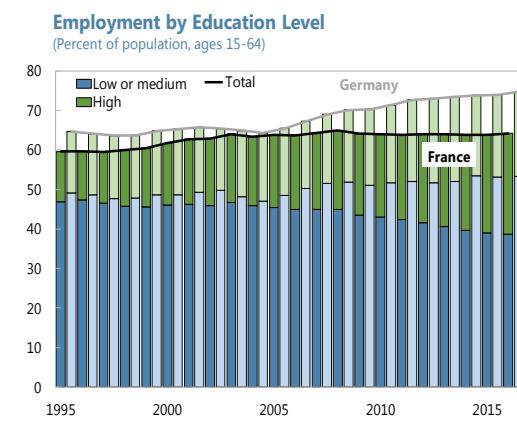
- *Productivity* (Figure 6): TFP growth has declined as in many other advanced countries, with the slowdown more substantial in services, rather than manufacturing. However, labor productivity and TFP kept pace with Germany (in part due to lower employment of unskilled workers and higher increase in real capital stock).
- *Product quality*. France remains relatively well placed in term of non-price competitiveness and product quality in the OECD.¹³ A study by Bas et al. (2014) shows that four of France's top ten manufacturing sectors are ranked in the top three leading sectors for non-price competitiveness among OECD countries. However, it also shows that the top three manufacturing sectors in which France is most competitive in the non-price/quality dimension—aeronautics, leather goods, and wine—account for only 7 percent of exports in 2013. Cheptea et al. (2014) show that French and German goods that are top quality range had better market share performance between 1995 and 2010 than other goods, after filtering out geographical and sectoral factors.

Figure 6. Productivity Growth and Input Accumulation

Labor productivity in France and Germany grew hand-in-hand...



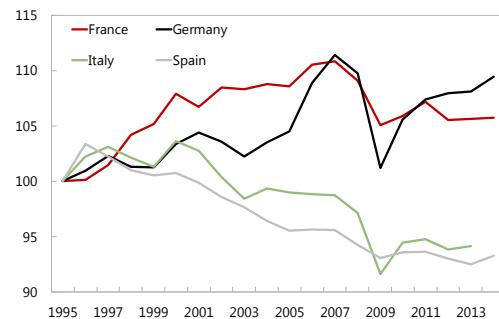
... labor productivity in France was supported by lower employment of unskilled labor



Sources: Eurostat, EU KLEMS and IMF staff calculations.

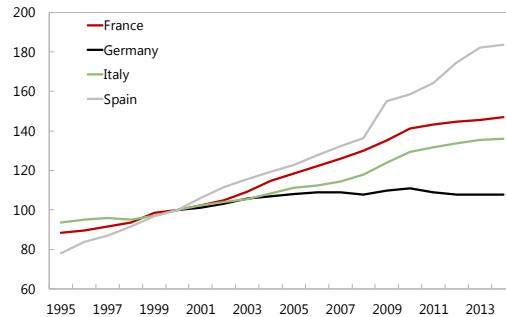
... TFP growth was stronger in France in the decade to 2005, but was overtaken by Germany in recent years

TFP Growth for the Total Market Economy
(Index, 1995 = 100)



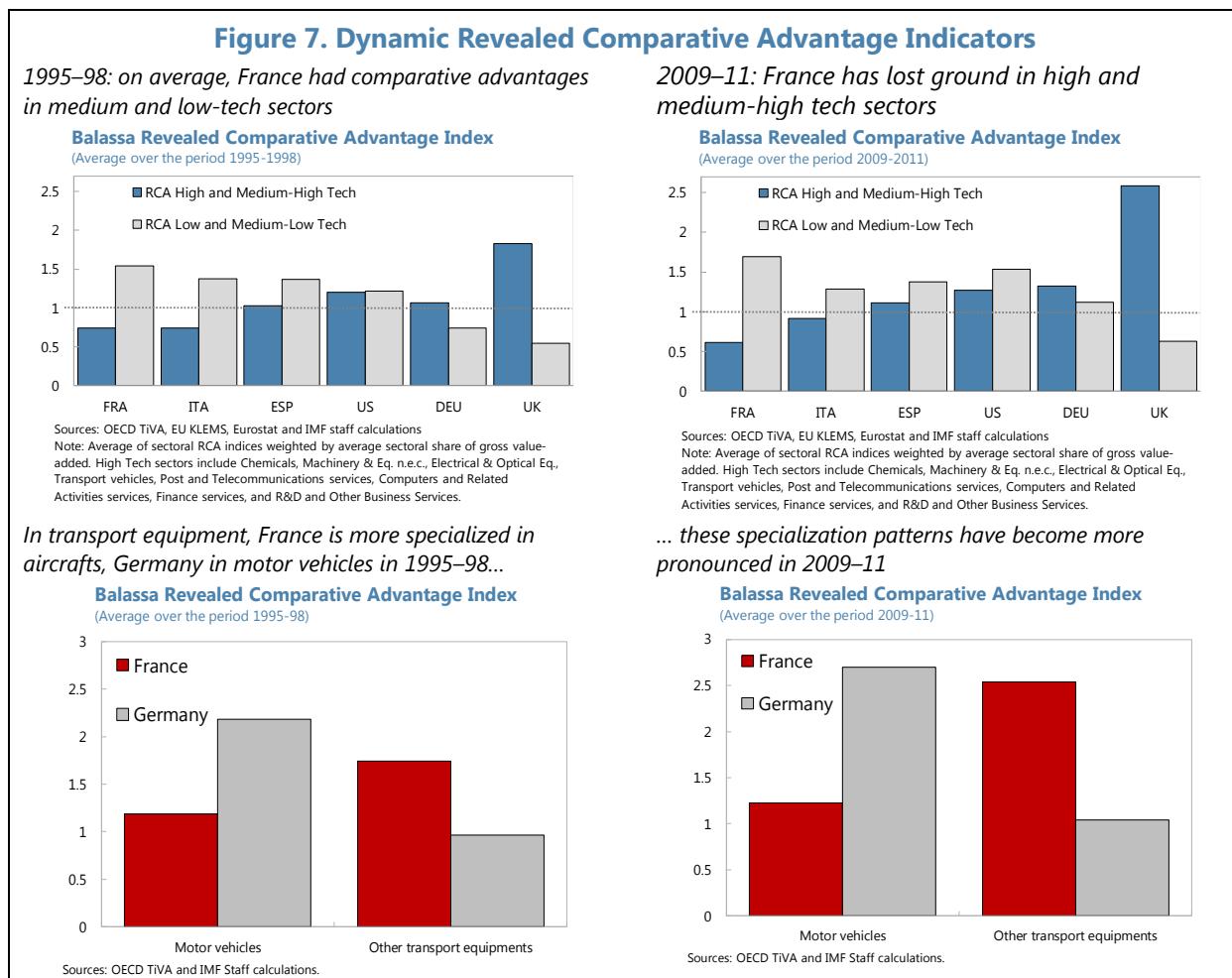
... and by higher capital accumulation

Real Stock of Capital per Worker, Manufacturing
(Index, 2000 = 100)



¹³ Quality or non-price competitiveness is related to charge mark-ups and is measured as a residual from a demand equation controlling for prices, and inversely related to an elasticity of substitution among goods.

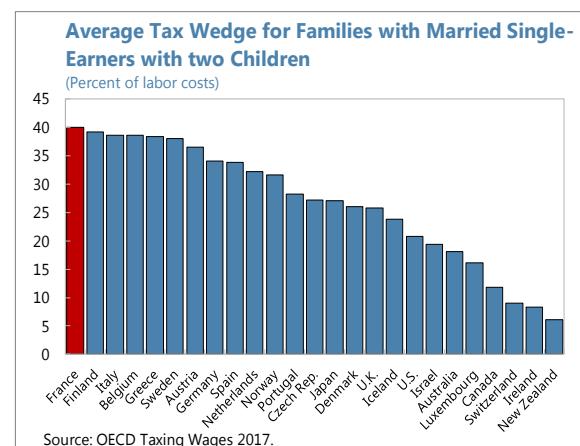
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- *Technology.* Since the mid-1990s, with a few notable exceptions, France's comparative advantage seems to have evolved toward "low and medium-low technology" sectors (see Figure 7 and Box 1). While this evolution could be the result of external shocks (see next section), it is also affected by policy choices and firms' decisions. The gradual loss of comparative advantage in higher tech goods and more knowledge intensive sectors (which are less impacted by price competition including from emerging markets) can generate challenges to differentiate products and respond to foreign competition.



¹⁴ Quality or non-price competitiveness is related to charge mark-ups and is measured as a residual from a demand equation controlling for prices, and inversely related to an elasticity of substitution among goods.

- *Global supply chains.* The extent to which exports are part of global supply chains can affect the competitiveness of exports in specific regions or sectors to the extent that this also affects the integration of exporters in production and distribution networks in destination countries. France's importance in the European value-chain and as a supplier of intermediate products has declined, with Germany having emerged as a key European hub. Despite a growing share of re-exports associated with its deeper integration in supply chains, Germany export's value-added contribution to GDP increased while it declined in France (IMF, 2014).¹⁵

14. Policies. A high and rising tax burden on businesses (with frequently changing rules), high labor tax wedges, and long-standing rigidities in product and labor markets constrain productivity of both tradable and nontradable sectors, by distorting the allocation of resources and preventing alignment of wages with productivity (see for instance Bas et al., 2014; Rapport Economique, Social et Financier, 2012 and 2016). Policies may have impacted cost competitiveness (e.g., through wages and taxes), and non-price competitiveness (e.g., through labor and product market rigidities that could impede resource allocation), which may have affected innovation, technological progress and product quality. Labor market institutions in particular may have contributed in wage developments that were not always well aligned with productivity growth, as also observed in several other European countries. In recent years, various reforms helped reverse the trend and contributed to improving competitiveness, including various labor and product market reforms (e.g., the Macron and El Khomri law), the CICE and the *Pacte de Responsabilité et Solidarité*, which helped contain unit labor cost growth.



15. Export specialization and trading partners. A country's export performance depends on its sectoral specialization and destinations, and thus global sectoral or geographical demand shocks. Our analysis suggests that:

- France's comparative advantage in medium to low tech sectors (Box 1) means that its exports are comparatively more exposed to price competition from fast growing emerging economies (see also existing literature);
- While geographical effects, and to a lesser extent sectoral specialization, can explain some of the loss in France's export market share, we find that France-specific factors are important drivers, especially for high-tech sectors (Section D). These findings are consistent with the literature).¹⁶

¹⁵ Cheptea et al (2014b) and Cezar et al. (2017) show that in 2011, France and Germany had similar ratios of domestic value-added content of exports to gross exports, at about 70 percent.

¹⁶ See Bas et al. (2014). Cheptea et al. (2014) find that French high-tech sectors have had worse export market share performance than all sectors on average.

- In addition to foreign demand effects, we find that relative price developments played an significant role in France's competitiveness loss, including with respect to their effect on high-tech exports. (Section E).¹⁷

Box 1. Evolution of France's Comparative Advantages Since the Mid-1990s

Since the mid-1990s, and despite exceptions, the comparative advantage of French exports has been in sectors that have a lower technological content or are less knowledge intensive, and has lost competitiveness in High-tech sectors (Figure 7).¹² Our analysis is based on a standard Balassa Revealed Comparative Advantage index of country i in sector s defined as:

$$RCA_{is} = \frac{\frac{X_{is}}{X_i}}{\frac{X_s}{X}},$$

the ratio between the share of exports of that sector in the total exports of country i and the share of that sector's exports in total world exports.³ This evolution of France's comparative advantage could be a concern because sectors with an overall lower technological content or that are less knowledge intensive tend to be more exposed to price competition including from fast growing emerging markets.

France's comparative advantage has evolved toward Low Tech sectors.⁴ Relative to peers, France is the only country that has experienced a decline of its comparative advantages in High Tech and knowledge intensive sectors since the mid-1990s, whereas all peers besides Italy strengthened their average comparative advantages in these sectors. As a result, by 2009–2011, France had the largest comparative disadvantage in these sectors on average among large European countries.

There are a few notable exceptions. With the sectoral aggregates available, the main High Tech manufacturing sector that increased its comparative advantage is the "Other transport equipment" sector (which accounts for about 6 percent of value-added exports in 2011), where France already had a comparative advantage in 1995. In contrast, Germany has increased its already strong comparative advantage in the "Motor Vehicles" sector which accounts for 13 percent of its value-added exports in 2011 (see bottom charts of Figure 7). In knowledge intensive services, France has gained a comparative advantage in exports of "Post and Telecommunications", but starting from a low base (these services account for only 0.8 percent of total value-added exports in 2011). France has also increased its comparative advantage in "Chemicals and Chemical Products" (RCA of about 1.55), which account for about 10 percent of exports.

¹ The classifications of sectors by their technological content (for goods) and knowledge intensity (for services) is from the Eurostat-OECD classification. In the rest of the paper, we denote "High Tech" sectors all sectors that are either high technology, medium-high technology, or are knowledge intensive sectors. All other sectors are considered "Low Tech". Cheptea et al. (2014b) use a similar classification of sectors. The classifications are available at:

http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:High-tech_classification_of_manufacturing_industries; and: [http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Knowledge-intensive_services_\(KIS\)](http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Knowledge-intensive_services_(KIS))

² The conclusions do not change whether we classify the utilities sector "Electricity, Gas and Water" as Low and Medium-low Tech (as we do here) or High or Medium-high Tech. In France, this sector includes some high-technology firms.

³ Our RCAs are constructed from sectoral trade in value-added exports from the OECD TiVA database. Alternative RCAs for manufacturing sectors provided by CEPII on its website also suggest a specialization of France in Low Tech manufacturing sectors: http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=26

⁴ The revealed comparative advantage indicators are aggregated by sectoral groups using value-added weights. Value-added is obtained from the EU-KLEMS database, and several sectors of the OECD TiVA had to be aggregated in the matching procedure. Our conclusions are robust if simple averages of sector RCAs are considered instead of weighted averages.

¹⁷ This suggests that some demand effects were specific to France's high-tech sectors.

D. Is “Bad Luck” to Blame? Shift-Share Analysis of Market Shares

16. This section applies standard statistical methods to disentangle the impact of sector specialization and trading partner demand from factors specific to France. Sector-specific or destination specific shocks would affect exporters differently depending on the sectoral and/or destination composition of a country’s exports. We will remove these common shocks, which can be seen as a form of “bad luck”, and identify the remaining factors specific to the exporting country. The exporting country fixed effect will capture shocks to export supply. But it would also capture effects related to demand, if, for example, some exporting countries may be hit more than others by a given decline of demand in a particular destination country and/or particular sector. The analysis in this section stops in 2011 due to data limitations, and therefore does not account for more recent developments.

17. The evolution of export market shares can be decomposed into global geographical, global sectoral and by exporter specific effects (Annex 2). Using an econometric shift-share analysis, we decompose changes in export market shares for 21 advanced economies, 63 export destination countries and 22 manufacturing and service sectors during 1995–2011.¹⁸ Shift-share decompositions have been computed in several recent papers (see for instance among others: Gaulier et al., 2013; Cheptea et al. 2014; Bas et al., 2014; Cezar et al., 2017).¹⁹ The decomposition identifies, year by year, the contribution of pure geographical and sectoral effects that are common to all countries, and of effects that are specific to the exporting country. The sets of destination fixed effects, sectoral fixed effects and exporter fixed effects can be used to estimate the respective predicted contribution of common global geographical shocks, common global sectoral shocks and exporter-specific shocks to the evolution of a country’s export market shares. These common fixed effects are then aggregated at the exporting country level using its export composition by sectors or by destination. The decomposition however, does not allow to identify the drivers of each of these effects identified in the decomposition (for instance, it does not allow to identify what is driving exporter-specific shocks).²⁰

18. We construct market shares based on data on the domestic value added content of exports (also used in Section B). The advantage of this variable from the OECD TiVA (Trade in Value-Added) database is that it nets out the foreign value added embodied in domestic exports and therefore removes the portion of gross exports that comes from imported parts or services that are re-exported. Compared to gross exports, this is a more relevant measure of how a country

¹⁸We perform the shift-share decomposition of export market shares on a sample of 21 advanced economies. This implies that we are comparing advanced economies among themselves. Other papers (such as Cheptea et al., 2014) also include fast growing emerging markets in their sample of exporters.

¹⁹The paper closest to our study (Cezar et al., 2017) differs in that they consider indicators of market shares comprising the domestic market and with a focus on all activities used in the production for manufacturing final demand.

²⁰For instance, if the demand addressed by an importer to a sector evolves *asymmetrically* across exporters of different countries, even for reasons not related to the exporters, this shock will be classified as an exporter-specific shock.

contributes to global trade, and how its exports affect its own economy, as it focuses only on the domestic content of the production process, including any value added coming from upstream domestic suppliers that is embodied in the exports.

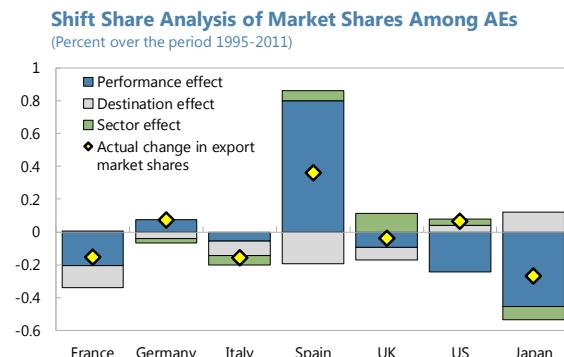
19. We find that France-specific factors played a significant role in explaining the loss in export market shares, as did demand from trading partners (Figure 8). After aggregating the estimated impact of each set of exporter, destination and sectoral fixed effects on the performance of exports, the econometric analysis for the period 1995–2011 shows:²¹

- The explained evolution of market shares appears to be related to "France-specific effects", which had the largest contribution to the overall market share performance of France over the entire period 1995–2011.
- Geographical shocks (common to sectors of all countries) also negatively impacted France's export market share, especially before the global financial crisis. This suggests that comparatively lower growth in France's trading partners (those that import French goods) played a role in explaining France's loss in world market share (further studied Section E).
- Sectoral shocks (common to all countries) had little impact for the full period.
- In a sample of 21 advanced economies, France has the fourth largest negative own exporter performance effect (-20 percent), after Japan, the US, and Switzerland.
- Based on a separate regression restricted to High Tech sectors only, aggregation at the country level shows that the France-specific effect becomes more negative (-40 percent), while common geographical shocks playing a smaller role (top right chart).
- The decomposition of France's market shares year-by-year shows a positive performance effect for France until 1998, negative marginal year-by-year effects starting 1999 until 2008, and some moderate recovery afterwards.
- Service sectors were drivers of market shares globally while manufacturing sectors' market shares contracted (bottom left chart). China and India generated a strong demand for exports while large European countries, the US and Japan relatively slowed down export demand (bottom right chart).

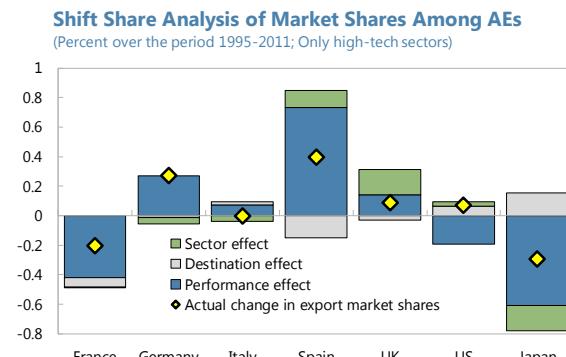
²¹ The analysis is performed in two rounds: first, it is done on the entire period 1995–2011 as one single period (top two charts); second, it is done year-by-year (top two bottom charts). The charts shows only the portion of market share that is explained by the regression analysis.

Figure 8. Shift-Share Analysis of Export Market Shares

All sectors

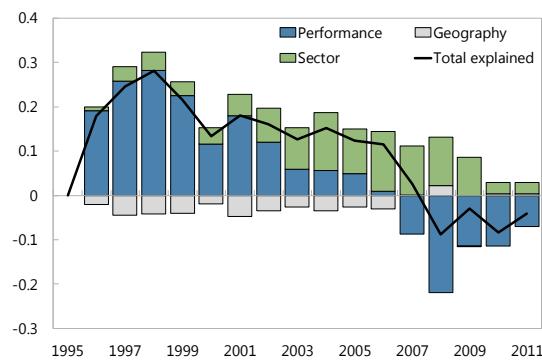


High and Medium-High Tech sectors



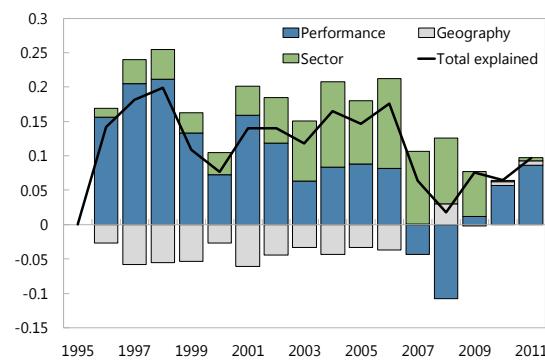
Important country-specific effects over time in France....

France: Decomposition of Export Market Share Performance
(Percentage point contribution)



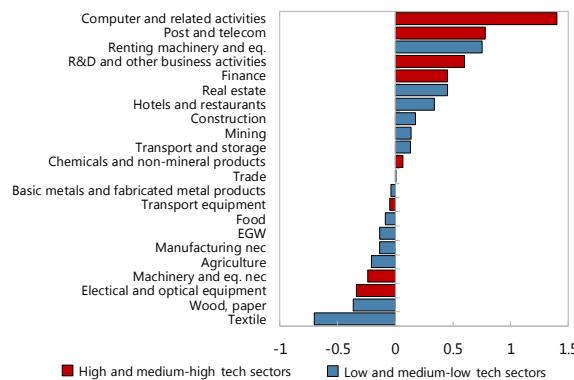
And for Germany....

Germany: Decomposition of Export Market Share Performance
(Percentage point contribution)



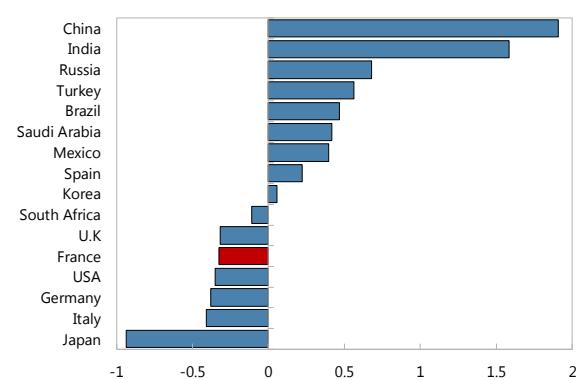
Sector effects are positive for services, negative for manufacturing sectors

Normalized Sectoral Fixed Effect



Positive geographical effects for BRICS+Turkey, negative for large advanced economies

Normalized Destination Fixed Effect



Sources: OECD TiVA and IMF Staff calculations.

E. How Did Price Competitiveness and Foreign Demand Impact Performance of Value-Added Exports?

20. This section aims to identify to what extent price competitiveness and foreign demand can explain France's export performance in value added terms. In Section D, France-specific effects were in effect a "black box"—a fixed effect estimated under the assumption that sectoral and geographical fixed effects (shocks) were common across all exporting countries. In practice, this may not always be the case; demand shocks from an importer could also be specific to a sector of exporting countries irrespective of supply shocks.²² Here, we focus on a particular country-specific effect: price competitiveness by sectors, between the exporting country, the destination country, and other countries exporting to that destination country. It controls for foreign demand in the destination country, and assesses its impact sector by sector. The findings at a sectoral and destination country level are then aggregated to perform a comparison between France and Germany, showing that prices and demand played a role in the loss of competitiveness. The analysis based on value added exports stops in 2011 due to data availability, and does not allow to study more recent developments.

21. Panel regression analysis is used to disentangle the respective impact of price competitiveness and of foreign demand on the performance of exports of goods and services (Box 3). As in Section D, we rely on the OECD TiVA database, which considers the domestic value-added of exports, netting out re-imports and re-exports. The econometric analysis is performed with annual data for the four large euro area countries (France, Germany, Italy, Spain), the United Kingdom and the United States, and on a sample of 63 destinations countries and 22 sectors (see appendix). The aggregate demand for exports from each destination country is measured by the (real) domestic demand indicator from the World Economic Outlook.

22. We include several relative price variables in the empirical specification. First, we consider two indicators of price competitiveness between exporting countries and destination countries: the nominal bilateral exchange rate between the exporting country and the destination country; the relative GDP deflator of the exporting country and of the destination country. Second, we consider two indicators of the price competitiveness of an exporting country relative to all other countries exporting to the same destination: a nominal effective exchange rate between the exporting country and all other countries exporting to the same destination; the GDP deflator of the exporting country relative to all other countries exporting to the same destination.^{23 24} The empirical specification and the variables are described in Annex 3.

²² For example, consumer preference shocks in importing countries could affect the same sector differently in two exporting countries, or could affect two sectors of a given exporting country differently.

²³ These two variables are constructed on a sample of 21 exporting advanced economies, to be able to capture the price competitiveness of each of the six countries in third markets relative to other advanced economies.

²⁴ Price competitiveness and the exchange rate may themselves be impacted by macroeconomic developments and by policies. However, potential endogeneity concerns of the exchange rate are mitigated at two levels. First, the regressions are performed at the sector and destination level. it is unlikely that exports of a specific sector toward a specific destination country could have a significant impact on the exchange rate or prices. Second, the specification also includes a full set of home country/destination country/sector fixed effects which control for all time invariant unobserved factors that could jointly affect exports and explanatory variables. However, some endogeneity concerns may remain. The literature usually also sometimes includes real GDP in export regressions as a proxy for supply capacity, but it is often not well signed or not significant (See for instance Campa and Goldberg, 2005; Leigh et al., 2017).

23. The econometric findings for the panel of 6 exporting countries reported in Table 1 show that both foreign demand and price competitiveness significantly affect the value of exports. The estimated coefficients on all but one explanatory variables are statistically significant at the 1 percent level. The findings imply that a one percent increase in real domestic demand in a destination country on average results in a 1.6 percent increase in the value of exports of a particular sector. This is the same order of magnitude as found in the literature that has studied the determinants of good exports of Eurozone countries (Chen et al., 2013; Bayoumi et al., 2011). The estimates also imply that a one percent depreciation in the nominal bilateral exchange rate, or an one percent increase in the ratio of GDP deflator of the destination country to the GDP deflator of the exporting country, results in a 0.4 increase in the value of exports on average. Price competition from competitors in the destination country also seems to affect the value of exports: a 1 percent increase in the ratio of the average GDP deflators of all exporters to the GDP deflator of the exporting country considered is associated with a 0.2–0.25 increase in the value of exports from the exporting country.

Table 1. France: Dependent Variable: Log (Exports)

Regression Results

Dependent variable:	Log (Export) (ijst)		
	(1)	(2)	(3)
Log (aggregate demand) (jt)	1.590***	1.575***	1.695***
log (bilateral NER) (ijt)	0.393***	0.374***	
Log (relative bilateral VA deflators) (ijt)	0.406***	0.381***	
Log (VA deflator rel. to all exporters) (ijst)		0.205***	0.260***
Log (NER rel. to all exporters) (ijst)		0.00194	0.0118
Constant	-7.264***	-7.166***	-8.778***
Source*Destination*Sector Fixed Effects	YES	YES	YES
Observations	137,811	137,811	137,811
R-squared	0.938	0.938	0.938

Sources: OECD TiVA database and the IMF World Economic Outlook.

Notes: Observations clustered by Exporter*Destination*Sectors.

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

24. Foreign demand and price competitiveness explain a large share of the relative evolution of aggregate exports for France and Germany (Table 2). The econometric analysis allows us to estimate in a bottom-up approach the average impact of foreign demand and of relative prices on the export performance of both France and Germany. We focus on the period following the year 2000 during which, as described in the second section, France's export performance and price competitiveness worsened significantly. We find that:

- Overall, prices and foreign demand each respectively explain about one quarter (10 percentage points) of the difference in the performance of France's exports relative to Germany's exports over a 10-year period:
 - The nominal exchange rate effect was moderately negative and of the same order of magnitude both for France and Germany.
 - Relative output prices contributed some 4 percentage points less to the export performance of France relative to Germany.²⁵
 - The demand addressed to France exports was significantly below that of Germany. We estimate that this reduced export growth by 6 percentage points over a 10-year period relative to Germany
- The remaining half of the difference (12 percentage points) is unexplained and is attributed to unobserved factors, which would encompass changes in non-price competitiveness.

Table 2. France: Predicted Contributions of Foreign Demand and Relative Prices to Export Performance

Predicted Effects (Log changes over 2001-11)					
	Demand	NER	Relative output price	Total predicted	Actual log change in total exports
France	34%	-5%	5%	34%	63%
Germany	40%	-5%	9%	45%	85%
Difference	6%	0%	4%	10%	23%

Sources: IMF Staff calculations.

25. Foreign demand and price competitiveness differentials relative to Germany seem to have impacted France mainly through the export performance of High Tech sectors (Table 3).

Applying the aggregation methodology (8) by sectors first allows to split the contribution to the aggregate export performance of High Tech and Low Tech sectors respectively. It appears that the negative foreign demand differential addressed to France's exports was entirely explained by High Tech sectors, while foreign demand addressed to France's Low Tech exports was moderately higher than the foreign demand addressed to Germany's Low Tech sectors.

²⁵ Compression of margins discussed in earlier sections may have help limit the loss of price competitiveness, despite the steady increase in costs.

Table 3. France: Predicted Impact of Foreign Demand and Price Competitiveness on High Tech and Low Tech Sectors' Exports

Period 2001-2011		Demand	NER	Relative output price	Total predicted
France	LT industries	15.9%	-2.1%	3.1%	16.8%
	HT industries	17.7%	-2.6%	2.4%	17.5%
	Total all sectors	33.6%	-4.8%	5.5%	34.4%
Germany	LT industries	14.6%	-1.5%	3.8%	17.0%
	HT industries	25.6%	-3.3%	5.9%	28.2%
	Total all sectors	40.3%	-4.8%	9.8%	45.3%

Sources: IMF staff calculations

Note: Table reports sectoral contributions to overall predicted log change in exports at the country level

F. Conclusions

26. This paper presents evidence that France has lost external competitiveness over the past two decades, reflecting both price and non-price factors. Global market shares of exports have declined more than in many peer countries, both in gross and value added terms. The decline has been notable both for goods and services, and for destinations within and outside the OECD, and has been associated, with a few notable exceptions, with an apparent decline in France's comparative advantage in High Tech sectors. As a result, France's overall external position has weakened, and the contribution of tradable sectors to France's growth in real value added and employment has been constrained.

27. We have reviewed a number of possible explanations for France's apparent loss of competitiveness:

- Some degree of REER overvaluation, as measured against France's medium-term fundamentals according to the IMF's External Sector Assessment;
- A relative decline in cost competitiveness before the global financial crisis:
 - Despite France's solid productivity growth and ULC dynamics broadly in line with other euro area countries (with the exception of Germany), wage growth in the services sectors were not fully aligned with productivity growth;
 - Growing costs of services inputs, in particular from non-tradable sectors, which may reflect a lack of competition and labor cost pressures;
- Comparative advantages that, despite a few notable exceptions, evolved into sectors and products with a medium or lower technological content, exposing French exports to price competition including from fast-growing emerging markets;
- Effects from partner country growth and relative price developments, mainly affecting France's High Tech sectors;

- Other, France-specific effects that are not studied here in detail include policies and institutions—such as labor and product market rigidities, and a high and variable tax burden—which can affect productivity and competitiveness through their impact on investment, innovation, allocation of labor, as well as wages and other input costs.²⁶

28. Since the crisis, cost competitiveness indicators have improved somewhat, reflecting wage moderation and policies to lower the labor tax wedge. Given data limitations, it is not clear to what extent non-price factors have evolved in recent years. Successive governments have advanced structural reforms aimed at addressing various rigidities of labor and product market, as well as high tax burden on capital and labor, in part to address weaknesses in external competitiveness. Overall, however, given the still limited contribution of net exports to GDP growth and the weak external position as assessed by the IMF's External Sector Assessment, external competitiveness will remain an important and policy-relevant topic in France for the coming years.

²⁶ See previous chapter for an analysis of possible distortions arising from the system of capital taxation.

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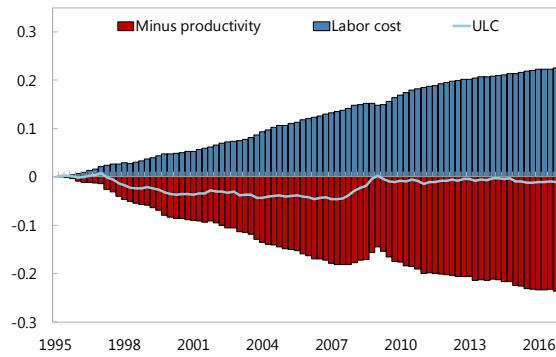
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Annex I. Decomposition of Unit Labor Costs by Sectors

Figure 1A. ULC Have Risen More than in Germany as a Result of Wage Growth not Aligned with Labor Productivity in More Sheltered Sectors

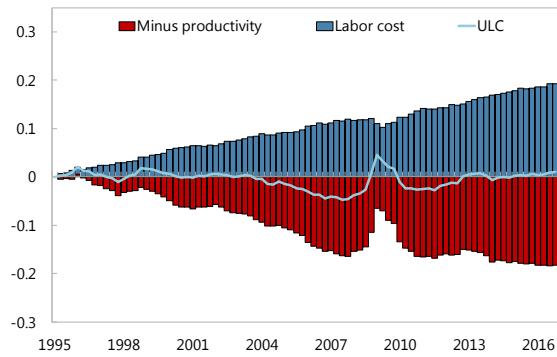
France: Industry Excluding Construction

(Cumulative Log difference q-o-q)



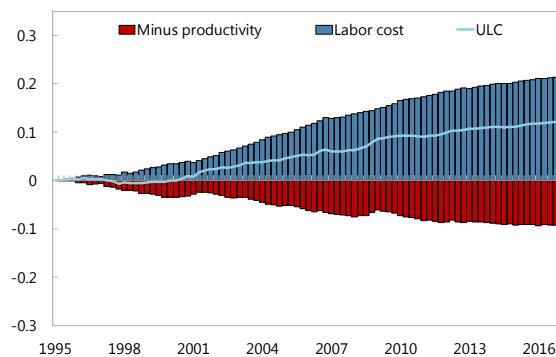
Germany: Industry Excluding Construction

(Cumulative log difference q-o-q)



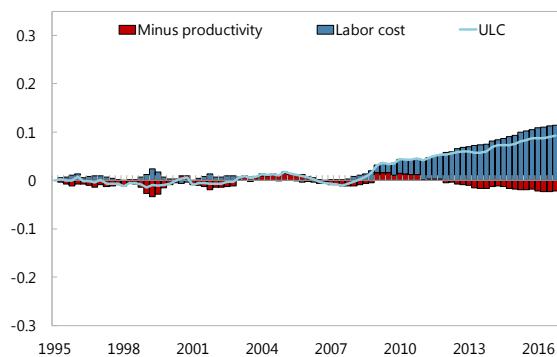
France: Tradable Services

(Cumulative Log difference q-o-q)



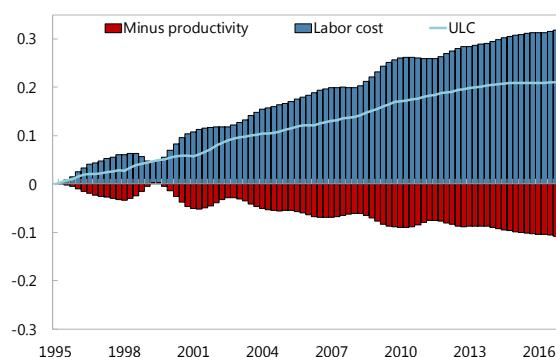
Germany: Tradable Services

(Cumulative log difference q-o-q)



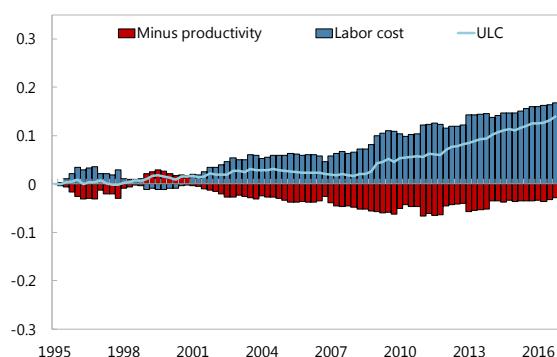
France: Non-Tradable Sectors

(Cumulative log difference q-o-q)



Germany: Non-Tradable Sectors

(Cumulative log difference q-o-q)

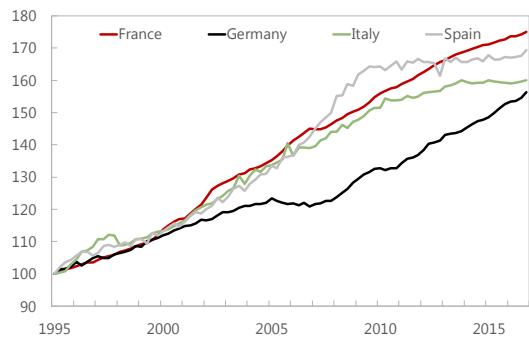


Sources: Haver Analytics and IMF staff calculations.

Figure 1B. Wage Dynamics Was Particularly Strong in Non-Tradable Service Sectors

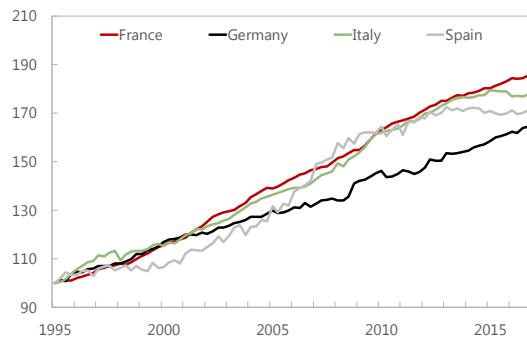
Hourly Wages: Total Economy

(1995 = 100)



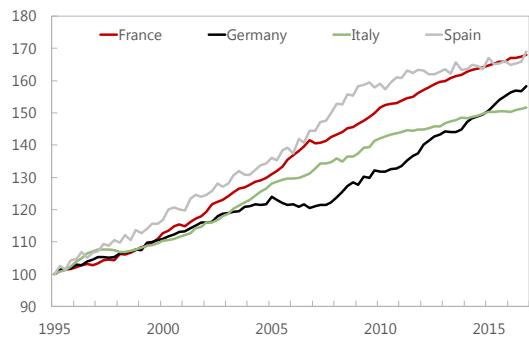
Hourly Wages: Industry excluding Construction

(1995 = 100)



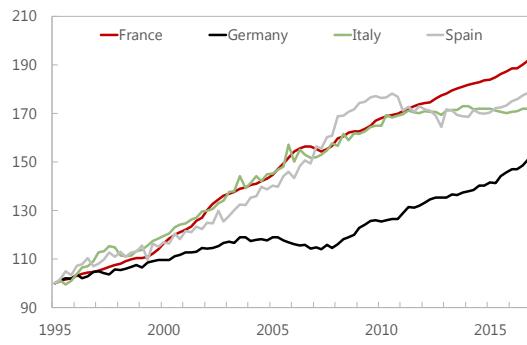
Hourly Wages: Tradable Services

(1995 = 100)



Hourly Wages: Non-tradable Services

(1995 = 100)



Sources: Haver Analytics and IMF staff calculations

Annex II. Shift-Share Methodology

In international trade, the shift-share analysis typically aims at measuring the contribution of countries' geographical and sectoral specialization to the growth of their exports or of their exports' market share. We follow an econometric approach used, among others, by Cheptea, et al. (2014), Bas et al. (2014), Gaulier et al. (2014). In contrast to our study which considers the domestic value-added content of exports of goods and services, these papers study gross exports of goods. A recent paper by Cezar et al (2017) also performs a decomposition of the market shares of the domestic value added content of goods and services, using a different dataset (the World Input Output Database), but for only 8 countries. In the first step, export growth between a destination country and an exporting country at sectoral level is explained by three terms: a destination country fixed effect, a sectoral fixed effect and an exporter country fixed effects. Each of these sets of fixed effect is estimated for each year between 1996 and 2011:

$$d \log(X_{ijst}) = \alpha_{it} + \beta_{jt} + \gamma_{st} + \varepsilon_{ijst} \quad (1)$$

Where $d \log(X_{ijst})$ is the change in log of the value of exports from country i to country j of goods of sector s , and α_{it} , β_{jt} , γ_{st} are respectively a set of source country i , destination country j and sector s fixed effects, and ε is a residual.

In the second step, the bilateral and sectoral export growth are aggregated at the country level as the log change in a Törnqvist index of exports:

$$d \log(X_{it}) \approx \sum_{js} \frac{w_{ijst}}{w_{it}} \cdot d \log \left(\frac{X_{ijst}}{X_{ijst-1}} \right) \quad (2)$$

$$\text{where } w_{ijst} = \frac{1}{2} \cdot \left(\frac{X_{ijst}}{X_t} + \frac{X_{ijst-1}}{X_{t-1}} \right) \text{ and: } w_{it} = \frac{1}{2} \cdot \left(\frac{X_{it}}{X_t} + \frac{X_{it-1}}{X_{t-1}} \right).$$

By combining equation (1) and equation (2), we obtain:

$$d \log(X_{it}) = \alpha_{it} + \sum_j \frac{w_{ijt}}{w_{it}} \cdot \beta_{jt} + \sum_s \frac{w_{ist}}{w_{it}} \cdot \gamma_{st} \quad (3)$$

Note that the OLS coefficient estimates $\hat{\alpha}_{it}$, $\hat{\beta}_{jt}$ and $\hat{\gamma}_{st}$ are estimated relative to destination country and a sector (the constant is dropped so that all exporter fixed effects are kept). The fixed effects can be normalized in the following way to obtain estimates that are independent of the omitted country and sector:

$$\begin{cases} \tilde{\alpha}_{it} = \hat{\alpha}_{it} + \sum_j w_{jt} \cdot \hat{\beta}_{jt} + \sum_s w_{st} \cdot \hat{\gamma}_{st} \\ \tilde{\beta}_{jt} = \hat{\beta}_{jt} - \sum_j w_{jt} \cdot \hat{\beta}_{jt} \\ \tilde{\gamma}_{st} = \hat{\gamma}_{st} - \sum_s w_{st} \cdot \hat{\gamma}_{st} \end{cases}$$

The decomposition of exports from equation (3) can now be written:

$$d \log(X_{it}) = \tilde{\alpha}_{it} + \sum_j \frac{w_{ijt}}{w_{it}} \cdot \tilde{\beta}_{jt} + \sum_s \frac{w_{ist}}{w_{it}} \cdot \tilde{\gamma}_{st} \quad (4)$$

Subtracting from both sides of equation (4) the long change in world export $d \log(X_t)$, and taking exponentials, we obtain the following decomposition of the predicted growth of export market shares:

$$1 + g_{it} = (1 + perf_{it}) \cdot (1 + geo_{it}) \cdot (1 + sect_{it}) \quad (5)$$

Where the first, second and third terms are respectively the exporter-specific performance (defined as $\exp(\tilde{\alpha}_{it} - d \log(X_t))$), the destination specific effect, and the sectoral specific effect.

Annex III. How Do Price Competitiveness and Foreign Demand Impact Exports? A Methodology

To uncover the respective importance of foreign demand and price competition in driving export flows, we regress the annual value of exports of goods classified in sector s from country i to country j on indicators of exchange rates, relative output prices and foreign demand. The specification is estimated in (log) levels, e.g. it can be interpreted as a long-term relationship between the respective variables considered. To account for systematic and persistent differences in the levels of exports between countries, we include a complete set of fixed effects exporting country/destination country/sector. Hence, the coefficients are estimated on the variation within exporting country, destination country and sector.

Specifically, we consider the following specification:

$$\begin{aligned} \log(X_{ijst}) = & \alpha + \theta \cdot \log(Demand_{jt}) + \beta \cdot \log(NER_{ijt}) + \varphi \cdot \log\left(\frac{P_{jt}}{P_{it}}\right) \\ & + \delta \cdot \log\left(\frac{NER_{ijt}}{\sum_k w_{kjst} \cdot NER_{kjt}}\right) + \phi \cdot \log\left(\frac{\sum_k w_{kjst} \cdot P_{kt}}{P_{it}}\right) + F_{ijt} + \varepsilon_{ijst} \end{aligned} \quad (6)$$

Where: $\log(X_{ijst})$ is the log of exports of sector s from country i to country j during year t , $\log(Demand_{jt})$ is the log of total domestic demand (in current price) in destination country j , $\log(NER_{ijt})$ is the log nominal bilateral exchange rate averaged over year t between the exporting country i and the destination country j ,

$$\log\left(\frac{P_{jt}}{P_{it}}\right)$$

is the log of the ratio of the GDP deflator of the destination country i and of the GDP deflator of the exporting country j ,

$$\log\left(\frac{NER_{ijt}}{\sum_k w_{kjst} \cdot NER_{kjt}}\right)$$

is the log of the ratio of the average bilateral exchange rate between the exporting country i and the destination country j and of the weighted average of the bilateral exchange rates between all exporting country k and the destination country j , where the weight w_{kjst} is the share of sector s exports from country k to country j in the total world exports to country j of goods from sector s . Similarly,

$$\log\left(\frac{\sum_k w_{kjst} \cdot P_{kt}}{P_{it}}\right)$$

is the log of the ratio of the weighted average of the GDP deflators of all countries k exporting to country j , where the weight is defined above, and of the GDP deflator of country i . F_{ijst} is a complete set of fixed effects exporting country i / destination country j / sector s , and ε_{ijst} are i.i.d. residuals that are clustered by exporting country i , destination country j and sector s . Export data are from the OECD Trade in Value-Added dataset. Domestic demand, exchange rates and GDP deflators are from the World Economic Outlook.

From equation (6), the predicted log change in exports can be estimated as follows:

$$\begin{aligned} \Delta \log(\hat{X}_{ijst}) = & \hat{\alpha} + \hat{\theta} \cdot \Delta \log(Demand_{jt}) + \hat{\beta} \cdot \Delta \log(NER_{ijt}) + \hat{\phi} \cdot \Delta \log\left(\frac{P_{jt}}{P_{it}}\right) \\ & + \hat{\delta} \cdot \Delta \log\left(\frac{NER_{ijt}}{\sum_k w_{kjst} \cdot NER_{kjt}}\right) + \hat{\phi} \cdot \Delta \log\left(\frac{\sum_k w_{kjst} \cdot P_{kt}}{P_{it}}\right) \end{aligned} \quad (7)$$

And the predicted aggregate log change in exports at the country level is approximated by a Törnqvist aggregation index:

$$\Delta \log(\hat{X}_{it}) = \sum_{j,s} \frac{1}{2} \cdot (v_{ijst} + v_{ijst-1}) \cdot \Delta \log(\hat{X}_{ijst}) \quad (8)$$

$$\text{Where } v_{ijst} = \frac{X_{ijst}}{X_{it}}$$

From equations (7) and (8), the predicted contribution of foreign demand to the country level log change exports is given by:

$$\sum_{j,s} \frac{1}{2} \cdot (v_{ijst} + v_{ijst-1}) \cdot \hat{\theta} \cdot \Delta \log(Demand_{jt})$$

And the predicted contribution of prices by:

$$\sum_{j,s} \frac{1}{2} \cdot (v_{ijst} + v_{ijst-1}) \cdot \left[\begin{array}{l} \hat{\beta} \cdot \Delta \log(NER_{ijt}) + \hat{\phi} \cdot \Delta \log\left(\frac{P_{jt}}{P_{it}}\right) + \hat{\delta} \cdot \Delta \log\left(\frac{NER_{ijt}}{\sum_k w_{kjst} \cdot NER_{kjt}}\right) \\ + \hat{\phi} \cdot \Delta \log\left(\frac{\sum_k w_{kjst} \cdot P_{kt}}{P_{it}}\right) \end{array} \right]$$