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The Impact of Trade
and Foreign Direct
Investment on Labour
Markets: The French Case

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NO.9

**THE IMPACT OF TRADE AND FOREIGN DIRECT INVESTMENT ON LABOUR MARKETS:
THE FRENCH CASE**

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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SUMMARY

This paper studies whether the belief is justified that foreign trade and capital outflows have dramatically reduced the number of jobs available to French workers and are leading to a substantial decline in French wages, especially of low-skilled workers.

The link between trade and employment is examined first and reveals that world demand for French exports has been the driving force behind French economic growth. Taking developments in imports into account enables an estimate to be made of the net impact of foreign trade on employment. The impact on total employment is small but for individual industries the positive and negative effects can be substantial. As regards impact on wages, the study shows that skilled labour in exporting industries has benefited relatively to skilled labour in import-competing industries.

Inward and outward capital flows are small in relation to domestic gross investment for most sectors, especially for those where employment is declining. The flows follow the same pattern as trade flows with most going to or coming from EC countries and other OECD countries.

L'IMPACT DES ÉCHANGES ET DE L'INVESTISSEMENT DIRECT ÉTRANGER SUR LES MARCHÉS DU TRAVAIL : LE CAS FRANÇAIS

RÉSUMÉ

Ce document examine le bien-fondé de l'idée reçue suivant laquelle les échanges internationaux et les flux de capitaux ont réduit sérieusement le nombre d'emplois à la disposition des travailleurs en France et sont en train de faire baisser les niveaux salariaux, surtout à l'encontre des travailleurs français moins qualifiés.

D'abord le rapport entre les échanges et l'emploi est étudié et il est démontré que la demande internationale de produits français exportés a constitué l'élément moteur de la croissance économique française. Compte tenu de l'évolution des importations on est en état d'estimer l'effet net des échanges sur l'emploi. Au niveau global l'impacte sur l'emploi est limité mais pour certaines industries spécifiques les effets négatifs ou positifs sont parfois substantiels. En ce qui concerne l'impact salarial, l'étude démontre que la main-d'oeuvre qualifiée dans les industries d'exportation a profité relativement à la main-d'oeuvre qualifiée dans les industries en concurrence avec l'importation.

Dans la plupart des secteurs, et en particulier dans ceux où l'emploi diminue, les mouvements d'exportation et d'importation du capital sont limités par rapport à l'investissement interne brut. Les flux de capitaux suivent les mêmes modèles que les échanges avec la plus grande partie concernant les pays de la CE et les autres pays de l'OCDE.

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INTRODUCTION

As in many other OECD countries, the period 1993-4 has witnessed an increasingly heated debate in France among policy-makers about the impact of foreign trade and foreign direct investment on French jobs. The debate has been fuelled by reports suggesting that foreign trade and capital outflows have dramatically reduced the number of jobs available to French workers.² It revealed a widespread and strong belief among French policy-makers (and many industrialists as well) that imports from "dissimilar" countries (i.e., countries with wages significantly lower than French wages) are much more costly in terms of number of jobs than imports from "similar" countries and are leading to a substantial decline in French wages -- especially those of low-skilled labour.

This paper aims to provide more information about the impact of trade and capital flows on French employment and wages. As underlined by Baldwin (1993), most of the recent empirical literature on these issues tests the hypothesis that the huge world trade flows are fuelling rapid worldwide factor price equalization -- hence driving down the relative wage of unskilled labour and driving up that of skilled labour in OECD countries. This paper does not follow this approach because it seems rather extreme on theoretical as well as empirical grounds. First, factor price equalization requires stringent assumption: indeed, labour migration or capital flows reflect the lack of effective factor price equalization [Woodland (1982)]. Second, French labour markets do not exhibit the flexible functioning which is necessary for a rapid factor price equalization process. Indeed, evidence which would reveal ongoing factor price equalization at work in France is just not there, as shown below.³

Rather, this paper relies on an approach based on three other lessons suggested by pure trade theory. First, trade has a small impact (if any) on the *total* number of jobs available in an economy: total unemployment is mainly driven by macroeconomic forces and the functioning of the labour market itself. Second, changes in the relative prices of traded goods and services have a noticeable impact on the relative wage paid to unskilled labour by these industries. Lastly, capital outflows and inflows are based on very complex motives: as a result, simple relations -- such as a decline in domestic jobs as a result of capital outflows -- are unlikely. These lessons lead to the following conclusion: most of the developments that the French debate on trade was focusing on are more related to domestic causes than to international trade.

The paper is organized as follows. Section I focuses on the relationships between trade and employment in the French case. It starts by looking at the link between exports and employment which is so crucial in a debate about multilateral trade negotiations: it shows the extent to which during the last fifteen years, world demand for French exports (the derived demand for French labour by foreign consumers) has driven French growth. Then, section I takes into account the import side by estimating the number of jobs lost in France because domestic consumers prefer foreign goods (the derived "non-demand" of French labour by French consumers). Combining these two conflicting forces (the derived demand for French labour by foreign consumers and the derived non-demand for French labour by French consumers) allows us to make an estimate of the *net* impact of foreign trade on French employment. As expected by the theory, the estimated net impact of trade on *total* employment is very small and (for most of the period examined) positive. But the net impact on employment *by industry* can be substantial in both directions -- negative as well as positive.

Section II explores the relationships between trade and the various types of jobs defined by their skill requirements -- shifting the focus from trade and the number of jobs to trade and wages. It provides two essential results. First, trade is unlikely to have a straightforward impact on the relative wages of French skilled and unskilled labour because France is not characterized by a high relative endowment of skilled labour (with respect to unskilled labour) when compared to the rest of the world: if she exports relatively skill-intensive goods and services to certain countries, she exports relatively unskilled labour-intensive goods and services to other countries. The second result is that by contrast there are substantial differences in the evolution (from 1984 to 1991) of the relative wages paid to *skilled* labour: the wages

paid to skilled labour by export industries have increased substantially with respect to the wages paid to skilled labour by import-competing industries.

Lastly, Section III examines French foreign direct investment flows and provides three results. First, the shares of French outward and inward foreign direct investment flows in domestic gross investments are small for most sectors -- and in particular, for those exhibiting net job losses. Second, foreign direct investment flows tend to have the same geographical pattern as trade flows (with a dominant proportion of flows towards and from the EC and other OECD countries) and job-contracting industries comply to these general observations. Third, job-contracting industries do not invest in the rest of the world more than other industries, and they tend to receive foreign investment as much as other industries.

I. FRENCH TRADE AND THE NUMBER OF JOBS IN THE FRENCH ECONOMY

Standard trade theory does not predict a strong link between trade openness and the aggregate level of employment even when the domestic economy is not fully flexible -- for instance when factors of production are specific to industries [Jones (1971)] or when factors are not flexible because of distorting regulations [Brecher (1974)].⁴

Indeed, Figure I clearly suggests that there is no strong link between trade and *total* employment. Between 1976 and 1992, the French unemployment rate increased by almost 300 per cent, whereas the openness ratio (the sum of exports and imports of goods and services over GDP) of the French economy increased by only 10 to 20 per cent. These diverging evolutions suggest that French unemployment is more related to domestic macroeconomic variables and/or to poorly functioning labour and product markets than to foreign trade.⁵

In this context, this section examines more closely two issues: the link between exports and jobs, and the net impact of trade on employment. Looking at the export side is a mercantilist perspective. That is a useful approach in the context of negotiating tactics (such as in the Uruguay Round) but a limited one from an economic point of view because it leaves aside the most important lesson of trade theory: gains from trade arise from the ability to purchase imported goods at lower prices than domestically produced goods, and exports are imposed by the need to pay for the desired amount of imports. Hence, the section also presents the economic view about the relationships between jobs and trade by combining the two conflicting forces: exports as a job-expanding force and imports as a job-contracting force. The section looks not only at the whole French economy but also at individual industries: although foreign trade is not expected to have an impact on total employment, it is expected to have an impact on jobs by industry (the specialisation process requires some reallocation of the factors of production).

The section is based on input-output accounting methods. The annex describes these methods and shows their limits. However, these methods have a crucial advantage for our purposes: their capacity to link political and economic aspects. Indeed, they provide results easy to interpret in terms of votes (jobs mean votes) and are thus useful for understanding the public debate. And, they offer a close approximation of the results of standard trade theory, as underlined by Krugman and Lawrence (1993).

a) *French jobs supported by exports*

In the context of GATT negotiations such as the Uruguay Round, each negotiating country tries hard to improve market access for its exporters. This focus on exports is explained by the fact that policy-makers aim at expanding the derived demand for domestic labour (employment is closely related to votes). This first look at the possible links between trade and jobs relies on the method developed by Davis (1992) which is based on the concept of value-added multipliers within an input-output accounting framework (see the annex for a detailed description of this method). All the figures presented in the section are in constant

prices (1980 French Franc prices) and are based on data including services industries as well as manufacturing and agricultural sectors.

Exports: the engine of French growth

Table 1 shows the important role of exports in French GDP and the measure to which exports of goods and services have been increasingly the engine of growth. It suggests that the prerequisite for an impact of trade on jobs -- the existence of massive trade flows -- is met by the French case.

First, the export share in French total GDP, which is defined as the sum of goods and services (private and public), has increased from 20 to 27 per cent. However, export growth has had different features over the period: between 1982 and 1986, it was erratic, whereas it was consistently positive before and since this period. Moreover, the two periods of constant growth (1977 - 1981 and 1987 - 1992) differ in terms of the strength of growth: the compound annual growth rate during the period 1987 - 1992 was higher than during the period 1977 - 1981 -- 6.8 per cent compared to 4.9 per cent.

Increases of exports represented about 37 per cent (on average) of GDP increases in the late 1970s, and almost 75 per cent for the period 1987 - 1992 (with more than 100 per cent in 1991 and 1992). That export growth has represented a very large proportion of GDP growth (or even surpassed it) underscores the extent to which exports have been a crucial engine of growth in France (a feature shared with the vast majority of the OECD countries).

The impact of exports on jobs: an economy-wide view

Exports support "direct" jobs: a French car exported to the rest of the world has a direct content of French labour. In addition to this direct derived demand for labour, exports also support "indirect" jobs: The French exported car has required the production of intermediate inputs (steel plates, tyres, etc.) capital goods (plants and equipments) and service imports in France -- all derived demands for French labour which should also be taken into account.⁶

Table 1 provides a crude estimate of the sum of direct and indirect jobs supported by French total exports, roughly 3.8 millions of jobs in 1992 -- about 16 per cent more than in 1977. Another way to express these results is provided by the ratio of the average number of jobs supported by exports of one billion French Francs: roughly 4 800 jobs (i.e., roughly 25 000 jobs for one billion U.S. dollars, which is of the same order of magnitude as the figure of 19 000 jobs for one billion U.S. dollars estimated by Davis for the US).⁷

The estimates of the jobs directly *and* indirectly supported by French total exports are almost twice the amounts of estimated jobs directly supported by French exports (1.7 and 2.1 millions in 1977 and 1992, respectively). However, there are wide differences by industry between these two series of estimates, as shown by Table A (in annex) which lists sectors according to the ratio of direct export-supported jobs (e) with respect to direct and indirect export-supported jobs (E).

Table I shows that export-supported jobs represent an increasing share of the French total civilian labour force -- up from almost 15 per cent to almost 17 per cent. It also shows that in the most recent period, the annual growth rate of export-supported jobs exceeds that of the total French labour force. In particular since 1987, export-supported jobs have grown at a rate of 2.7 per cent, whereas the total French labour force has increased at a rate of 0.6 per cent. At this point it is useful to mention that these results are likely to be underestimates, both in terms of levels and growth. For instance, jobs in both hotels and restaurants and in the public administration are increasingly related to foreign trade operations: unfortunately, the French National Accounts statistics do not report exports nor imports for these sectors.

Export impact on jobs: a sectoral view

As trade is expected to have an impact on jobs by industry, Table 2 assigns export-supported jobs to four broad sectors: manufacturing, agriculture, energy and services. It provides three main results.

First, the shares of export-supported jobs in the labour force vary widely among these sectors. In 1992, half the jobs in French manufacturing industry depended upon exports -- compared with 35.4 per cent in agriculture, 24.7 per cent in energy and only 7 per cent in services.

Second, the shares of export-supported jobs in the labour force show a common evolution: they increased in all four sectors. However, their growth rates vary widely: almost 3 per cent for agriculture and services, 2 per cent for industry and close to zero per cent for energy.

Third, these share increases occurred in very different contexts. In industry, agriculture and energy, there has been a strong decline in total jobs (annual compound growth rates are -1.9, -2.8 and -1.2, respectively) accompanied by small increases or decreases of export-supported jobs (at annual rates of 0.1, -0.1 and -0.9 per cent, respectively). All these trends are in sharp contrast with what has occurred in services. In this sector, employment has increased by an annual growth rate of 1.2 per cent whereas export supported jobs have increased at a 4 per cent annual growth rate.

Export impact on jobs: a country view

As mentioned in the introduction, there is a widespread belief among policy-makers that trade with countries with very different labour intensities (countries with "low" wages) is more costly in terms of jobs than trade with countries with similar labour intensities (i.e., the OECD countries). It is thus interesting to redo the exercise of computing export-supported jobs for French trade flows according to trading partners.

Table 3 presents a breakdown of French trade by trading partners in four major zones in order to address these issues.⁸ Two zones involve countries relatively similar to France: the EC countries (with which French trade flows are not hindered by trade barriers) and the rest of the OECD zone. In addition, there is the non-OECD, non-OPEC zone which can be further divided between the Dynamic Asian Economies and the other non-OECD, non-OPEC countries (to save space, the OPEC zone is not presented).⁹ During the period 1987 - 1991, export flows shown in Table 3 (concerning all goods and services recorded by the IMF) exhibit very different annual compound growth rates: more than 18 per cent to the DAEs, almost 12 per cent to the EC, 8 per cent to the OECD, non-EC countries and less than 6 per cent to the rest of the non-OECD, non-OPEC zone.

Table 3 also presents the computed export-supported jobs (unfortunately, data available by industry do not permit us to distinguish between the OPEC zone and the non-OECD, non-OPEC zone before 1985). These results do not support the above-mentioned widespread belief, but they match the results expected from standard economic analysis well.

In particular, French export-supported jobs for all goods and services have increased at a higher rate with the non-OECD, non-OPEC zone than with the OECD, non-EC zone. This relative evolution, which contradicts the existing preconceptions revealed by the French public debate, reflects differences in ongoing trade liberalisation as well as domestic growth differentials. During the late 1980s, the non-OECD, non-OPEC zone experienced substantial unilateral trade liberalisations (at the level of individual countries, such as Mexico, or at the level of regions, such as in Pacific Asia) whereas the OECD, non-EC zone has broadly maintained intact or even increased its existing level of protection.

Looking at French trade with the EC, its evolution seems closely related to the introduction of the Single Market, as suggested by the following trends. Derived demand of French labour related to EC

agricultural trade is continuously declining -- a trend which mirrors the increasingly specialised agricultural markets of the Member states. In the industrial sector, export-supported jobs rose only in 1990 -- a development probably reflecting the impact of German reunification (i.e., the complete liberalisation of trade with Eastern Germany). Lastly, the core of increased derived demand of French labour is concentrated in services -- a result probably connected with the changes to be expected from the main feature of the Single Market exercise, the liberalisation of intra-EC trade in services.

b) Jobs and trade: a wider perspective

In sharp contrast to the above approach, which makes sense only in the limited context of trade negotiations, economic theory shows that gains from trade flow from imports: domestic consumers prefer foreign goods and services because they are less expensive or because they are better designed to fit their tastes than French goods and services. Because of French consumer choice, French labour is less demanded: imports decrease the demand for French labour. Combining these two forces -- the foreign derived demand for French labour and the French derived "non-demand" for French labour -- allows us to estimate the *net* impact of trade on French jobs.

French trade and net job creation

According to standard trade theory, the economic impact of foreign trade is on real incomes, not on global employment. However, since trade is closely related to growth opportunities in the entire world as well as in the country under consideration, one should not be surprised by some positive impact of trade on total employment.

Table 4 allows us to look at these expected relations in the case of France. It gives the number of jobs (as a percentage of the total French labour force) "created" by exports and the number of jobs "lost" by imports as well as the net number of jobs by using a purely accounting method (see annex). It leads to three observations.

First, as expected, the *net* impact of trade on jobs is modest. It is on average about 0.8 per cent of French total employment, that is, almost 170 000 jobs -- though it peaked at 2.4 per cent in 1984 (about 450 000 jobs).

Second, trade tends to be a net creator of jobs. In only four out of the fifteen years for which there are estimates was there a negative net impact of trade on jobs. The negative figures are very small: they never exceed half a percentage point of the total French labour force (less than 100, 000 jobs in 1990). These negative figures may help to explain the increase in protectionist reactions observed in France during recent years -- though it is somewhat hard to believe that French politicians could be sensitive to such small figures.

Lastly, the evolution of the net job changes shown in Table 4 shows that all losses in terms of total employment are clustered in the period 1988 - 1991, and they suggest links with certain macroeconomic variables. Figure 2 plots total net creation of French jobs against the US Dollar/French Franc exchange rate and against the French Franc effective exchange rate. The relationship is suggestive of a link between these macroeconomic variables and total employment.¹⁰

A breakdown of net job creation by sector

Table 5 presents a breakdown of net job creation by sector. It makes a few comparisons between two sets of sectors (the ten sectors with the highest net job creation and the ten sectors with highest net job losses). The former set is characterised by higher wages (on average) than the latter. If one excludes agriculture, there is a relative balance in terms of size between the two sets of sectors -- although the

concentration is more marked in the industries creating jobs (reflecting the traditional concentration of exports on few industries).

Looking at the set of sectors creating net jobs, one can distinguish those which create net jobs essentially through intra-EC trade (for instance, agriculture or railway equipment) and sectors which create net jobs through extra-EC trade. Agriculture shows the highest contrast: net gains with intra-OECD trade, but net losses with the rest of the world -- a feature which explains why it is a leading member of the protectionist coalition during the debate on the Uruguay Round.

Sectors with net job losses can be distinguished by two criteria. A few of them are natural - resource based, with heavy losses in non-EC trade. By contrast, industries traditionally in difficulty (hosiery, shoes) are characterized by high losses in intra-EC trade and in non-OECD trade -- suggesting their inability to find a place between low and high quality products.

A breakdown of net job creation by trading zone

Looking at trading partners is another way of examining industries (since trade with various partners is a different mix of trade by industry). Table 4 shows the different impact of intra-EC trade and extra-EC trade on French jobs. Job losses seem to be more associated with extra-EC trade and job creation with intra-EC trade for the last four years (the only ones for which French National Accounts provide consistent trade data for the world and for the EC). This observation requires a more thorough examination.

Table 6 relies on a different set of trade data than those used so far. This data set (provided by the French Customs) permits a distinction to be drawn between the EC zone and the OECD, non-EC zone for the period 1980-1992 and between these zones and the OPEC and non-OECD, non-OPEC zones for the period 1985-1992. Table 6 presents net job creation (with a positive sign) and job losses (with a negative sign) for the four major trading zones. The data show sharp differences between the various zones.

In order to get normalized comparisons, part B of Table 6 presents *net* job creations associated with one billion Francs of trade (defined as the sum of exports plus imports). Trade with the OPEC zone is associated with high net job creation, illustrating the fact that France imports goods from the OPEC zone that she does not produce at all. The EC zone also shows a net job creation -- except for 1989 and 1990 -- at the level of disaggregation considered.¹¹ Lastly, trade with both the OECD, non-EC and the non-OECD, non-OPEC zones exhibit a negative impact on jobs. It is noteworthy that trade with the latter zone has a less strong impact in terms of job losses for a given amount of trade than does trade with the OECD, non-EC zone -- a conclusion contrary to current French preconceptions.

II. TRADE, TERMS OF TRADE, WAGES AND SKILLS

The previous section focused on quantity relationships -- namely the impact of trade flows on (aggregate and sectoral) levels of employment. Such an approach treats jobs with different levels of skills as similar and ignores the role of relative prices of goods and services (terms of trade) on factor rewards. As a result, it cannot address the other crucial issue raised in the debate about the Uruguay Round: does French trade (in particular, trade with countries with low wages) tend to depress French wages? This general question leads to two very different approaches.

The first approach assumes that labour is very and uniformly mobile between industries (it perceives growing French unemployment as a mere contraction of total employment with no impact on the mobility of remaining workers). In such a context, the impact of trade on wages in the whole French economy is mainly determined by levels of skills and is independent of the sectors involved. If France is relatively abundant in skilled labour (and if the terms of trade of skill-intensive goods increase), wages paid

to French unskilled labour should decline. The evidence provided below does not support the existence of such a relation.

This negative result suggests the adoption of an alternative approach which recognizes that labour is neither very nor uniformly mobile between sectors. More precisely, skilled labour is assumed to be "specific" to its industry: it is less mobile between industries than unskilled labour.¹² In this context, the specific factor model of trade shows that changes in the terms of trade have a more noticeable impact on relative wages paid to skilled labour by export sectors and by import-competing industries respectively than on the unskilled labour-wage. Evidence provided below tends to support this result, although it also shows that French relative wages are heavily influenced by features of the domestic labour markets -- in particular, minimum wages and early retirement schemes.

a) Trade and wages

That trade depresses the average wage of unskilled French labour is a proposition which has received two interpretations in the debate in France about GATT.

Trade pattern and French average wages

The first (and most frequent) interpretation is that trade with low-wage countries has a depressing effect on French *average* wages (first because workers in these countries are allegedly competing with French unskilled workers, then because competition in terms of wages is allegedly spreading to skilled labour). Such a statement does not generally refer to the traditional "factor price equalization" argument - - and indeed it does not need to do so [Krueger (1977)].¹³

However, such a direct relation between trade patterns and average French wages has to take into account that France is trading not only with countries with lower wages, but also with countries with higher wages. If trade flows have an impact on the average wage, there is no reason to exclude France's trading partners with higher wages from the analysis.

As suggested by Krugman and Lawrence, one simple figure can capture the whole argument: the average wage of France's trading partners weighted by French imports from all her partners. The estimates of labour costs provided by the US Bureau of Labour suggest that the weighted wage faced by France is close to *one*. This result flows from the fact that almost half of French trade is with countries with higher wages -- the other half being with countries with lower wages (and the lower the trading partners' wages are, the less important are its trade flows with France).¹⁴

The terms of trade and relative wages

The second interpretation states that French trade reduces the *relative* wages paid to French unskilled and skilled labour (it relies thus on the traditional "factor price equalization" approach). In order to be verified, this interpretation requires two crucial hypotheses: France should be relatively rich in skilled labour (relatively to unskilled labour) *vis-à-vis* the rest of the world (as a whole); and the relative price of skill-intensive goods should have increased.

The second proposition may be acceptable, but the first hypothesis cannot be taken for granted for France which is both relatively well endowed in skilled labour *vis-à-vis* certain countries *and* relatively rich in unskilled labour *vis-à-vis* other trading partners.¹⁵ Assessing French factor endowments is made even harder because growing unemployment reduces the total labour force in a way which it is difficult to estimate -- though it may reduce unskilled French labour more importantly than the skilled labour.

Simple extension of the work done in section I provides evidence supporting the ambiguity of French relative endowments. Following the approach suggested by Borjas, Freeman and Katz (1992) (see

annex for detail) it is possible to calculate the skilled and unskilled labour "embodied" in French trade, that is, to estimate a trade content in terms of "efficiency units" defined as jobs weighted by a variable mirroring the level of skills (namely, wages). If French exports were systematically intensive in skilled labour, their content in terms of efficiency units should be higher than their content in jobs. And if French imports were systematically intensive in unskilled labour, their content in terms of efficiency units should be lower than their content in jobs.¹⁶

Table 7 presents the skill embodiment of French trade based on this method. It shows no clear-cut evolution: *both* exports and imports have contents in efficiency units higher than their contents in jobs. This leads to the conclusion that differences in relative endowments between France and the rest of the world are not large to the point they can generate noticeable changes in French relative (skilled/unskilled) wages. In other words, one cannot eliminate the possibility that trade with the world could *increase* French unskilled labour wages relative to skilled labour wages.

Table 7 provides an additional result. French exports and imports both have contents in efficiency units higher than their contents in jobs in roughly the same proportion. As a result, the net trade impact in terms of "efficiency units" is still small, when compared to the French total labour force (expressed in terms of efficiency units) though it is higher than the net trade impact in terms of jobs. In short, the result suggested by section I (the trade impact on total employment is small) is still valid.

Skill-intensities of French industries

The previous discussion can be usefully completed by ranking French industries by wage. Such a ranking mirrors income gains from trade. And if one assumes that the average wage in relatively skilled-labour intensive industries is higher than the average in relatively unskilled-labour intensive sectors, it is also a ranking in terms of skilled content which can be seen as a test confirming what has just been said about French relative endowments. Wage data consistent with the trade data used in section I have been collected for 81 industries (see annex for detail). For the sake of simplicity, Table 8 aggregates the 81 industries into three groups: export industries, import-competing sectors and non-trading industries (defined as those which have no or very small trade flows -- *de facto*, only services industries).¹⁷

Table 8 illustrates French income gains from trade. Workers in export manufacturing sectors gain on average 6 per cent more than workers in import-competing manufacturing sectors (taking into account services).¹⁸ Combined with the result from section I, this result confirms the saying about the impact of freer trade: "Better jobs rather than more jobs."

This result requires a caveat: the observed link between French exports and wages may also reflect protection. For instance, trade barriers in textiles and apparel are imposed by all OECD countries on exports from the newly industrialised and developing countries. Such trade barriers exclude non-OECD competitors from OECD markets and substitute for them OECD countries with the factor endowments closest to those of the industrialising countries. France is one of these OECD countries which indirectly benefits the most from such protection. Large exports of French clothing to the OECD, non-EC zone may thus result from the OECD pattern of protection as well as French relative endowments. A similar argument could be made about protection in agriculture and French agricultural exports to the EC.

Table 8 also confirms that France tends to export low skill-intensive products to the two industrial zones, the EC and the OECD, non-EC. This result holds for the OECD, non-EC for each year irrespective of whether services are included or excluded (though services tend to reduce the strength of the result). The conclusion is less stable for the EC than for the OECD, non-EC trading partners, in particular when services are excluded.¹⁹ In sharp contrast France tends to export goods and services which are relatively skill-intensive to the non-OECD, non-OPEC zone. This conclusion is relatively stable and is more marked when services are included. All these results confirm that France is not the country with the highest relative endowment in skilled labour. When facing OECD trading partners (which include all the skill-rich

countries) France tends to rely on relatively low skill-intensive exports. When facing industrializing or developing countries which are relatively rich in unskilled labour, France tends to export high skill-intensive exports.

b) Terms of trade and relative wages

Examining the impact of the terms of trade on relative wages requires some estimate of the changes in the relative prices of traded goods and services which have triggered changes in relative factor rewards (as is well known, fixed relative prices of traded goods and services and fixed technology lead to constant relative factor rewards, as in the Rybczynski case).²⁰ Figure 3 suggests that French terms of trade improved between 1984 and 1991 -- mainly between 1983 and 1986 (primarily because the relative prices of imported goods decreased).

Examining the impact of the terms of trade on French relative wages during recent years requires an analytical framework which is better adapted than traditional factor price equalization.

The analytical framework

What follows assumes some "specificity" (different rates of adjustment) for different types of labour (assumed to be the only factor). More precisely, it relies on the following hypothesis: skilled labour is specific to the sector where it works, whereas unskilled labour is assumed to be mobile between all sectors. That skilled labour is slower (more costly) to transfer from one activity to another than unskilled labour is based on the fact that losses of rents related to skills reduce mobility. It is fair to recognize that this working hypothesis can be criticized on several grounds: labour regulations (such as minimum wage) also create rents which tend to limit the potential mobility of unskilled labour; some skills (for instance, managerial skills) can be more flexible than technical skills (skilled managers could be more mobile between sectors than skilled engineers); higher skills may be associated with better capacities to learn, thus with more flexibility, etc. Because of lack of information (for instance, on the proportion of managers with respect to engineers in the skilled labour force, on the proportion of old people for each type of skill, etc.) the working hypothesis cannot be tested directly.²¹ However, the results presented below are consistent with the specificity of skilled labour and the non-specificity of unskilled labour.

If factors are specific to a different extent (adjust at a different speed) economic analysis shows that changes in terms of trade will trigger magnified reactions of factor rewards of the specific factors (see annex for detail). For instance, improved terms of trade will have the following consequences: wages paid to skilled labour by export industries will improve by more than export prices; wages paid to skilled labour used in import-competing industries will decline by more than import prices; and wages paid to unskilled (and mobile between industries) labour will stay within the range of the changes in export and import prices.

In sum, the analytical framework and the hypothesis adopted about specificity predict that the difference between growth rate of wages paid to skilled labour by French export industries and French import-competing sectors would be positive and that the differential will be highest for the highest skill category and decrease as the level of skill diminishes -- for a given level of experience (age). It is also expected that the bulk of this change would have occurred between 1984 and 1986 (during the period when the terms of trade moved strongly). Lastly, it is expected that the wages paid by French export and import-competing industries to unskilled labour would be broadly similar.

Evidence

Table 9 aims at testing these predictions. It gives the changes (between 1984 and 1991) of French relative wages by skill and experience (based on detailed data by industry, sex, skills and experience kindly made available by INSEE and described in more detail in the annex). For each year, industries have been

aggregated into export, import-competing and non-trading industries according to the sectoral trade balances observed for the year involved. However, the results of Table 9 are only based on export and import-competing sectors. As a result, they *de facto* cover only manufacturing sectors because evidence about services is rather unclear (perhaps because services are still very protected).²¹

Concerning male wages, Table 9 provides two interesting results. First, it shows that growth differentials between skilled labour wages in the export and import-competing industries fit the predictions of the standard trade theory only for two segments, segments III and IV for male workers 36-45 and 46-55 years old. The wage growth differentials are highest for enterprise managers (roughly 15 per cent over these eight years) and decline with the level of skills. The bulk of the relative changes in wages occurs between 1984 and 1986 (the period during which French terms of trade changed most). Lastly, the differentials between the growth rates of wages paid to unskilled labour by the export and the import-competing industries are very small (this last result is consistent with the choice of skilled labour as the specific factor of production).

Second, Table 9 suggests that domestic features of the French labour market are much stronger than the trade impact in the three remaining segments of the labour market: segments I, II and V for male workers (18-25, 26-35 years old and 55 and over respectively).²³

The case of segment V is consistent with the expected impact of existing early retirement schemes. These schemes offer a reduced portion of wages to workers who accept a reduction of their working time. As the portion of wage retained is greater than the reduction of working time, these early retirement schemes are equivalent to increases in real hourly wages. Such schemes are likely to be more intensively used in import-competing industries which have to restructure than in export sectors which benefit from growth. It is also likely that they are more intensively used by low-level staff than by workers (salaried employees' wages are higher than workers' wages) and that they are less generously granted to the higher levels of skills. Lastly, the fact that the wage growth differential for low level staff is negative in segment IV (-5.2 per cent) is not inconsistent with this reasoning.²⁴

The case of segments I and II may be related to another feature of the French labour market, namely minimum wage regulations.²⁵ In contrast to early retirement schemes, which target import-competing (contracting) industries, the SMIC covers both export industries and import-competing sectors. The question is thus to know whether this feature influences the import-competing industries more than the export sectors -- so that the expected wage differentials are not observed. It does not seem unreasonable to suggest that import-competing industries may be under stronger pressures to cut costs than export sectors -- hence hiring younger and less skilled workers more rapidly. If correct, this hypothesis may be sufficient to explain why segments I and II do not show the results suggested by economic analysis.

Concerning female wages, Table 9 provides broadly similar though less clear results. The major difference with male wages is that domestic features dominate all the segments of the labour markets but one (segment IV).

In sum, Table 9 leads to the conclusion that when disaggregated by skill level and gender, French relative wages (in terms of skills) have evolved more than appears at first sight. However, it also suggests that this evolution is more influenced by domestic features of the labour market than by trade forces. The sole exceptions to this are the central segments of the work force (persons between 36 and 56 years old). In these two segments, skilled labour employed by export industries gains, whereas skilled labour employed by import-competing industries loses (in relative terms). It should be kept in mind that these evolutions are the necessary signals for a reallocation of the French labour force taking account of changing relative world prices.

III. FOREIGN DIRECT INVESTMENT, DOMESTIC INVESTMENT, AND JOBS

The heated debate about France's signature of the Uruguay Round reached a peak with the "délocalisation" issue (transfer of production capacity to lower cost countries) revealing the fear that French outward foreign direct investment (hereafter, O-FDI) was worsening the allegedly negative trade impact on the number of jobs (and on relative wages).

Figure 4 helps to understand the emergence of this fear. It shows that it is only recently that O-FDI flows have become a noticeable feature of the French economy. Until 1986, O-FDI was barely significant (it represented less than 3 per cent of domestic gross investment defined by the "formation brute de capital fixe") whereas since 1986, French O-FDI represented between 8 to 12 per cent with a peak in 1990.

However, Figure 4 also shows that inward foreign direct investment (hereafter, I-FDI) has followed the same evolution as O-FDI flows. After some lags between 1986 and 1990, the I-FDI share of domestic gross investment has converged towards the O-FDI share since 1991. The imbalance between inward and outward flows was never larger than 7 per cent of French gross domestic investment, and it was back to its usual magnitude (1.6 per cent) in 1992. These features were generally ignored in the French debate about O-FDI flows. As well as neglecting I-FDI flows by its misplaced focus on O-FDI, the "délocalisation" debate has also ignored the relative importance by industry of the O-FDI flows.

This section examines three issues. First, it provides some basic evidence about relationships between (inward and outward) FDI and gross domestic investment *by industry*. Second, it looks at the FDI geographical patterns by industry -- in particular, checking whether import-competing and job-losing industries have FDI patterns different from other French industries. Lastly, it provides some evidence about the relationships between FDI and structural changes in jobs by industry.

The section is based on detailed data about FDI by industry from the Balance of Payments statistics which are available only for the period 1989-1992. As annual data on such a short period are not very meaningful, the section relies on average figures over the four years. As usual, in Balance of Payments statistics, data are in terms of flows and they concern residents and non-residents. This last point is crucial for a correct interpretation of the results provided below: they capture the relations between French savings and their use in France or in the world. They do not capture the investment strategies of French (or foreign) multinationals which could (and indeed, do) rely on funds which are available elsewhere. However, this feature is not a constraint for the debate examined because this debate was limited to the role of French savings for providing French jobs when used for domestic investments.

a) Capital flows and gross investment by industry

Table 10 presents French gross domestic investment and FDI for 38 industries (goods and private as well as public services).²⁶ It provides three results:

First, even during these peak years (1989-1992) the share of O-FDI relative to domestic gross investment by industry is on average small: 11 per cent for the whole French economy, 16 per cent for manufacturing as a whole, and 12 per cent for all the services (excluding retail and wholesale trade, and public services).

Second, these shares vary widely among industries: from almost zero for agriculture, coal, and several services (such as hotels or consumers services) to very high percentages (50 per cent and more) for some industries (oil and gas or ferrous metals) and services (business services or insurance and banking services).²⁶ It is interesting to note that those industries which have been the most vocal in the French debate about "délocalisation" and protection are *not* among the most active investors in foreign countries:

consumer electronics, textiles and clothing, wood and furniture, leather and shoes exhibit shares of O-FDI with respect to gross domestic investment which are lower than the average share in the manufacturing sector.

Lastly, against a background of I-FDI flows which are globally smaller than O-FDI, there is a noticeable difference between the manufacturing sector (I-FDI is 75 per cent of O-FDI) and the service sectors (the corresponding ratio is 50 per cent). I-FDI flows are also less concentrated by individual sector than the corresponding O-FDI flows. It is interesting to note that job-losing industries receive substantial I-FDI flows: these flows are even larger than O-FDI flows for some import-competing industries (leather and shoes, wood and furniture).

b) Geographical patterns of FDI flows by industry

The debate about "délocalisation" has focused almost completely on investment (funded by French savings) in countries with low wages. It is thus worth checking whether a significant share of French O-FDI was going to such countries, and, if so, whether this phenomenon was more marked for import-competing industries which exhibit high net losses in terms of jobs. Table 10 provides two answers.

First, the geographical pattern of French O-FDI is very similar to that of French merchandise trade. Most O-FDI is exported to the EC and to other OECD countries. Since hardly 20 per cent of O-FDI -- i.e., the equivalent of barely 3 per cent of French gross domestic investment -- goes to non-OECD countries the idea that "délocalisation" represents a great threat to the French industrial base is not substantiated by the facts.

Second, it is essential to note that the geographical pattern of O-FDI is broadly the same for all French industries. In particular, labour-intensive industries do not exhibit a O-FDI pattern more oriented towards low-wage countries than other French industries. For instance, the shares of O-FDI (in French gross domestic investment) invested in non-OECD countries range from 2.8 through 1.2 to 0.6 per cent for textile and clothing, consumer electronics, and leather and shoes or wood and furniture, respectively. It may be argued that this result stems from a statistical problem due to the fact that Table 10 aggregates capital and labour-intensive industries (for instance, textiles and clothing). However, additional computations concerning the geographical FDI pattern at a higher level of disaggregation (81 industries) confirm the results of Table 10.

Table 10 also provides some information about the geographical sources of I-FDI (though this information is much less easy to interpret than the geographical pattern of O-FDI flows because sources of I-FDI may refer to the places where financing packages have been arranged rather than the places where the funds have effectively been raised). With this caveat in mind, it is useful to note that I-FDI comes mostly from the EC and the non-EC, OECD countries. I-FDI flows from developing or newly industrialised countries represent a very small proportion of French gross domestic investment in manufacturing, except in ferrous metals, machinery, professional electronics, and textiles and clothing.

That O-FDI flows have the same geographical pattern for all industries may seem, at a first glance, counter-intuitive. There are several possible explanations. Two seem particularly relevant. First, technological and factor price changes induce unskilled labour-intensive industries to evolve towards capital or skill intensive techniques. For instance, clothing can be designed and made electronically, and shoes can be manufactured by capital-intensive techniques (gluing instead of stitching). In such cases, O-FDI flows reveal the appropriate technological changes which take place in these industries and will allow their future growth in developed countries. The second explanation is that inputs other than classical factors of production (capital and labour) may be crucial: for instance, information about markets and their evolution (fashion) may require a lot of investment. If it is the case, then the large and sophisticated markets -- the OECD markets -- will attract most of the investment, even for import-competing and job-losing industries [Oman (1993)].

c) *Capital flows and jobs*

The debate over "délocalisation" sought to address the issue of the impact of the O-FDI flows on total employment: do these flows reinforce the allegedly negative trade impact on total employment? It does not seem very logical to limit this kind of question to O-FDI alone and to eliminate the possible impact of I-FDI. Hence, this section examines this issue by combining estimates from section I with available data on French FDI -- both inward and outward.

Table 11 presents the shares of French FDI held by industries grouped by their net situation in terms of jobs losses or gains (as computed in section I). It distinguishes between sectors characterised by large job gains, those marked by large job losses and all industries with job gains or losses. It suggests two results.

First, O-FDI flows are concentrated in industries exhibiting net job *gains*. This feature becomes clear if two industries (financial services for investment in the EC, and oil and gas extraction for investment in the non-OECD countries) are excluded for obvious reasons (the first is related to the Single Market programme and the second is related to the location of oil and gas deposits). Table 11 provides no evidence to support the assertion that "délocalisation" is concentrated in industries experiencing net job losses.

Second, I-FDI flows offer a more complex pattern. It is interesting to note that I-FDI flows from the EC are disproportionately heavily invested in French industries suffering substantial net job losses. By contrast, I-FDI flows from non-OECD countries are essentially directed to French industries exhibiting net job gains, while I-FDI flows from the other OECD countries are in-between. These investment patterns suggest two remarks. I-FDI flows with developed countries seem to be largely consistent with the argument that French comparative advantages are complex *vis-à-vis* OECD countries which are mostly capital and skilled labour-rich countries. By contrast, I-FDI flows with newly developed or developing countries mirror the more clear-cut comparative advantages.

Conclusion

This paper provides evidence which supports standard economic analysis. Trade has a modest impact on total employment which depends upon macroeconomic factors and policies as well as upon the structure of labour markets (and the ways labour policies influence these structures). By contrast, trade has a large impact on labour reshuffling between industries -- a consequence of permanently ongoing specialization. It also has an impact on wages: this paper provides evidence to support the saying that liberalised trade is associated with better jobs rather than more jobs. Lastly, the paper shows that focusing on outward foreign direct investment by import-competing industries is misleading: outward FDI is essentially done by exporting sectors, and inward foreign direct investment (which is broadly of the same magnitude) occurs in the downsizing industries as well as in the exporting sectors -- implying that French firms ignore opportunities to invest in France that foreign investors find profitable.

Notes

1. I would like to thank B. Larre, J. Martin and N. Vanston for very helpful comments on previous drafts.
2. For instance, the Arthuis Report (1993) from the Senate. For an opposite stance, see the Devedjian Report (1993).
3. For a more detailed analysis of the relations between trade and factor movements, see Faini and Venturini, 1993.
4. Beyond these results of pure trade theory, economists tend to see trade as an engine of growth - a dynamic element of competition powerful enough to generate new jobs in the national economy [Edwards (1993)]. However, the limited period for which data are available suggests that this argument should be put to one side in the context of this paper.
5. The year 1976 has been chosen as the starting point because it is the first year French unemployment rose above 3 per cent (its average during the 20 previous years).
6. At the chosen level of disaggregation (81 sectors) French national accounts allow requirements in terms of intermediate goods and services -- but not in terms of capital goods -- to be taken into account.
7. Since 1977, the decline in this ratio mirrors the increasing role of exports in French GDP.
8. For the sake of simplicity, Table 3 does not show the number of export-supported jobs related to trade with the OPEC countries. Jobs supported by French exports to OPEC countries can be computed by subtracting the amount of export-supported jobs related to the zones shown in Table 3 to the total amounts of export-supported jobs provided by Table 2.
9. Dynamic Asian Economies (DAEs) are: Hong Kong, Korea, Indonesia, Malaysia, Singapore, Taiwan-RoC and Thailand. This classification differs from the standard one of the OECD by the inclusion of Indonesia.
10. The same observation can be drawn from the results obtained in the US by Borjas *et al.* (1991).
11. Intra-industry trade opens the possibility of a more complex picture at a more disaggregated level of sectors than the 81 industries considered.
12. The specific factor model (which is often interpreted as a "short" run model) has an additional attraction: it fits well the fact that reliable data on French wages and skills are only available for a period of seven years, 1985-1991.
13. In a world with n factors of production, factor price equalization does not exist if countries with different factor endowments have only $(n-1)$ common goods.
14. It would be interesting to test the existence of a positive time-series correlation between a country's share in French imports and the increase of this country's wage.
15. Indeed, Krugman and Lawrence have shown that in the US case, factor price equalization is dominated by more powerful domestic causes.

16. Indeed, such changes are observed by Borjas *et al.* in the US cases: the implicit labour input in the US exports is higher in efficiency units than in jobs, and the implicit labour input in US imports is lower.
17. Table 7 excludes agriculture (but not food industries) because data are not very reliable for this sector.
18. The wage differentials are smaller when services are included. That maybe due to the fact that services are protected and can benefit from associated rents.
19. This result is probably related to the heterogeneity of the EC Member states. To split the EC in two subsets of countries would probably eliminate this problem.
20. That remains true when the recent empirical literature has also added immigration in a relatively straight manner: more low-skilled immigrants are assumed to depress unskilled wages relatively to skilled wages. Again, however, a simple Heckscher-Ohlin model based on skilled and unskilled labour shows that this is not the case unless terms of trade vary.
21. Again, what counts is not the absolute specificity for each factor, but the fact that some factors are less mobile than others.
22. Only four service sectors may be considered as tradables (two as exportables and two as importables).
23. It should be emphasized that segment I is relatively very small.
24. It may suggest that these schemes are already shaping labour markets for employees between 45 and 55 years old (probably between 50 and 55 years old).
25. The impact of the minimum wage regulation on French employment has been thoroughly analyzed. For instance, see Rosa (1995) and OECD (1991).
26. FDI flows differ from gross domestic investment flows because they are also used to finance other purposes, in particular mergers and acquisitions.
27. These high figures (50 per cent and more) require some explanations. In the case of manufacturing, there are only two cases (oil and non ferrous mining) which are easy to explain: they clearly correspond to the absence of the raw materials in question in France. In the case of services, there are two plausible explanations. The ways data are recorded by the Banque de France may aggregate capital flows from some industries to capital flows of the services industry involved -- in particular, for banking and insurance services. The other explanation is the huge foreign investments made by French banks and insurance companies (in order to adjust to the Single Market).

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ANNEX: methodology and sources

1. Standard trade propositions

The Heckscher-Ohlin-Samuelson model is based on perfect factor mobility among sectors. It predicts the following "magnification" effect:

$$[1] \quad w_s > p_s > p_u > w_u$$

where p_s is the price of the good intensive in skilled labour, w_s the wage paid to skilled labour, w_u the wage paid to unskilled labour, and p_u the price of the good intensive in unskilled labour.

The specific factor model [Jones (1971)] is based on imperfect factor mobility among sectors. It predicts the following magnification effect:

$$[2] \quad w_x > p_x > w_u > p_m > w_m$$

where x and m refer to the exported and imported goods, and w_x and w_m to the skilled labour forces used in the exporting and import-competing sectors, respectively.

2. Methodology

Tables 1 to 5 are based on the method suggested by Davis (1992) by computing the employment content of trade according to the following formula:

$$[3] \quad E = [I - (1-m/s) A]^{-1} * e$$

where E is the vector of total (direct and indirect) domestic output of goods and services required to produce exports, e the direct output required, I the diagonal unit matrix, $(1-m/s)$ the diagonal matrix comprising the domestic shares of outputs delivered to intersectoral and to final demands (m is imports and s the total supply of outputs), A the direct requirements coefficients matrix.

Sakura (1993) who has done similar computations on a much more aggregate industrial classification gets results from the whole economy which are very close to our results.

The methodology used in Table 7 of the paper combines the approaches suggested by Borjas, Freeman and Katz (1991) (hereafter BFK) and by Davis. Following BFK, the implicit labour supply related to trade flows can be expressed as:

$$[4] \quad L_t = \sum_i (L_{it}/Q_{it}) * T_{it} = \sum_i L_{it} * (T_{it}/Q_{it})$$

where L_i is the number of employees (adjusted for hours worked) working in the industry i , Q_i the domestic output of the industry i and T_i the net trade flow (imports minus exports) for this industry. All these variables are for the year t (from 1977 until 1992). When T_{it} corresponds to net imports of the industry i , L_t has a negative sign. When it corresponds to net exports of the industry i , L_t has a positive sign.

BFK then refine their approach by introducing a broad distinction between two types of employees: "production workers" and "non-production workers." In the French case, this distinction has been interpreted as that between workers ("ouvriers") and other wage earners. As a result, the implicit supply of each type of labour related to trade flows can be expressed as:

$$[5] L_{jt} = \text{SUM}_i [a_{ij} * L_{it} * (T_{it}/Q_{it})]$$

where a_{ij} is the *average* proportion of employees of type j ($j=1,2$) by the industry during the period examined.

The second refinement introduced by BFK is the concept of "efficiency units." The number of employees L_i is split in 64 efficiency units, according to three criteria: sex, skills and experience. In the French case, male and female workers in each industry i are divided in six levels of "socio-professional categories" which are the closest proxies for levels of education (managers, high level staff, medium level staff, low level staff, workers, apprentices and trainees) and experience (given by the age, with five age groups: under 26, 26 to 35, 36 to 45, 46 to 55, 56 and over). Employees from unit u in the industry i were weighted by the average hourly wage during the period 1984 - 1991. As a result, the implicit supply of each type of efficiency unit related to trade flows can be expressed as:

$$[6] L_{ut} = (1/U) * \text{SUM}_i [e_{iu} * U_{it} * (T_{it}/Q_{it})]$$

where e_{iu} is the *average* proportion of employees of type u employed by the industry during the period 1984 - 1991 and where U_{it} is the total number of efficiency units used by the industry i .

The BFK computations are based on total output O_i . Following Davis (1992), this paper is based on domestic output Q_i only.

3. Statistical sources

1. Data on output, trade flows and total employment by industry were taken from the French National Accounts. The NAP 90 level of the French Industrial Classification (NAP 90) was used. It is a relatively disaggregated level since it relies on 54 agricultural and manufacturing branches and on 27 service branches (the 9 branches of "public services" have been aggregated into one. The breakdown of trade flows in trade with the Community and trade with the rest of the World is also based on the National Accounts for the period 1988 - 1992. For the years 1977 - 1987, this breakdown is based on (unpublished) data processed by the Direction de la Prévision of the Ministry of the Economy.
2. All the detailed data on employment and wages were kindly provided by the Division Emploi of INSEE. Wages include all components (including taxable compensation) effectively paid after deduction of social charges (for social security, unemployment and retirement). As a result, they are taxable wages (except for compensation paid in kind). These wages are transformed into average wages by taking into account the corresponding number of hours worked.
3. Data on outward and inward capital flows between 1989 and 1993 were kindly provided by the Banque de France. These data, which follow the IMF guidelines on Balance of Payments statistics, were made available in terms of the French industrial classification (NAP).

Table 1. **Annual shares and changes in shares in real French GDP and total civilian employment supported by French exports**

	Exports			Export-supported jobs			French total GDP Bi FF1980	French total civilian labour '000	Number of jobs supported by 1 Bi FF of exports
	Value Bi FF1980	Share of		Total number '000	Share of				
		total GDP	change [a]		civil. labour	change [b]			
1977	517.1	20.0	--	3211.5	14.8	--	2589.9	21757.0	6210
1978	547.7	20.5	35.2	3253.0	14.9	38.7	2676.6	21864.1	5940
1979	588.5	21.3	47.1	na	na	na	2763.4	21905.8	na
1980	604.4	21.5	35.4	3392.4	15.5	na	2808.3	21941.9	5613
1981	626.6	22.1	67.3	3494.4	16.0	-351.4	2841.3	21836.2	5576
1982	616.1	21.1	-14.6	3299.9	15.1	-325.8	2913.7	21895.9	5356
1983	638.8	21.8	112.3	3395.9	15.5	-312.7	2933.9	21865.2	5316
1984	683.5	23.0	115.9	3503.8	16.2	-56.1	2972.5	21672.9	5126
1985	696.5	23.0	23.3	3457.5	16.0	71.5	3028.4	21608.1	4964
1986	686.4	22.1	-13.2	3307.4	15.2	-175.8	3104.6	21693.5	4818
1987	707.4	22.3	30.0	3259.8	15.0	-68.2	3174.5	21763.3	4608
1988	764.6	23.0	40.0	3298.1	15.0	19.8	3317.3	21957.1	4314
1989	842.6	24.4	55.3	3425.0	15.4	43.9	3458.4	22246.3	4065
1990	887.3	25.0	50.8	3539.7	15.7	49.7	3546.3	22476.9	3989
1991	921.5	25.8	131.5	3633.9	16.2	1427.3	3572.3	22483.5	3944
1992	981.3	27.1	140.9	3730.5	16.7	-90.0	3614.8	22376.2	3801
Indicators [c]									
	cgr	cgr	avg	cgr	cgr	avg	cgr	cgr	avg
77-81	4.9	2.5	37.0	2.1	2.0	-104.2	2.3	0.1	5723
82-86	2.7	1.1	44.7	0.1	0.3	-159.8	1.6	-0.2	5116
87-92	6.8	4.0	74.8	2.7	2.2	230.4	2.6	0.6	4120

Notes: [a] Changes in exports as a percentage of changes in GDP.
[b] Changes in export-supported jobs as a % of changes in total employment.
[c] cgr: annual compound growth.

Source: INSEE, French National Accounts. Author's computations.

Table 2. **Export-related employment by exporting and employing sectors**

Years	All goods	Manufacturing	Agriculture [a]	Energy	Services
Total civilian jobs ('000)					
cgr [b]	0.19	-1.86	-2.75	-1.18	1.24
Export-supported jobs ('000) [c]					
1977	3211.5	1903.4	614.5	65.8	627.7
1978	3253.0	1903.1	612.1	63.3	674.6
1980	3392.4	1935.9	674.2	62.3	720.0
1981	3494.4	1964.9	703.3	66.3	759.8
1982	3299.9	1872.1	596.6	66.3	764.9
1983	3395.9	1878.4	657.5	66.8	793.3
1984	3503.8	1933.6	659.3	69.4	841.4
1985	3457.5	1868.7	676.2	67.7	844.9
1986	3307.4	1775.6	638.7	62.0	831.1
1987	3259.8	1719.6	648.4	62.4	829.3
1988	3298.1	1714.1	675.0	64.5	844.5
1989	3425.8	1785.5	648.0	62.0	930.2
1990	3539.7	1852.2	626.2	58.9	1002.4
1991	3633.9	1898.2	623.5	56.3	1055.8
1992	3730.5	1927.8	608.1	57.1	1137.5
cgr [a]	1.0	0.1	-0.1	-0.9	4.0
Export-supported jobs (as a % of total civilian jobs)					
1977	14.8	37.5	23.5	23.8	4.6
1978	14.9	38.0	23.9	23.1	4.8
1980	15.5	39.9	27.6	23.2	5.0
1981	16.0	42.0	29.6	24.6	5.2
1982	15.1	40.8	25.7	24.1	5.2
1983	15.5	41.9	29.0	23.8	5.3
1984	16.2	44.6	29.8	24.9	5.7
1985	16.0	44.4	31.5	24.8	5.6
1986	15.2	43.1	30.5	23.2	5.5
1987	15.0	42.9	31.9	23.9	5.4
1988	15.0	43.4	34.2	25.5	5.4
1989	15.4	44.9	33.9	25.2	5.8
1990	15.7	46.2	33.9	24.6	6.1
1991	16.2	48.1	35.0	24.1	6.4
1992	16.7	50.3	35.4	24.7	6.9
cgr [a]	0.8	2.0	2.8	0.2	2.8

Notes: [a] Agriculture includes forestry, fishing and food industries.
 [b] cgr: annual compound growth rate.
 [c] Data for 1979 not available.

Source: INSEE: French National Accounts. Author's computations.

Table 3. Exports and export-related employment by major trading zones

Years	French exports to			European Community				OECD, non-EC zone			Non-OECD, Non-OPEC zone					
	OECD non-EC	non-OECD	non-OPEC	all goods	agriculture [d]	industry	services	all goods	agriculture [d]	industry	services	all goods	agriculture [d]	industry	services	
	Millions US Dollars															
	Export-supported jobs ('000)															
1980	1700.2	432.4	952.7	315.1	695.3	86.2	429.4	179.7								
1981	1662.5	424.6	913.4	324.5	725.4	90.2	442.0	193.2								
1985	52.5	18.5	2.4	21.3	1858.5	448.1	995.5	414.9	737.1	74.3	416.2	246.6	618.9	125.7	365.4	127.8
1986	69.1	21.8	2.6	25.2	1872.2	462.0	988.3	421.9	702.9	68.6	394.8	239.5	544.0	82.3	339.4	122.3
1987	86.6	25.7	3.3	27.0	1920.1	483.0	1001.6	435.5	684.8	67.9	383.2	233.7	505.3	76.2	310.6	118.5
1988	99.7	29.3	4.1	29.2	1964.8	502.5	1013.3	449.0	696.1	65.3	393.7	237.1	502.8	86.3	297.6	118.9
1989	105.7	30.0	4.9	32.6	2004.0	468.4	1046.0	489.6	712.0	67.1	387.2	257.7	564.0	87.9	337.0	139.1
1990	131.5	34.9	6.1	36.2	2107.8	464.5	1115.3	528.0	732.6	63.5	388.2	280.9	543.7	76.0	323.8	143.9
1991	134.4	35.0	6.5	33.4	2234.2	472.8	1174.4	587.0	699.4	57.6	368.9	272.9	545.7	73.2	326.1	146.4
1992	145.5	37.0	7.8	36.3	2279.9	455.7	1189.5	634.7	726.8	54.5	376.9	295.4	573.8	78.0	338.9	156.9
cgr [a]					2.5	0.4	1.9	6.0	0.4	-3.7	-1.1	4.2	na	na	na	na
cgr [b]	11.6	8.0	18.2	5.4	3.5	-1.2	3.5	7.8	1.2	-4.3	-0.3	4.8	2.6	0.5	1.8	5.8
	Percentage															
	Export-supported jobs (as a per cent of total export-supported jobs)															
1980	50.1	64.1	47.7	43.8	20.5	12.8	21.5	25.0								
1981	47.6	60.4	45.0	42.7	20.8	12.8	21.8	25.4								
1985	51.6	18.2	2.4	21.0	53.8	66.3	51.4	49.1	21.3	11.0	21.5	29.2	17.9	18.6	18.9	15.1
1986	55.3	17.5	2.1	20.1	56.6	72.3	53.8	50.8	21.3	10.7	21.5	28.8	16.4	12.9	18.5	14.7
1987	58.4	17.3	2.2	18.2	58.9	74.5	56.2	52.5	21.0	10.5	21.5	28.2	15.5	11.8	17.4	14.3
1988	59.4	17.5	2.4	17.4	59.6	74.4	57.0	53.2	21.1	9.7	22.1	28.1	15.2	12.8	16.7	14.1
1989	58.9	16.7	2.7	18.2	58.5	72.3	56.6	52.6	20.8	10.4	21.0	27.7	16.5	13.6	18.2	15.0
1990	60.7	16.1	2.8	16.7	59.5	74.2	58.4	52.7	20.7	10.1	20.3	28.0	15.4	12.1	16.9	14.4
1991	61.9	16.1	3.0	15.4	61.5	75.8	60.1	55.6	19.2	9.2	18.9	25.8	15.0	11.7	16.7	13.9
1992	na	na	na	na	61.1	74.9	59.9	55.8	19.5	9.0	19.0	26.0	15.4	12.8	17.1	13.8

Notes: [a] cgr: annual compound growth rates for the period 1980 - 1992.

[b] cgr: annual compound growth rates for the period 1987 - 1992.

[c] DAEs (Dynamic Asian Economies): Hong Kong, Indonesia, Korea, Malaysia, Singapore, Taiwan-RoC, Thailand.

[d] Agriculture includes forestry, fishing and food industries.

Source: INSEE, French National Accounts. IMF, Trade data. Author's computations.

Table 4. Net job creation by trade in goods and services, as a % of total French jobs
(estimates based on 81 sectors)

Year	World			Intra-EC			Extra-EC		
	M	X	Net	M	X	Net	M	X	Net
1980	-14.2	15.5	1.23						
1981	-14.0	16.0	2.03						
1982	-14.2	15.1	0.90						
1983	-13.8	15.5	1.76						
1984	-13.7	16.2	2.42						
1985	-13.9	16.0	2.09						
1986	-14.4	15.2	0.85						
1987	-14.9	15.0	0.03						
1988	-15.3	15.0	-0.23						
1989	-15.7	15.4	-0.28	-9.2	9.1	-0.06	-6.5	6.3	-0.22
1990	-16.2	15.7	-0.46	-9.6	9.5	-0.03	-6.7	6.2	-0.43
1991	-16.6	16.2	-0.39	-9.6	10.1	0.50	-7.0	6.1	-0.89
1992	-16.5	16.7	0.14	-9.6	10.3	0.70	-6.9	6.3	-0.57
	avg	avg	avg	avg	avg	avg	avg	avg	avg
82-86	-14.0	15.6	1.60						
87-92	-15.9	15.7	-0.20	-9.49	9.77	0.28	-6.75	6.22	-0.53
80-92	-14.9	15.7	0.78						

Source: INSEE, National accounts. Author's computations.

Table 5. A breakdown of net job creation by sector, 1992

Industries	Zones					Average wages [a]	Leading members of protectionist lobbies	High presence of French public firms
	World	Europ. Commun.	OECD non-EC zone	non-OECD non-OPEC zone	OPEC zone			
The ten sectors with the highest net job creation								
Agriculture	147.3	154.3	6.9	-24.6	10.6		x	
Car	45.0	28.1	1.2	10.0	5.6	175.3		x
Aircraft	42.2	0.2	11.7	22.7	7.6	256.0		x
Services to firms	39.2	18.1	7.1	8.8	5.2			
Electric Machines	23.4	4.9	-1.5	13.3	6.7	179.6		x
Tyres	19.8	12.9	3.4	1.2	2.3	169.0		
Maritime transports	14.4	0.7	9.6	2.7	1.4			x
Specialty chemicals	14.2	3.7	1.1	7.4	2.0	214.5		x
Foundry	13.2	5.7	-0.2	4.9	2.9	156.9		x
Railway equipment	12.9	9.7	0.7	1.7	0.8	183.1		x
The ten sectors with the highest net job losses								
Plastics	-18.3	-13.8	-5.2	-0.8	1.4	149.3	x	x
Construction	-19.2	-1.4	-3.1	-5.2	-9.4			
Crude oil	-22.3	-1.6	-3.4	-6.1	-11.1			x
Scientific equipment	-23.6	-7.1	-18.9	-0.5	2.9	159.4		x
Natural gas	-24.7	-3.9	-3.7	-6.1	-11.1			x
Shoes	-25.1	-14.8	2.8	-12.1	-1.0	124.3	x	
Fishing	-25.9	-8.5	-12.7	-4.6	-0.1		x	
Coal	-26.7	-1.2	-16.8	-8.0	-0.7	212.5		x
Hosiery	-29.4	-7.7	-4.8	-15.6	-1.2	120.5	x	
Office machines	-34.4	6.4	-31.8	-9.7	0.7	220.7	x	x
All sectors	30.9	124.3	-119.7	-32.3	58.6			

Note: [a] Average wages (FFR thousands) from SESSI are available only for industrial sectors.

Source: INSEE, French National Accounts. Ministère de l'industrie (SESSI). Author's computations.

Table 6. Estimates of trade created net jobs by trading zones

Years	World	European Community	OECD non-EC zone	non-OECD non-OPEC zone	OPEC zone
Net job creation ('000)					
1980	269.4	99.1	-99.9		
1981	442.9	57.6	-69.5		
1985	452.0	117.6	70.0	126.9	137.5
1986	183.9	36.4	12.7	45.6	89.2
1987	6.7	4.7	-21.9	-28.2	52.1
1988	-51.0	10.2	-44.2	-56.8	39.8
1989	-61.3	-49.7	-62.7	7.5	43.6
1990	-104.4	-49.2	-80.2	-29.6	54.6
1991	-88.2	80.5	-159.6	-56.1	47.0
1992	30.9	124.3	-119.7	-32.3	58.6
	avg	avg	avg	avg	avg
80-92	108.1	43.2	-57.5	-2.9	65.3
87-92	-44.6	20.1	-81.4	-32.6	49.3
Net job creation ('000) for one billion Francs of trade [a]					
1980	227.7	174.5	-390.2		
1981	372.2	101.4	-258.4		
1985	349.0	169.9	251.8	587.5	1261.5
1986	137.8	49.3	44.6	212.1	919.6
1987	4.8	5.9	-73.2	-126.5	578.9
1988	-33.5	11.8	-133.5	-234.7	468.2
1989	-37.0	-52.6	-175.1	28.7	463.8
1990	-59.4	-48.6	-213.3	-110.4	546.0
1991	-48.6	76.6	-415.6	-183.3	643.8
1992	16.3	112.2	-300.8	-108.8	604.1
	avg	avg	avg	avg	avg
80-92	92.9	60.0	-166.4	8.1	685.7
87-92	-26.3	17.5	-218.6	-122.5	550.8

Note: [a] Trade: imports plus exports.

Source: INSEE, French National Accounts. Author's computations.

Table 7. **Implicit labour input in goods and services trade flows**
(estimates based on 38 sectors)

Year	As a % of total French labour input in number of jobs			As a % of total French labour input in efficiency units		
	M	X	Net	M	X	Net
1985	14.3	16.4	2.14	20.6	23.7	3.11
1986	14.8	15.7	0.85	21.6	22.8	1.18
1987	15.3	15.4	0.06	22.6	22.5	-0.08
1988	15.7	15.5	-0.20	22.9	22.2	-0.64
1989	16.1	15.9	-0.10	23.4	22.9	-0.50
1990	16.6	16.2	-0.30	24.1	23.3	-0.77
1991	16.9	16.6	-0.20	24.7	24.1	-0.50
1992	16.8	17.1	0.35	na	na	na
	avg	avg	avg	avg	avg	avg
85-86	14.5	16.0	1.50	21.1	23.2	2.15
87-92	16.2	16.1	-0.07	23.5	23.0	-0.50

Source: INSEE, National Accounts & DADS. Author's computations.

Table 8. **Relative wages among French industries, 1984 - 1991**

Industries	1984	1985	1986	1987	1988	1989	1991[a]
A. All sectors (except agriculture) [b]							
World							
Import-competing		103.3	101.2	102.8	101.5	102.0	102.1
Exporting		100.3	102.4	100.3	105.1	102.1	105.6
Non trading		77.9	82.1	76.6	72.4	73.1	66.0
European Community							
Import-competing		101.6	104.1	104.5	104.2	102.6	101.6
Exporting		97.7	93.1	93.6	99.6	100.4	103.3
OECD, non-EC zone							
Import-competing		102.2	104.3	101.2	101.2	101.1	104.5
Exporting		98.0	98.3	98.8	101.4	99.3	98.5
non-OECD, non-OPEC zone							
Import-competing		97.6	97.4	98.1	98.4	99.6	101.0
Exporting		101.8	101.8	101.9	106.2	103.5	106.2
B. Manufacturing sector (including food manufacturing) [c]							
World							
Import-competing		99.2	97.0	98.2	98.1	98.5	98.5
Exporting		101.3	104.4	104.3	105.1	104.1	104.5
Non trading		95.2	101.1	90.9	92.0	89.2	85.0
European Community							
Import-competing		96.3	97.9	99.4	100.8	98.1	98.1
Exporting		105.0	99.6	98.6	99.1	106.9	108.8
OECD, non-EC zone							
Import-competing		102.5	104.0	102.0	103.0	103.4	103.4
Exporting		96.1	96.1	95.4	95.7	93.2	93.0
non-OECD, non-OPEC zone							
Import-competing		98.6	98.6	100.3	99.8	101.4	97.4
Exporting		100.0	100.4	100.0	102.2	101.3	103.5

Notes: [a] Data for 1990 are not available.
[b] Index 100 for the whole economy (agriculture excluded).
[c] Index 100 for all manufacturing (food manufacturing included).

Source: INSEE, Comptes nationaux and DADS. Author's computations.

Table 9. **The evolution of relative wages: differentials between the growth rates of wages in the export and import-competing industries (1984 - 1991)**

Levels of skills	Levels of experience [a]				
	I	II	III	IV	V
	18-25	26-35	36-45	46-55	> 56
	years	years	years	years	years
Males					
Enterprise managers	51.8	-47.9	15.8	15.0	-8.6
High level staff	-4.7	-2.2	3.6	4.5	-2.3
Medium level staff	1.1	1.7	-1.0	0.1	-5.2
Low level staff	-4.0	2.1	1.4	-5.2	-22.0
Workers	-4.1	0.2	1.5	-0.0	-11.2
Females					
Enterprise managers	66.7	-64.3	-8.5	102.4	-4.4
High level staff	-47.3	-8.2	-12.0	8.1	-17.3
Medium level staff	3.5	-1.1	-3.6	-0.6	5.1
Low level staff	-6.3	-8.0	-8.3	-8.2	-8.6
Workers	-5.4	-3.8	0.9	-1.7	-4.4

Notes: [a] Levels of experience are measured by age.

Source: INSEE, DADS. Author's computations.

Table 10. **Foreign direct and gross domestic investment, 1988-92**

Industries	Gross domestic invest. [a]	Shares of outward FDI [b]					Shares of inward FDI [b]					
		World	EC	R. OECD	DAEs	R. World [c]	World	EC [c]	R. OECD [c]	DAEs [c]	R. World [c]	
T01	Agriculture	38065	0.3	0.2	0.1	0.0	0.0	0.4	0.3	0.1	0.0	0.0
T02	Meat & milk	9823	2.4	1.7	0.6	0.0	0.2	0.3	0.2	0.1	0.0	0.0
T03	Other food manuf.	21739	18.3	13.9	3.5	0.1	0.9	14.3	13.4	0.7	0.0	0.1
T04	Coal & coke	733	0.1	0.1	0.0	0.0	0.0	0.8	0.0	0.8	0.0	0.0
T05	Oil	10391	59.0	4.7	13.9	0.5	39.8	1.8	0.5	1.3	0.0	0.0
T06	Utilities	31840	4.3	2.9	0.9	0.0	0.4	0.2	0.1	0.1	0.0	0.0
T07	Ferrous metals	4333	47.0	37.9	8.1	0.0	1.0	5.3	3.1	0.4	0.8	0.9
T08	Non ferrous metals	11752	6.5	2.8	2.0	0.0	1.7	2.0	1.6	0.3	0.0	0.1
T09	Mat. construction	8984	25.4	7.5	12.6	0.2	5.1	10.7	6.5	4.1	0.0	0.2
T10	Glass	2542	7.1	1.4	5.5	0.3	0.0	1.9	1.1	0.8	0.0	0.0
T11	Basic chemicals	13684	11.4	9.3	0.6	0.1	1.3	22.2	17.7	3.6	0.0	1.0
T12	Other chemicals	9561	21.8	7.3	3.7	0.3	10.5	26.5	16.3	5.2	0.0	5.0
T13	Foundries	18150	5.2	3.4	1.5	0.1	0.2	4.3	2.9	0.7	0.0	0.7
T14	Machinery	11840	19.3	10.9	1.7	0.4	6.3	20.3	9.0	7.4	2.1	1.8
T15a	Professional electronics	19098	35.5	23.3	6.9	0.4	4.8	15.5	11.2	2.7	0.0	1.6
T15b	Consumer electronics	2362	8.6	7.1	0.2	0.1	1.1	3.3	2.4	0.9	0.0	0.0
T16	Cars, transport mach.	22971	22.4	6.0	15.9	0.0	0.5	21.8	4.2	17.6	0.0	0.0
T17	Aircraft, ships	5111	14.9	9.7	1.6	0.1	3.5	8.1	7.9	0.1	0.0	0.0
T18	Textile, clothing	7888	14.8	8.4	3.6	0.7	2.1	8.2	3.7	3.0	0.1	1.4
T19	Leather, shoes	987	3.2	1.3	1.3	0.3	0.3	4.4	0.1	4.3	0.0	0.0
T20	Wood, furniture	9053	3.2	1.9	0.7	0.0	0.6	4.0	2.9	1.0	0.0	0.1
T21	Paper, board	8218	5.6	3.2	1.8	0.0	0.6	19.2	11.4	7.8	0.0	0.0
T22	Publishing	11044	10.6	4.2	6.1	0.0	0.3	5.3	3.2	1.9	0.0	0.2
T23	Rubber products	9463	12.2	10.4	0.9	0.5	0.3	5.7	3.8	1.3	0.0	0.6
T24	Construction	32889	7.9	4.1	2.1	0.0	1.8	1.3	0.7	0.3	0.0	0.3
T25-8	Wholesale, retail	70715	8.1	5.7	1.5	0.1	0.8	11.1	6.0	3.4	0.3	1.5
T29	Car retail, garage	10426	0.6	0.4	0.1	0.1	0.0	10.7	4.4	6.0	0.0	0.2
T30	Hotels, restaurants	32502	1.7	1.1	0.5	0.0	0.1	2.0	0.8	0.3	0.3	0.7
T31	Transportation serv.	89215	1.2	0.8	0.2	0.0	0.1	1.2	1.0	0.2	0.0	0.1
T32	Telecoms, mail	33254	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
T33	Business services	84193	76.9	48.8	24.4	0.4	3.3	31.2	20.8	7.6	0.4	2.3
T34	Consumer services	50111	1.4	0.7	0.6	0.0	0.2	1.3	0.8	0.4	0.0	0.1
T35	Housing	426862	0.4	0.3	0.1	0.0	0.0	0.4	0.2	0.1	0.0	0.1
T36	Insurance	8235	62.5	45.9	11.8	0.4	4.5	50.9	48.8	2.0	0.0	0.1
T37	Financial services	27160	76.9	50.1	19.7	1.2	5.9	30.2	14.2	3.9	0.5	11.7
T38	Public services	208168	2.8	1.8	0.7	0.0	0.3	6.9	4.1	2.0	0.4	0.4
	Total	1363356	11.0	6.6	3.1	0.1	1.1	6.8	4.2	1.8	0.1	0.7
	Industry (NAP 2, 3, 7-23)	208599	16.1	9.0	4.8	0.2	2.1	12.3	7.3	4.1	0.1	0.7
	Services (NAP 25-37)	832672	12.1	7.8	3.5	0.1	0.7	6.2	3.9	1.4	0.1	0.8

Notes: [a] Gross domestic investment is defined as "formation brute de capital fixe" (in FFR millions).

[b] Shares of FDI (foreign direct investment) are in percentage of gross domestic investments.

[c] EC: European Community 12. R. OECD: non-EC, OECD members. DAEs: Dynamic Asian Economies. R. World: rest of the world.

Source: Banque de France. Comptabilité Nationale. Author's computations.

Table 11. **Shares of French foreign direct investment by industry
(classified by net job creation)**

Trading partners	Industries with net job losses		Industries with net job gains	
	more than	all industries	all industries	more than
	5 000 jobs			5 000 jobs
	Outward foreign direct investment			
World	13.9	34.2	65.8	53.4
European Community	21.3 [a]	32.0 [a]	68.0	48.4
Rest OECD	5.4	16.6	83.4	57.2
Rest World	31.6 [b]	38.7 [b]	61.3	28.4
	Inward foreign direct investment			
World	10.9	30.6	69.4	37.7
European Community	16.3	29.1	70.9	31.9
Rest OECD	8.6	19.1	80.9	43.5
Rest World	2.1	2.9	97.1	26.5

Notes: [a]: 15% for the "Financial services" sector alone.

[b]: 24.5% for the "Oil & Gas" sector alone.

Source: Banque de France. Author's computations.

Table A. List of sectors by decreasing dependency on their own exports

NAP 15	NAP 40	NAP 90	Sectors	e/E	NAP 15	NAP 40	NAP 90	Sectors	e/E
U09	T03	PDS 71	Transports maritimes	106.9	U02	T03	PDS 39	Travail du grain	46.2
U02	T15.2	PDS 42	Produits du tabac	100.0	U06	T18	PDS 441	Fils et filés	44.2
U05	T19	PDS 30	Equipement ménager	98.3	U04	T11	PDS 171	Chimie minérale	43.4
U06	T15.2	PDS 46	Chaussures	98.2	U04	T23	PDS 53	Tranf. matières plastiques	42.8
U05	T17	PDS 292	Matériel electron. ménager	97.1	U03	T05	PDS 53	Produit pétroliers	40.3
U05	T01	PDS 26	Matériel armement	96.7	U04	T09	PDS 14	Minéraux divers	39.5
U01	T20	PDS 3	Pêche	96.0	U13	T37	PDS 89	Services financiers	37.1
U06	T15.3	PDS 54	Industries diverses	95.6	U09	T31	PDS 68	Transports ferroviaires	36.6
U05	T20	PDS 312	Matériel ferroviaire	93.0	U01	T01	PDS 2	Sylviculture	36.4
U06	T18	PDS 49	Meubles	92.8	U04	T13	PDS 21	Travail des métaux	34.1
U06	T12	PDS 442	Bonneterie	92.7	U10	T33	PDS 82-3	Serv. marchands d'enseignements	33.1
U06	T14	PDS 19	Pharmacie	91.8	U06	T22	PDS 51	Presse et édition	31.6
U05	T18	PDS 25	Matériel MTPS	91.6	U10	T33	PDS 76-9	Services aux entreprises	28.3
U06	T15.1	PDS 47	Habillement	91.5	U03	T06	PDS 6	Electricité	28.1
U05	T03	PDS 27	Machines de bureau	91.1	U09	T31	PDS 70	Navigation intérieure	25.5
U02	T19	PDS 403	Autres produits alimentaires	90.4	U10	T33	PDS 56	Récupération	25.4
U06	T19	PDS 452	Articles en cuir	88.6	U09	T31	PDS 691	Transports routiers	25.2
U05	T17	PDS 33	Construction aéronautique	86.6	U12	T36	PDS 88	Services d'assurances	19.8
U02	T02	PDS 36	Lait et produits laitiers	86.5	U03	T04	PDS 41	Houille	17.8
U05	T14	PDS 24	Equipement industriel	86.4	U09	T31	PDS 73-4	Serv. auxiliaires de transport	17.7
U05	T15.3	PDS 311	Automobiles	85.2	U04	T13	PDS 20	Fonderie	16.4
U02	T03	PDS 402	Sucre	84.9	U04	T08	PDS 12	Minerais non ferreux	10.2
U05	T14	PDS 34	Matériel de précision	84.6	U03	T04	PDS 42	Cokefaction	7.8
U09	T31	PDS 72	Transports aériens	83.3	U09	T31	PDS 692	Autres transports terrestres	7.0
U04	T11	PDS 172	Chimie organique	82.8	U03	T05	PDS 52	Eau naturel	5.7
U02	T02	PDS 35	Viandes et conserves	81.6	U09	T32	PDS 75	Télécommunications et Poste	5.7
U02	T03	PDS 41	Boissons et alcools	81.4	U03	T05	PDS 51	Pétrole brut	0.2
U05	T15.1	PDS 28	Matériel électrique	79.8	U03	T06	PDS 7	Gaz distribué	0.0
U06	T12	PDS 18	Parachimie	77.2	U03	T06	PDS 8	Eau	0.0
U06	T18	PDS 443	Ouvrages en filés	76.0	U02	T03	PDS 38	Pain et pâtisserie	0.0
U05	T14	PDS 23	Machines-outils	73.7	U07	T24	PDS 55	Batiment et T.P.	0.0
U02	T03	PDS 37	Conserves	73.6	U08	T25.8	PDS 57-4	Commerces de gros et de détail	0.0
U05	T14	PDS 22	Machines agricoles	73.1	U10	T29	PDS 65	Réparation et commerce auto.	0.0
U04	T07	PDS 11	Première transformation acier	69.1	U10	T34	PDS 66	Réparations diverses	0.0
U04	T23	PDS 52	Pneus	68.8	U10	T30	PDS 67	Hotels et cafés	0.0
U05	T17	PDS 32	Construction navale	68.1	U10	T33	PDS 80	Location mobilière	0.0
U04	T10	PDS 16	Industrie du verre	67.8	U11	T35	PDS 811	Location de logements	0.0
U05	T15.1	PDS 291	Matériel electron. professionnel	66.0	U11	T35	PDS 812	Location d'immeubles	0.0
U04	T08	PDS 13	Metaux non ferreux	63.5	U10	T34	PDS 84	Serv. marchands de santé	0.0
U04	T09	PDS 15	Matériaux construction	62.8	U10	T34	PDS 85-7	Autres services marchands	0.0
U06	T19	PDS 451	Cuir et peaux	62.0	U14	T38	PDS 90-8	Services non marchands	0.0
U04	T11	PDS 43	Fils et fibres synthétiques	61.1					
U04	T07	PDS 10	Sidérurgie	56.7					
U04	T07	PDS 9	Minerai de fer	54.8					
U02	T03	PDS 401	Corps gras alimentaires	51.4					
U01	T01	PDS 1	Agriculture	48.4					
U04	T21	PDS 50	Papier carton	47.2					
U06	T20	PDS 48	Travail du bois	46.9					

Note: [a] Ratio of own (direct) exports to total (direct and indirect) exports.

Source: INSEE, National Accounts. Author's computations.

Figure 1

French unemployment and openness

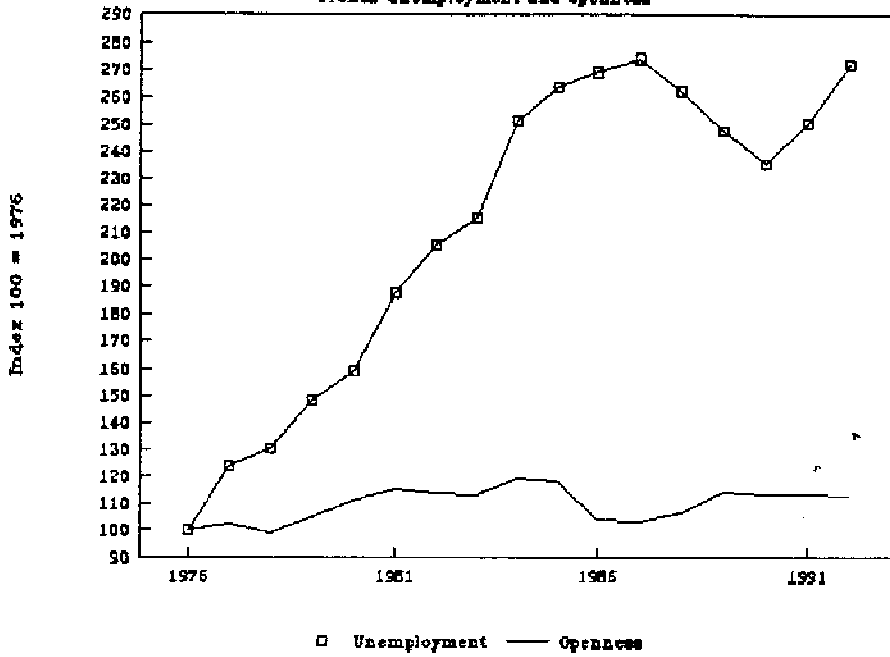


Figure 2

Net job creation and exchange rates

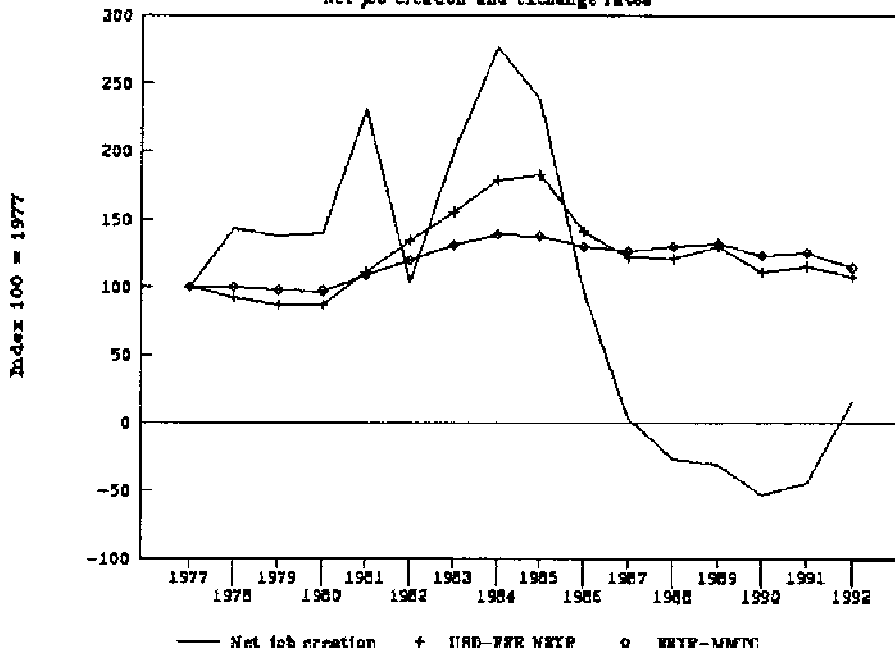


Figure 3

French terms of trade

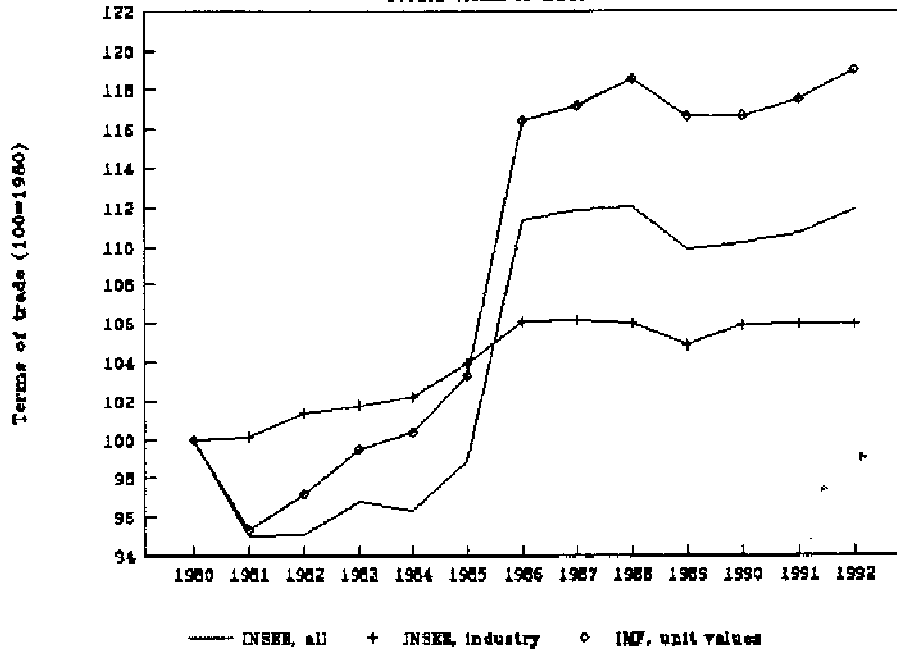
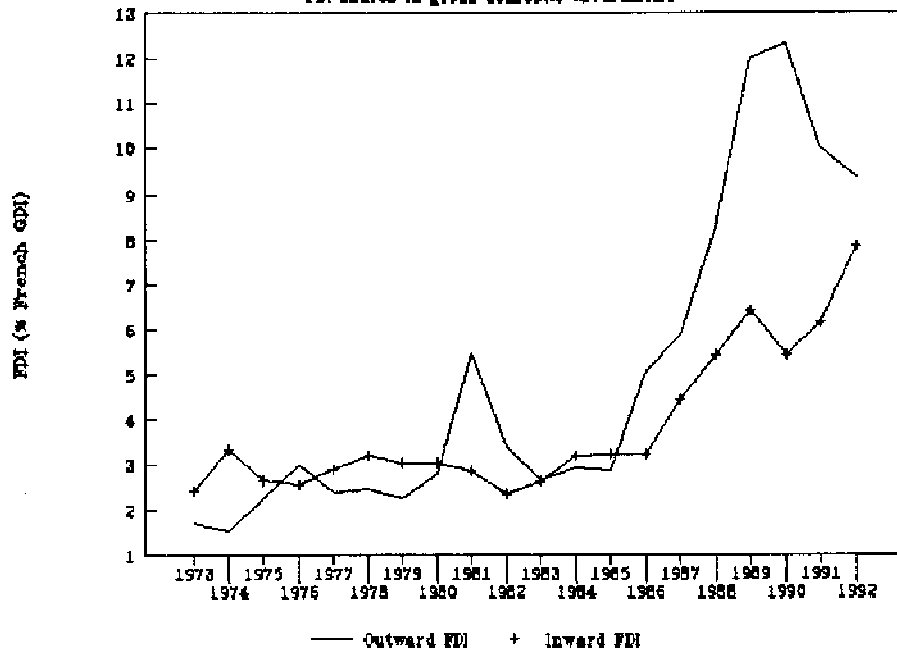


Figure 4

FDI shares in gross domestic investment



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