

Please cite this paper as:

Kramarz, F. (2011), "Employment and Trade in France: A Firm-Level View (1995-2004)", *OECD Trade Policy Working Papers*, No. 124, OECD Publishing.
<http://dx.doi.org/10.1787/5kg3mkgh4czn-en>



OECD Trade Policy Working Papers
No. 124

Employment and Trade in France

A FIRM-LEVEL VIEW (1995-2004)

Francis Kramarz

A product of the **International Collaborative
Initiative on Trade and Employment (ICITE)**

OECD TRADE POLICY WORKING PAPERS

The OECD Trade Policy Working Paper series is designed to make available to a wide readership selected studies by OECD staff or by outside consultants.

This paper has been developed as a contribution to the International Collaborative Initiative on Trade and Employment (ICITE) coordinated by the OECD. The views expressed are those of the author and do not necessarily reflect those of the OECD, OECD member country governments or partners of the ICITE initiative.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

This document has been declassified on the responsibility of the Working Party of the Trade Committee under the OECD reference number [TAD/TC/WP\(2011\)19/FINAL](#).

Comments on the series are welcome and should be sent to tad.contact@oecd.org.

OECD TRADE POLICY WORKING PAPERS

are published on www.oecd.org/trade

© OECD 2011

Applications for permission to reproduce or translate all or part of this material should be made to:
OECD Publishing, rights@oecd.org or by fax 33 1 45 24 99 30

Abstract

EMPLOYMENT AND TRADE IN FRANCE: A FIRM-LEVEL VIEW (1995-2004)

Francis Kramarz

*Director, CREST, Professor, Ecole Polytechnique and ENSAE,
and Consultant to the OECD*

This paper examines, in France, the relationship between imports – and trade more generally – and employment. It builds on the burgeoning literature relating trade and labour markets, taking into account theories of firm-level trade and previous empirical work. The analysis in the paper draws on three data sources to establish a matched firm-level data set covering trade, economic variables and employment for the time period from 1995 to 2004. The data set covers manufacturing firms. The paper develops estimates of the relationship between employment and trade activity at the firm level, first on an aggregate basis and then at industry level. Additional assessments are made with respect to the firms' experience with changes in imports of finished goods and intermediates. The conclusion sums up the results and relates these to previous work on the relationship of trade and employment in France, pointing to some possible explanations and areas for further research.

JEL classification: F16 (Trade and labour market interactions)

Keywords: Trade, employment, wages, inclusive growth

Acknowledgements

The OECD-led **International Collaborative Initiative on Trade and Employment (ICITE)** has brought together ten international organisations in an effort to deepen our understanding of the linkages between trade and jobs and to develop policy-relevant conclusions. ICITE is mobilising resources world-wide in an extensive programme of research, dialogue and communications. Participating organisations include: ADB, AfDB, ECLAC, IADB, ILO, OAS, OECD, UNCTAD, World Bank and WTO. The OECD is publishing this series of Trade Policy Working Papers drawing on the ICITE research programme.

The ICITE project is being implemented under the auspices of a team at OECD. Douglas Lippoldt is the project manager and Secretary to ICITE. In relation to the ICITE working papers, Ania Jankowska and Monika Sztajerowska provided analytical, editorial and other substantive inputs, and Katjusha Boffa and Jacqueline Maher provided secretarial and administrative support. The OECD ICITE team is based in the Development Division, headed by Michael Plummer, and under the direction of Raed Safadi, OECD Deputy Director for Trade and Agriculture, and Ken Ash, OECD Director for Trade and Agriculture.

The OECD ICITE team gratefully acknowledges the quality of the submissions received from the working paper authors. The papers have benefitted from comments and other support from ICITE partner organisations (especially members of the ICITE Steering Committee), the Working Party of the OECD Trade Committee and other national experts, participants at the three ICITE regional conferences held during 2011 in Africa, Asia and Latin America, and other parts of the OECD (especially the Directorate for Employment, Labour and Social Affairs). Their contributions helped the authors and the OECD to further develop these papers and other aspects of the ICITE project.

This paper has been developed as an input to the ICITE project. The views expressed are those of the author(s) and do not necessarily reflect those of the OECD, OECD member country governments or partners of the ICITE initiative.

Table of contents

Executive Summary	5
1. Introduction	7
2. Previous findings for France.....	7
3. Data description.....	12
4. Aggregate estimation results.....	14
5. Industry-level estimation results.....	19
6. Conclusion.....	21

Tables

Table 1. Net job creation rate	15
Table 2. Net job creation rate	16
Table 3. Net job creation rate (weight = average employment)	18
Table 4. Net job creation rate (alternative weighting scheme: weight = average scales).....	18
Table 5. Net job creation rate (all observations included; weights = average sales).....	18
Table 6. Net job creation rate with imports of goods and intermediates (alternative weighting scheme; weight average sales)	19
Table 7a. Net job creation rate: Auto industry	19
Table 7b. Net job creation rate: Consumption goods	20
Table 7c. Net job creation rate: Equipment goods	20
Table 7d. Net creation jobs rate: Intermediate goods	20
Table 7e. Net Job Creation Rate: Agro-Industries	20

Executive Summary

This paper examines the relationship between imports – and trade more generally – and employment in France. It builds on the burgeoning literature relating trade and labour markets, taking into account theories of firm-level trade and previous empirical work. The renewed interest in the relationship between trade and labour markets is driven by the availability of new data as well as a better theoretical understanding of firm-level trade. Previous studies analysing the link between trade and employment in France were not conclusive, leaving room for further research on the causal relationship between the two as well as the underlying factors responsible for particular employment outcomes.

For instance, Biscourp and Kramarz (2007) examine the role of imports and exports on employment in the manufacturing sector in France and find a negative association between imports and employment. They distinguish between two types of imported goods: “finished goods” and “intermediate inputs” – an approach adopted in this study as well. They find evidence that firms importing finished goods always destroy more employment than firms only importing intermediate inputs, which may reflect the impact of outsourcing. Conversely, exports of finished goods have a positive employment effect and exports of other goods a negative one. Kramarz (2010) complements Biscourp and Kramarz (2007) by examining potential causes for these results. He attempts to verify if foreign outsourcing, and in particular offshoring, is a possible response to the high wages and strong unions in France. He also assesses the impact of increased outsourcing on wages and employment. He is able to do this by computing competitors’ importing behaviour as well as employment changes and the strength of unions in firms. His estimates show that the group of firms facing stronger unions indeed increased outsourcing and, simultaneously, reduced employment over the period from 1986 to 1992. Meanwhile, firms facing weaker unions did exactly the opposite.

The present paper builds on the findings of Biscourp and Kramarz (2007) and Kramarz (2010), extending the previous analysis in three important ways: 1) Due to changes in the composition of trade (in terms of products and country of destination and origin), a more recent period is covered (1995-2004); 2) An industry dimension is introduced on top of the aggregate analysis of the manufacturing sector, providing additional insights into industry heterogeneity; 3) Finally, given that Biscourp and Kramarz (2007) is the only study that found a negative association between imports and employment, the analysis provided here gives further empirical scrutiny to their results.

In order to perform empirical analysis, this study uses data from three different sources, merged together in a lengthy matching process: 1) data on imports and exports obtained from the French customs records; 2) data on firm-level economic variables derived from FICUS (*fichier complet unifié de SUSE* or the Unified and Complete File from SUSE); and 3) the data on employment and wages derived from the so-called

DADS (*Déclaration Annuelle de Données Sociales*). The analysis is divided into three sub-periods: 1995-1998, 1998-2001 and 2001-2004.

The analysis yields unexpected results. One might have expected that an increase in the number of imported products would be associated with substitution effects (and thus, decreased employment) and that an increase in the number of exported products might be associated with an expansionary effect (and thus, increased employment). The study, however, finds contrary evidence. Namely, when the number of exported products increases, the effect on employment in France is clearly negative for all periods. Interestingly, an opposite phenomenon appears to be associated with an increase in the number of products imported: more products imported are associated with an increase in employment. Across various specifications and samples the main message remains robust: export intensity is associated with employment losses. Moreover, the finding that purchases of final goods, including imports, put negative pressure on employment, while there is no such relation between purchases of intermediates and employment, is consistent with the results in Biscourp and Kramarz (2007). The analysis of imports using such a division into goods and intermediates yields yet finer results, which vary from period to period. The impact of exports on employment growth is, however, negative in each and every sub-period.

The industry-level analysis further confirms these findings. First, all of the manufacturing industries covered in the study tend to lose jobs. Second, in an overwhelming number of cases, growth of exports is associated with employment losses (the only exception is the automobile industry between 1995 and 1998). In addition, for most industries, but equipment goods, increased purchases of goods are associated with decreased employment. In the equipment goods industry a clearly positive employment impact of increased purchases of goods might reflect the nature of investment goods imported in this case.

Overall, there are some general patterns in our findings that appear to be stable. In most cases, the association between export growth and employment creation does not go necessarily in the expected direction. Similarly, import growth has effects on employment that vary with the period and the industry. Finally, the most stable factor affecting employment negatively appears to be purchases of goods, either from a French firm or from a foreign one. The estimates obtained when distinguishing between imports of goods and imports of intermediates are reminiscent of those of Biscourp and Kramarz (2007). Interestingly, the papers that have tried to reproduce those results for other countries have not managed to find the same effect. Hence, the findings presented here for the recent period together with those for the period from 1986 to 1992 in Biscourp and Kramarz (2007) seem to vindicate those by Kramarz (2010), for whom offshoring in France is a result of strong unions – a French specificity.

1. Introduction

The literature relating trade and labour markets is burgeoning. Many reasons explain this renewed interest. First, theories of firm-level trade have become widely available and accepted. Melitz (2003) is the leading contender. Namely, his study introduces firm heterogeneity in a General Equilibrium framework and clearly enriches our understanding of firms trading. Second, data are a factor. Firm-level measures of total exports were used in a series of papers by Bernard and Jensen to document firm behaviour.

Recently, data and theory were brought together in a structural framework strongly confirming the validity of a modified Melitz model (Eaton, Kortum and Kramarz, forthcoming). Because the firm was the unit of observation, a set of papers started to look at labour market variables (essentially wages and employment) in conjunction with firm-level trade activity. These papers, mostly empirical, have shown the potential positive impact of exports on wages and employment, apparently because these exporting firms had better productivity than their non-exporting equivalents. In addition, the recently available matched employer-employee data sources have allowed analysts to capture a more complete view of the labour market by looking at individual wages within the trade environment.

These empirical efforts have been recently vindicated by various theoretical frameworks designed to capture the lessons of Melitz' success in modelling firms' exporting behaviour while simultaneously introducing the labour market, often within the Mortensen-Pissarides perspective, as a way of modelling frictions. The most prominent example is Helpman, Itzhokhi, Redding (2010). Other proposals are on the table and one of them mixing Melitz with the concept of bargaining has been proposed by Eaton, Kortum, Kramarz and Sampognaro (2011). Work in this area is ongoing and any new findings will, admittedly, be most welcome. This is what I propose here in this empirical-descriptive contribution. I will first summarize previous findings from an earlier study on a similar question, which used a similar type of approach for France for the period from 1986 to 1992. Then, I will describe the multiple data sources that were used for the present paper. In the next section, I will present aggregate results, followed by estimates for different manufacturing industries. Finally, I will briefly conclude outlining possible explanations for our potentially surprising findings.

2. Previous findings for France

Following Bernard and Jensen (1997), Biscourp and Kramarz (2007) adopt a very descriptive perspective in order to examine the role of imports and exports on employment. Their empirical analysis comprises three stages. First, they study the relation between trade and job creation and job destruction in the manufacturing sector using a quasi-exhaustive panel of firms. This file includes, in particular, very small firms. Then, they examine the relation between trade and skill structure, using measures of the share of production jobs in total employment of manufacturing firms and of the fraction of unskilled workers within these production jobs. Unfortunately, the size of the sample is reduced because the Survey on Skill Structure includes only establishments with at least 20 employees. Following the literature they apportion the total job changes to between-industry effects, within-industry but between-firm effects, and within-firms effects of skill changes. Finally, they examine the robustness of their results by introducing firm-level measures of innovation, which control for changes in the technology environment.

At each stage, they relate changes in employment or skill structure, both measured at the firm-level between 1986 and 1992, to changes in trade activity, also measured at the firm-level and over the same period. When they use their exhaustive manufacturing data set, they also compare the contributions of firms that are present at both ends of the sample period with those that die or are born during the period.

Again, because their data allow them to identify the categories of imported goods (using a 3-digit classification), they distinguish between two types of imported goods at each stage of their analysis (following Feenstra and Hanson, 1995 and 1996). When the classification of the imported good exactly coincides with that of the importing firm, they label the imported good as “finished”. Otherwise, they label the imported good “intermediate input”. This concept of finished goods tries to capture outsourcing strategies in which the production process is segmented and incorporates finished inputs from abroad (Fontagné, Freudenberg, and Unal-Kesenci, 1995; Venables, 1999).

These authors find evidence that firms importing “finished goods” (FG) always destroy more employment than firms only importing “intermediary inputs” (II), conditional on changes in local purchases. The former type of imports may reflect outsourcing strategies. Imports from low-wage countries have a slightly more negative association than average imports, but the difference is minor. Exports of “finished goods”, i.e. of goods normally produced by the firm, are positively associated with employment changes, but exports of other goods have a robust negative effect, potentially reflecting FDI.

Turning to skills, they find the usual result, i.e. that most changes occur within firms, a fact often interpreted as evidence of skill-biased technical change. Using a regression framework, Biscourp and Kramarz (2007) find that FG imports have a negative association with production labour, as well as unskilled labour (at least in the largest firms). Controlling for innovation taking place at the firm level does not alter any of their conclusions.

Kramarz (2010) complements Biscourp and Kramarz (2007) in his study of potential causes for these results. The paper notes that imports from developing countries to the United States or Western Europe were not huge at the end of the 1980s. However, the Single Market Program (SMP, hereafter), an attempt to establish the European Community’s (EC, hereafter) internal market, was conceived in 1985 and launched in 1988, with the hope of being fully implemented around 1992. This entailed decreased tariffs and barriers within the EC. Hence, imports from the EC increased at a very rapid pace in France during the second half of the 1980s.¹ In this context, the mere existence of

-
1. French National accounts show that imports increased at a very fast rate over the years 1986 to 1992: above 6% per year in the first five years with a decrease in the pace of expansion to 3% in 1991 and 2% in the final year. In fact, whereas import growth was at best mild between 1981 and 1985, our sample period appears to be the beginning of a period of rapid growth for French imports that continued most of the ensuing years. www.insee.fr/fr/indicateur/cnat_annu/Series/t_1501p_25_4.xls (accessed 5 April 2005). In addition, Biscourp and Kramarz (2007) show that imports from low-wage countries were - and remained - a minor, albeit increasing, component of imports of goods over the analysis period. However, when measuring imports of manufacturing goods as a fraction of GDP, the ratio was 14% in 1986 (as well as in the preceding years - 1981 to 1985). It increased to 17% in 1989-1990 and 16% in 1992. www.insee.fr/fr/indicateur/cnat_annu/base_95/principaux_resultats/commerce_ext.htm/t_1501bis_95.xls and [t_1105_95.xls](http://www.insee.fr/fr/indicateur/cnat_annu/base_95/principaux_resultats/commerce_ext.htm/t_1105_95.xls) (accessed 26 February 2008).

new sourcing options was a signal that foreign outsourcing was a potential threat, in particular for industries or firms in which high wages were due to the presence of strong unions and the absence of product market competition. At the same time, and for the same reasons, because European firms could export to France more easily, French firms faced increased market pressures, not from Beijing but from other European countries.

Similarly, in the United States, union plants and firms started to lose employment in the 1980s. Many such plants were located in the North and new plants started to open in the non-union South. Foreign-owned car plants started opening in the second half of the 1980s, in particular around Interstate 85.² This move to the South also took place in other industries (see the example of RCA in its various guises described in Cowie, 1999). Of course, in the case of the United States, “imports” may not be the right word and the evidence that unions caused job losses and the associated outsourcing, be it local or foreign, is missing. But, France is a small country when compared with the United States; what is local outsourcing in the United States may be foreign in the analogous situation in France (to the East though, rather than to the South, at least during the analysis period).

The two questions that Kramarz (2010) examines derive from a previous paper: 1) In a context of increased competitive pressures and expanded opportunities due to the SMP, was foreign outsourcing, in particular the foreign outsourcing of final goods (offshoring, hereafter), a possible response to the high wages and strong unions, in particular in those years that followed the election of the French socialist government?; 2) And, indeed, what was the impact of increased outsourcing on wages and employment?³

Even though macro-economists have examined these questions both theoretically and empirically, at the country- or the industry-level, there is virtually no micro-econometric analysis, no empirical examination of the precise mechanisms at work using microdata sources. Kramarz (2010) looks at the effects that can be identified in the French context using differences across and within firms, rather than across industries. More precisely, because he has access to administrative data on the nature and amount of imports and exports measured at firm-level in France (final goods versus intermediates), he observes all firms that outsource intermediates or final goods, and he can compute the firms' competitors importing behaviour. Moreover, thanks to access to administrative data on balance-sheets and employment, he can compute the firms' value-added or employment. Also, by virtue of having access to a survey on union behaviour, he can compute the strength of unions in most firms. Finally, because he uses administrative longitudinal matched employer-employee data on wages, he can measure the changes in individual, not aggregate, wages.

A clear answer to Kramarz (2010)'s questions would contribute to at least two strands of the literature. First, it would inform the wage inequality debate.⁴ Second, because

-
2. See for instance www.csmonitor.com/2008/1205/p01s04-usec.html or www.usatoday.com/money/economy/2008-07-08-1004622626_x.htm among many other press reports.
 3. In this text, I will equate outsourcing with outsourcing from foreign origin.
 4. On one side, Lawrence (1994), Lawrence and Slaughter (1993), Krugman (1995) have argued that recent changes cannot be accounted for by increased trade with low-wage countries. On the other, Wood (1995) has accused trade of being responsible for the deteriorated position of unskilled workers while Leamer (1994) and (1996), and Freeman (1995) appear to stand in the middle. Unfortunately, evidence is not compelling and mostly relies on import penetration measured at the

product market competition is a potential underlying mechanism affecting the labour market, an answer would also contribute to the literature that examines the relationship between wages, bargaining institutions, and profits.⁵

To understand the identification strategy that Kramarz (2010) pursues, the following thought experiment is helpful. French manufacturing was relatively protected from international competition at the beginning of the 1980s. In addition, a relatively large fraction of firms were state-owned (as compared to other similar Western European countries), in particular after the election of President François Mitterrand. This lack of competition induced the creation of rents (a result documented in Abowd, Kramarz, Lengermann, and Roux, 2007). Because of these rents as well as the bargaining institutions, many French firms bargained with their workers, but not all. These bargaining regimes varied from firm to firm. Some unions were in better position to seize the potential rents. However, all firms were hit by exogenous foreign competition shocks. In particular, all French firms were affected by the introduction of SMP at the end of the 1980s, facing increased foreign competition and increased opportunities for outsourcing. Biscourp and Kramarz (2007), based on the same data on trade (imports as well as exports) and on firms, also covering the same time period that I use in the present paper, have shown that import growth (of final goods) was strongly associated with employment losses. They show an association, but no causal relationship. The increased imports from competitors' or increased outsourcing had, nevertheless, the potential to affect the bargaining process because they were likely to change a firm's ability to pay the workers – the size of the quasi-rent – as well as the firm's and the workers' threat points. What happened to wages and employment in these different firms and under these different bargaining regimes? How did unions react? If Kramarz (2010) is able to show, both theoretically and empirically, that strong unions caused offshoring, which in turn caused employment and wage losses, he has found a causal mechanism for Biscourp and Kramarz's result.

With these thought experiments in the back of our minds, let us now present the structure of Kramarz's paper. To capture the influence of outsourcing threats on bargaining, Kramarz starts by presenting a simple model, particularly well-suited to the French institutional setup studied here. It will help us capture the mechanisms through which a firm's outsourcing of final goods can directly affect wages and employment. In particular, the model shows that, with imperfect competition in the product market, firms facing strong unions are likely to use offshoring more intensively than firms facing weaker unions. This is because increased offshoring reduces the size of the rent that the union and the firm bargain over. Indeed, offshoring acts as a threat point in the bargaining process and disciplines workers.⁶ Furthermore, in this context, employment decreases

aggregate or at the sectoral level (see for instance Revenga, 1992, see however Bernard and Jensen, 1997 or the book edited by Robert Feenstra, 2000).

5. Abowd and Lemieux (1993) examine the relation between product market competition and wages in a bargaining framework whereas Blanchflower, Oswald and Sanfey (1996) look at the more general relation between profits and wages. Goldberg and Tracy (2001) as well as Bertrand (2004) focus on recent changes induced by increased import competition and movements in exchange rates. Unfortunately, these last authors used industry-level measures of imports because of the lack of firm-level data.
6. A threat point, also known as the disagreement point V in a game-theoretical context of bargaining, is the value the players can expect to receive if negotiations break down and no bargain can be reached.

when offshoring increases. But, wages do not necessarily decrease (as they are the outcome of the bargaining process, albeit with altered payoff scenarios).

Kramarz's (2010) empirical analysis starts by showing how foreign outsourcing and, more generally, trade competition are related to the size of the rents at the end of the 1980s in French manufacturing. In particular, using a size-of-the-firm discontinuity present within French institutions, he shows that bargaining institutions are likely to cause the observed structure of this relationship. Because bargaining institutions matter and, in particular, unions' strength, he identifies which firms face strong unions, i.e. unions with a strong bargaining power, and which firms face weaker unions. To do this, he estimates a structural wage equation that directly identifies unions' bargaining power. His use of matched employer-employee data sources allows him to directly measure the various components of this structural equation.

Kramarz's (2010) estimates demonstrate that there are essentially two types of firms, depending on their bargaining regime: 1) firms facing strong unions in which workers capture half of the rents and 2) firms facing weaker unions where workers are paid their opportunity wage. Moreover, he highlights that workers are negatively affected by import competition. Finally, the paper shows that the first group of firms (i.e. with strong unions) indeed increased outsourcing and, simultaneously, reduced employment over the 1986-1992 period, as predicted by the model, whereas the second group (i.e. firms with weaker unions) did exactly the opposite.

There are several additional elements, absent from the above papers, which deserve attention. First, the time period covered by the studies is from 1986 to 1992. There is a good reason for this: after 1992, customs data do not capture the full extent of trade since all movements within the European Union that are below a given threshold are not reported anymore. However, the composition of trade (in terms of products and country of destination or origin) has obviously changed. Second, the analysis was performed for manufactures in the aggregate. Some industry dimension would certainly be useful. Third, the results found in the above paper (Biscourp and Kramarz, 2007) show a negative association between employment and imports. It is the only paper having found such results (a Danish paper finds a positive correlation for small and medium size firms and a negative relation for larger firms). A natural question then ensues: Why? And who is right?

For instance, the role of unions in the firms' decision to offshore has not been extensively studied. Can we find similar results to the ones above when examining the period from 1995 to 2004 (for which similar data are available)? Some of these questions are addressed in the following analysis.

3. Data description

This paper uses data from various sources. First, I will describe the data on imports and exports (Customs). Then, I will explain the data on firm-level economic variables (FICUS). Also, I will present a third source, the so-called DADS, with data on employment (and potentially wages), coming from LEED (Longitudinal Employer-Employee Data). Finally, I will describe the lengthy control and matching process of these three data sets.

The customs data set

Up to 1992 all shipments of goods entering or leaving France were declared to French customs either by their owners or by authorized customs commissioners. Starting in 1993, only shipments above a certain level (essentially 1 million French Francs) for and from countries within Europe were declared (different denominations and composition had to be declared depending on the year). However, firms often declared amounts below the threshold. Hence, I keep every declaration. These declarations constitute the basis of all French trade statistics. Each shipment generates a record. Each record contains the firm identifier, the SIREN – a unique number that identified each firm in France, the country of origin (for imports) or destination (for exports), a product identifier (a 6-digit classification), and a date. All records are aggregated first at the monthly level. In the data files accessible to researchers, these records are further aggregated by year and by 3-digit product (NAP 100 classification, the equivalent of the 3-digit SIC code) until 1992 and, for the period from 1995 to 2004 that I study, I kept a more disaggregated (4-digit) product classification. Therefore, each observation is identified by a SIREN, a product code, a country code, an import or export code, and a year. In the following analysis, I restrict attention to all firms in the manufacturing sector in years 1995, 1998, 2001, and in year 2004. Hence, I aggregate across manufacturing products exported or imported. I can, thus, measure each firm's amount of total exports and imports in the four sample years that I examine by country of destination or origin. Transactions are recorded in French Francs and reflect the amount received by the firm (i.e. including discounts, rebates, etc.). Because I also use data produced after 2002, all amounts have been translated into Euros in order to allow comparisons. For instance, the data in 2001 has 4 455 014 observations. Aggregated by firm, there are 118 562 observations for imports and 120,793 for exports.

To obtain more detailed information about the type of product imported, I follow Biscourp and Kramarz in defining two types: intermediates and finished goods. Whenever the product classification of the imported product is within the same classification as that defining the main activity of the firm (at the 4-digit level), the imported product is labelled “finished good”; otherwise it is labelled “intermediate”. Roughly, two-thirds of the imported products are intermediates.

The FICUS data set

The FICUS data base provides firm-level information. FICUS is the outcome of the SUSE system, (SUSE stands for *Système Unifié de Statistique d'Entreprises* or Unified System of Firm-level Statistics). Its goal is to establish a consistent set of firm-level variables and statistics by the joint use of two base sources. The first one is fiscal in its origin and groups the *bénéfices industriels et commerciaux* (BIC) and the *bénéfices non commerciaux* (BNC), two fiscal regimes that cover essentially all French firms. The other one, the annual survey of firms (EAE. *enquête annuelle d'entreprises*) is statistical in

nature and is the outcome of a complex procedure in which both the Ministry of Industry and the industry branches, as represented by the business unions, take part. It allows the analyst to study the productive system from various angles: production, inputs, revenue and expense accounts, balance-sheet and economic performance of firms. To facilitate the exploitation of this complex and rich source, a unique file has been created, the so-called FICUS (*fichier complet unifié de SUSE*, the unified and complete file from SUSE) mentioned earlier. This file essentially covers all firms and all fiscal regimes, with the exception of the micro-BIC (very small firms with sales below EUR 80 000 in 2011, EUR 35 000 for service firms), agricultural firms (*Bénéfice Agricole*) and farms under the BIC regime. It also contains all industries except for agriculture, both for metropolitan France and the overseas departments. Furthermore, it includes a broad but limited number of economic and accounting variables (simplified balance sheet and simplified revenue and expense accounts). For instance, it contains total sales, total labour costs, value-added, total employment, total purchases and profits. Focusing on three sub-periods of low inflation, 1995-1998, 1998-2001, and 2001-2004, I use these variables measured in nominal terms. In 2001, the number of observations in the initial FICUS file is 2 270 955.

The DADS data set

The DADS (*Déclaration Annuelle de Données Sociales*) comprises all records of wages of all employees, as declared by employers to the tax authority. It is then compiled into an exhaustive data set organized by pairs of years, by establishment and number of workers within a given establishment. Hence, the year t file comprises all employees within a given establishment for year $t-1$ and year t . When a worker is present in both years in the establishment, there is a single line. When he/she is present in $t-1$, all year t variables are missing, and conversely for year t . Viewed from a worker perspective, there is a unique person identifier and, hence, it is possible to have a comprehensive view of each worker's employers and wages. The total wages given to any person are then compared by the tax authority to the income declaration that each household has to file every year. Starting from 2009, the declared wages are automatically inserted onto the income declaration form by the tax authority, which is therefore pre-filled. Each individual record includes the start date and the end date of the spell, the number of hours, and the gross and the net earnings that accrued to the worker during the spell for each of the two years $t-1$ and t . It also includes the skill level (3- or more often 2-digits classification), sex and nationality of the worker. From this file, I performed an aggregation at different levels.

First, the data are aggregated by establishment and year, for year t going from 1996 to 2003. It allows me to compute various measures of employment, weighted or not by hours and days of work within each year. Second, the data are examined at the individual-, establishment-, and year-level as follows. Establishments can be destroyed and created with no change in economic activity when, in particular, they move from one location in a locality to another location within the same locality. Hence, there is potentially too much employment creation and destruction. To control for this process, I do the following. I take all those workers within an establishment who move to another establishment either of the same firm or from a different firm within the same locality. If the fraction of such workers is “large” enough with respect to the establishment employment, then the new establishment is further examined. First, it is checked that it was not in existence previously. Similarly, it is checked that the old establishment does not exist afterwards. Then, if they both belong to the same firm, the new establishment is “connected” to the old one and it is treated as if there were no establishment creation or destruction. If these

establishments do not belong to the same firm, then I checked whether it is a particular establishment within the two firms that received a transfer of most workers. If not, then if all establishments of the origin firm have “most” workers transferred to the same number of establishments of the destination firm, and then it is considered that there is no establishment creation or destruction. Using this procedure, I compute employment (weighted by days) for each year between 1995 and 2004 at the establishment level. It is then aggregated at the firm level, using all available establishments, once checked for their true birth or death as described just above. In 2001, there are 2 039 199 establishments from all industries for which we try to measure employment.

Matching of the three files

First, I match FICUS with the DADS file at the establishment level. In 2001, the resulting data set has 2 100 438 observations. Then, the equivalent file for 2004 (2 367 270 observations) is matched with that of 2001. Then, this matched file (2 806 116 observations) is restricted to the manufacturing firms (excluding extractive industries) with positive sales either in 2001 or in 2004. The file has now 241 702 observations (establishments). However, some firms may well be absent from the DADS when they have no salaried employees and still be in FICUS (with zero employees in both 2001 and 2004). These firms are also kept, resulting in a data set with 288 460 observations (again establishments). These establishments are then aggregated at the firm level, resulting in 240 447 unique firms present in 2001, 2004 or both. These observations are now matched with the customs data file to enter the trade activity. Since most firms do not trade (import or export) in any of these years, we keep all firms from the previous match. For the period 1998-2001, the number of firms is 254 621 and for the period 1995-2001, the number of firms is 261 056.

These files contain all relevant variables. However, measurement errors in the variables of interest may well have slightly decreased the size of some of our analysis files. We will see in what follows that the measurement error is indeed a serious issue with no easy escape-strategy.

4. Aggregate estimation results

In this section, I present estimates of equations that relate employment and trade activity at the firm-level for French manufacturing firms. These equations are descriptive and should be seen as descriptive with little causal interpretation offered. They must be considered as the first stage of a more ambitious program, including the search for potential instruments or, more probably, the estimation of a structural model for exporting/importing firms with their associated consequences on employment.

Let me first describe the estimated relations. I compute the rate of growth as follows (in the spirit of Davis and Haltiwanger, 1999). First, there are three sample periods: 1995-1998, 1998-2001, and 2001-2004. Then, I define employment of firm i at the beginning and at the end of each sample period as L_i^B and L_i^E . Average employment over the period is defined as $\bar{L}_i = \frac{L_i^B + L_i^E}{2}$ and I use it to compute employment growth in the firm over the period:

$$\Delta L_i = \frac{L_i^E - L_i^B}{\bar{L}_i}$$

To describe these data further, I apply a simple regression analysis to the set of all (continuing, dead or newly born) firms. Again, I do not attach any causal interpretation to my specification or results. More precisely, for each of my three sample periods, I estimate the following simple first-difference regression:

$$\Delta L_i = \alpha \Delta Tr_i + \alpha \Delta Z_i + \varepsilon_i \quad (1)$$

where ΔL_i is the employment growth rate for firm i during the sample period (defined as before), ΔTr_i is a vector of measures of trade growth at firm i (described just below), ΔZ_i is a vector of measures of economic shocks potentially affecting firm i (also described just below), and ε_i is an i.i.d. (independent and identically distributed) shock. My vector of measures of internationalization includes the change in imports (or exports) between the beginning and the end of the period as a fraction of sales. To control for shocks that might have affected the firm, ΔZ_i includes the growth rate of firm's total sales (computed à la Davis and Haltiwanger), the change in the ratio of firm's goods purchases to total sales, and the change in the ratio of firm's intermediates purchases to total sales. The regression is weighted either by average employment \bar{L}_i or by average sales. Various robustness checks are estimated and presented.

The first and simplest specification, in which ΔZ_i only includes total sales growth rate, is presented in Table 1. Furthermore, the set of observations is restricted to those for which the discrepancy between employment change between the beginning and the end of the sample period as measured with FICUS and as measured with the DADS is “small”. Here, “small” means 1 000 in absolute value. There are many potential reasons for such differences. They have to be explored further. The set of such firms is quite small (look at the number of observations at the bottom of Table 1 and at the bottom of Table 5). There are less than a hundred firms in each sample period, but these firms are potentially large at either the beginning or the end of each sample period. Hence, their inclusion might affect the estimated results. This is something I will check later in the text.

Table 1. Net job creation rate

	1995-1998		1998-2001		2001-2004	
Intercept	-0.058	0.001	-0.044	0.001	-0.040	0.001
Change in export intensity	-0.251	0.017	-0.035	0.003	-0.227	0.016
Change in import intensity	0.004	0.003	-0.025	0.006	0.049	0.009
Growth of sales	0.924	0.001	0.907	0.001	0.894	0.001
R-Square	0.8447		0.8248		0.8329	
Number of observations	176 180		180 055		172 093	

Note: In this table and subsequent tables the first column under each time period represents coefficients and the second represents standard errors.

The estimates of Table 1 show that employment essentially decreased in manufacturing in each period (even though the variables are not cantered, their means are very close to zero). They also show that sales go hand in hand with employment changes. Finally, focusing on our main variables of interest, changes in export intensity (measured

as a ratio of the change in the level of exports to average sales over the sample period) has a depressing effect on employment, whereas the effect of changes in import intensity appear to be small, but there is large variation. Again, there is no causal meaning that can easily be attached to such results. For instance, firms might have decreased employment and, therefore, reduced their costs in order to increase their exporting capacity. However, controlling for changes in sales reduces the potential for such an interpretation.

Table 2 is similar in spirit to Table 1. Some firm variables are added to the regression as control variables. Before discussing them, it must be noted that none of the previous conclusions is altered. The variables that were added to the initial ones are measures of changes in the reach of the firm. Because customs data allow me to know the destinations and origins of the exports and imports, respectively, I can compute the changes in this number of destinations and origins. Because customs data allow me to know the products imported or exported, I can compute changes in quantities, with the underlying idea that an increase in the number of imported products might be associated with substitution effects, whereas an increase in the number of exported products might be associated with an expansionary strategy. In fact, this presumption appears to be turned on its head. When the number of exported products increases, the effect on employment in France is clearly negative for all periods. Interestingly, the opposite phenomenon appears to be associated with an increase in the number of products imported: more products imported are associated with an increase in employment. As for the number of countries, increasing the number of destinations is “good” for employment and increasing the number of sourcing countries is “good” in two sub-periods.

Table 2. Net job creation rate

	1995-1998		1998-2001		2001-2004	
Intercept	-0.0512	0.0008	-0.0400	0.0008	-0.0351	0.0008
Change in export intensity	-0.3429	0.0171	-0.0393	0.0031	-0.3541	0.0170
Change in import intensity	0.0050	0.0033	-0.0292	0.0054	0.0359	0.0091
Growth of sales	0.9050	0.0011	0.8858	0.0011	0.8713	0.0011
Change in number of countries of imports	-0.0033	0.0002	0.0015	0.0002	0.0033	0.0002
Change in number of imported products	0.0066	0.0002	0.0001	0.0000	0.0002	0.0000
Change in number of countries of exports	0.0013	0.0001	0.0018	0.0001	0.0014	0.0001
Change in number of exported products	-0.0018	0.0002	-0.0003	0.0000	-0.0006	0.0001
Number of closed establishments	0.0002	0.0002	0.0043	0.0003	-0.0071	0.0004
Change in number of establishments	-0.0046	0.0003	0.0073	0.0006	-0.0068	0.0007
Number of permanent establishments	-0.0020	0.0001	-0.0015	0.0001	-0.0005	0.0001
Change in number of <i>zones d'emploi</i>	0.0127	0.0005	0.0023	0.0007	0.0161	0.0010
R-Square	0.8478		0.8278		0.8355	
Number of observations	176 180		180 055		172 093	

Note: *Zone d'emploi* refers to geographic areas that constitute local labour markets.

Using data from the DADS, it is possible to compute the number of new, ongoing, and closed establishments over each sample period. By using the location of these establishments, it is also possible to measure the change in geographic dispersion of the firm within France. Results from Table 2 show that a larger number of permanent (ongoing) establishments is always associated with employment losses. Similarly, an increase in geographic dispersion across French establishments is associated with an increase in employment. However, the effects of new openings and closures appear more complex. First, the addition of a new establishment has a negative impact in two of the three sub-periods. Second, the impact of the closure of an establishment has to be computed from the sum of the “closed establishments” effect and the sum of changes in

the number of establishments (applying a value of minus one). Hence, the effect of the closure of one establishment is positive in 1995-1998, negative in 1998-2001, and essentially zero in 2001-2004 (notice that 2001 is the starting date of a clear decrease in manufacturing employment, as measured in aggregate statistics). The underlying impact of globalisation on establishments' operations is clearly hard to capture from these simple regressions.

The next regressions test the robustness of those that I have just presented using various strategies. First, I add two variables in the base equation to control for purchases of the firm: the change in purchases of intermediates and the change in purchases of goods (both as a ratio of total sales). Results are presented in Table 3. They clearly show elements of consistency with the results from Biscourp and Kramarz (2007): goods play a role that appears to widely differ from that played by intermediates. Purchases of goods, including imports, destroy employment, whereas there is no such relation between employment and purchases of intermediates.⁷

Table 4 presents results of regressions that use the same variables as in Table 3 but with a different weighting scheme. Rather than using average employment in the period, I use average sales in the period. Results are very similar to those presented above. The coefficients on export- and import intensity are of the same sign. This is also true for the coefficients for the change in the purchases of goods (still negative).

Table 5 uses again the same variables and the same weighting scheme, but includes all observations; in particular those for which estimates of changes in employment computed using the DADS and using FICUS were very different. The main message is that export intensity is associated with employment losses, similarly to changes in the purchases of goods. These points seem very robust across specifications and samples.

Table 6 adds a further twist to the previous specification by distinguishing imports using the two product types, as defined above: imports of finished goods on one side (when the imported product is of the same industry as that of the firm) and imports of intermediates for all other products (see also Biscourp and Kramarz, 2010). In reading the table, it is important to note that it reflects the separate, simultaneous inclusion of purchases (including imports) of goods and intermediates. Notice first that most coefficients in Table 6 are quite similar to those in Table 5. However, those that change sign and magnitude are those of purchases and imports of intermediates. Results are not stable from period to period. For the first sub-period, all purchases of goods, be they imports or local, have a similar negative effect on employment. Purchases of intermediates from France have a negative impact while purchases of intermediates from outside France (the sum of the two coefficients) have an essentially zero effect. For the 1998-2001 sub-period, signs swap and magnitudes are altered. The imports of goods have a greater, more negative, impact on employment than local purchases of goods. As for intermediates, local purchases have a mildly positive impact on employment while foreign purchases have a quite negative impact. Finally, for the later sub-period, local purchases of goods and intermediates have a negative impact on employment growth, whereas foreign purchases (imports) of goods and intermediates have a clearly positive impact on employment. Finally, the impact of exports on employment growth is again negative in each and every sub-period.

7 Unfortunately, at this stage, I did not have enough time to code the imports into intermediates and goods as I did with Biscourp for the 1986-1992 period. But the construction of such variables is clearly high on my agenda.

Table 3. Net job creation rate (weight = average employment)

	1995-1998		1998-2001		2001-2004	
Intercept	-0.060	0.001	-0.043	0.001	-0.040	0.001
Change in export intensity	-0.259	0.017	-0.036	0.003	-0.247	0.016
Change in import intensity	0.004	0.003	-0.017	0.006	0.064	0.009
Growth of sales	0.933	0.001	0.920	0.001	0.897	0.001
Growth in purchase of goods	-0.107	0.005	-0.138	0.005	-0.080	0.004
Growth in purchases of intermediates	0.000	0.000	-0.012	0.002	0.007	0.002
R-Square	0.8452		0.8255		0.8333	
Number of observations	176 180		180 055		172 093	

**Table 4. Net job creation rate
(alternative weighting scheme: weight = average scales)**

	1995-1998		1998-2001		2001-2004	
Intercept	-0.087	0.001	-0.073	0.001	-0.058	0.001
Change in export intensity	-0.542	0.023	-0.030	0.008	-0.447	0.020
Change in import intensity	0.085	0.013	-0.283	0.026	0.369	0.023
Growth of sales	0.942	0.002	0.862	0.002	0.888	0.002
Growth in purchase of goods	-0.230	0.005	-0.195	0.005	-0.302	0.005
Growth in purchases of intermediates	-0.124	0.003	0.056	0.003	-0.064	0.004
R-Square	0.7415		0.7384		0.7565	
Number of observations	176 180		180 055		172 093	

**Table 5. Net job creation rate
(all observations included; weights = average sales)**

	1995-1998		1998-2001		2001-2004	
Intercept	-0.092	0.001	-0.127	0.001	-0.051	0.001
Change in export intensity	-0.700	0.023	-0.111	0.010	-0.079	0.014
Change in import intensity	0.186	0.013	1.146	0.028	-0.044	0.023
Growth of sales	0.951	0.002	0.992	0.002	0.912	0.002
Growth in purchase of goods	-0.256	0.005	-0.215	0.007	-0.295	0.005
Growth in purchases of intermediates	-0.116	0.003	-0.336	0.004	0.047	0.003
R-Square	0.7512		0.7271		0.8617	
Number of observations	176 237		180 140		172 167	

Table 6. Net job creation rate with imports of goods and intermediates (alternative weighting scheme; weight average sales)

	1995-1998		1998-2001		2001-2004	
Intercept	-0.087	0.001	-0.073	0.001	-0.053	0.001
Change in export intensity	-0.530	0.024	-0.039	0.008	-0.432	0.020
Change in import of goods intensity	0.027	0.025	-0.159	0.034	0.653	0.027
Change in import of intermediates intensity	0.115	0.013	-0.125	0.038	0.286	0.026
Growth of sales	0.942	0.002	0.862	0.002	0.887	0.002
Growth in purchase of goods	-0.230	0.005	-0.199	0.005	-0.298	0.005
Growth in purchases of intermediates	-0.124	0.003	0.052	0.003	-0.066	0.004
R-Square	0.7415		0.7382		0.7570	
Number of observations	176 180		180 055		172 093	

5. Industry-level estimation results

Because the way trade is connected to labour market outcomes may vary significantly from industry to industry, the next section examines the estimates resulting from equations similar to the one presented in Table 3, by industry. The industries analyzed here are based on a classic decomposition of manufacturing industries. I use the following list: automobile, consumption goods, equipment goods, intermediate goods, and agro-industries. Except for the automobile industry, the number of firms (observations) is relatively similar across sectors, even though the structure of these firms is quite different (in terms of skill structure and capital stock, among other characteristics).

Estimates are presented in Table 7a to Table 7e. First, all these industries tend to lose jobs. Second, in an overwhelming number of cases, growth of exports is associated with employment losses (the only exception is automobile between 1995 and 1998). Finally, there is no obvious regularity in the sign of the relationship between changes in imports and job creation or destruction.

In a further analysis, I redid the regression with purchases included (as in Table 3 or 4), by industry. Results were quite similar to those shown in Tables 7a to 7e. In addition, for most industries, but equipment goods, increased purchases of goods were associated with decreased employment. However, in the equipment goods industry, increased purchases of goods were clearly associated with increased employment, reflecting potentially the nature of investment goods imported in this case.

Table 7a. Net job creation rate: Auto industry

	1995-1998		1998-2001		2001-2004	
Intercept	-0.112	0.006	-0.032	0.007	-0.100	0.008
Change in export intensity	1.087	0.203	-0.880	0.194	-0.640	0.227
Change in import intensity	-2.692	0.225	0.012	0.011	0.244	0.236
Growth of sales	0.892	0.011	0.923	0.012	0.838	0.011
R-Square	0.8354		0.824		0.7975	
Number of observations	1 848		1 854		1 818	

Table 7b. Net job creation rate: Consumption goods

	1995-1998		1998-2001		2001-2004	
Intercept	-0.054	0.002	-0.042	0.002	-0.040	0.002
Change in export intensity	-0.318	0.047	-0.116	0.044	0.055	0.049
Change in import intensity	-0.149	0.042	0.062	0.037	0.033	0.050
Growth of sales	0.940	0.002	0.904	0.002	0.888	0.002
R-Square	0.8491		0.8223		0.8194	
Number of observations	41 574		41 029		37 536	

Table 7c. Net job creation rate: Equipment goods

	1995-1998		1998-2001		2001-2004	
Intercept	-0.089	0.002	-0.058	0.002	-0.041	0.002
Change in export intensity	-0.007	0.036	-0.184	0.026	-0.377	0.041
Change in import intensity	-0.013	0.015	-0.165	0.040	0.205	0.046
Growth of sales	0.906	0.002	0.905	0.002	0.865	0.003
R-Square	0.8348		0.8417		0.8169	
Number of observations	31 285		32 505		32 098	

Table 7d. Net creation jobs rate: Intermediate goods

	1995-1998		1998-2001		2001-2004	
Intercept	-0.048	0.001	-0.049	0.001	-0.041	0.001
Change in export intensity	-0.251	0.028	-0.223	0.010	-0.234	0.033
Change in import intensity	0.006	0.004	-0.028	0.013	0.031	0.011
Growth of sales	0.920	0.002	0.914	0.002	0.906	0.002
R-Square	0.8578		0.8312		0.8572	
Number of observations	47 001		47 151		45 282	

Table 7e. Net job creation rate: agro-industries

	1995-1998		1998-2001		2001-2004	
Intercept	-0.027	0.001	-0.018	0.002	-0.022	0.001
Change in export intensity	-0.883	0.083	0.003	0.003	-0.717	0.075
Change in import intensity	0.026	0.046	-0.101	0.064	-0.128	0.075
Growth of sales	0.948	0.002	0.920	0.002	0.931	0.002
R-Square	0.8369		0.8053		0.8288	
Number of observations	54 472		57 516		55 359	

6. Conclusion

This version of the paper has examined, in France, the relation between imports, and trade more generally, and employment. There are some simple patterns in our findings that appear to be stable. In most cases, the association between export growth and employment creation does not go necessarily in the expected direction. Similarly, import growth has effects on employment that vary with the period and the industry. Finally, the most stable factor affecting employment negatively appears to be purchases of goods, either from a French firm or from a foreign one. The estimates obtained when distinguishing between imports of goods and imports of intermediates are reminiscent of those of Biscourp and Kramarz (2007). Interestingly, the papers that have tried to reproduce those results for other countries have not managed to find the same effect. Hence, the present findings for the recent period together with those for the period from 1986 to 1992 in Biscourp and Kramarz (2007) vindicate those by Kramarz (2010), for whom offshoring in France is a result of strong unions, a French specificity.

Is it possible to provide a “unified” interpretation for these results? Well, in France manufacturing industries are characterized by the prevalence and overall strength of very large firms, with a lack of what Germans call *Mittelstand*, i.e. middle-size firms. If we adopt a life-cycle view of a firm, those firms that are large essentially tend to downsize their operations in France and expand them abroad (at the same time exporting more globally), in particular by producing more and more goods in countries other than France. Indeed, they appear to be pushed to do this because of unions, if we believe Kramarz’s (2010) results. Now, smaller firms in France that aspire to grow have difficulties in expanding in their home market. Many reasons may explain this: engineers and business graduates (in general, alumni from the *Grandes Ecoles* system) going almost exclusively to very large firms, lack of product market competition, state support to national champions, high firing costs discouraging firms from growing and workers from moving from firm to firm, among other factors. Hence, we may observe in the data a (somewhat surprising) statistical association between export growth and employment decrease. The observed estimates are driven mostly by the behaviour of large firms and their pattern of export growth, as well as the employment stability of smaller firms who face difficulties in expanding at home. All the above points must be explored further to understand more fully the link between the trade and employment, at least in France.

References

- Abowd, J. and T. Lemieux (1993), “The Effect of Product Market Competition on Collective Bargaining Agreements: the Case of Foreign Competition in Canada”, *Quarterly Journal of Economics*, 983-1014.
- Abowd, J., F. Kramarz, D. Lengerman and S. Roux (2007), "Persistent Inter-Industry Wage Differences: Rent Sharing and Opportunity Costs", Crest Working Paper.
- Bernard, A.B. and J.B. Jensen (1997), “Exporters, Skill Upgrading, and the Wage Gap”, *Journal of International Economics*, 42, 1-25.
- Bertrand, M. (2004), “From the Invisible Handshake to the Invisible Hand? How Import Competition Changes the Employment Relationship”, *Journal of Labour Economics*, 22, 4, 723-766.
- Biscourp, P. and F. Kramarz (2007), “Employment, Skill-Structure, and International Trade: Firm-Level Evidence for France,” *Journal of International Economics*, 72, 1, 22-51.
- Blanchflower, D., A. Oswald and P. Sanfey (1996), “Wages, Profits, and Rent-Sharing”, *Quarterly Journal of Economics*, 111, 227-251.
- Cowie, J.R. (1999), “Capital Moves: RCA's 70-year Quest for Cheap Labour”, Cornell University Press, 279 pages.
- Davis, S.J., J. Haltiwanger (1999), “Gross Job Flows,” *Handbook of Labour Economics*, O. Ashenfelter, D. Card (ed.), Vol. 3b, Elsevier, Amsterdam.
- Eaton, J., S. Kortum and F. Kramarz, “An Anatomy of International Trade: Evidence from French Firms”, *Econometrica*, forthcoming.
- Eaton, J., S. Kortum, F. Kramarz and R. Sampognaro (2011), “Wages, Employment, and International Trade”, mimeo.
- Feenstra, R.C. (2000), “The Impact of International Trade on Wages”, The University of Chicago Press for the NBER, 406 pages.
- Feenstra, R.C. and G.H. Hanson (1995), “Foreign Investment, Outsourcing and Relative Wages”, *Document de travail NBER 5121*.
- Feenstra, R.C. and G.H. Hanson (1996), “Globalisation, Outsourcing, and Wage Inequality”, *Document de travail NBER 5424*.
- Freeman, R. (1995), “Are your Wages Set in Beijing?” *Journal of Economic Perspectives*, 9, 15-32.
- Fontagné, L., M. Freudenberg and D. Unal-Kesenci (1995), “Régionalisation et échanges de biens intermédiaires”, *Document de travail CEPII 95-11*.
- Goldberg, L. and J. Tracy (2001), “Exchange Rates and Wages”, *Federal Reserve Bank Working Paper*.
- Helpman, E., O. Itskhoki and S. Redding (2010), “Inequality and Unemployment in a Global Economy”, *Econometrica*, 78: 1239-1283.

- Kramarz, F. (2010), “Offshoring, Wages, and Employment: Evidence from Data Matching Imports, Firms, and Workers”, *Crest Working Paper*.
- Krugman, P. (1995), “Growing World Trade: Causes and Consequences”, *Brookings Papers on Economic Activity, Microeconomics*, 1, 327-377.
- Lawrence, R.Z. (1994), “Trade, Multinationals, and Labour”, *NBER Working Paper* 4836.
- Lawrence, R.Z. and M. Slaughter (1993), “International Trade and American Wages in the 1980's: Giant Sucking Sound or Small Hiccup?” *Brookings Papers on Economic Activity, Microeconomics*, 2, 161-226.
- Leamer, E. (1994), “Trade, Wages, and Revolving Door Ideas”, *NBER Working Paper* 4716.
- Leamer, E. (1996), “In Search of Stolper-Samuelson Effects in U.S. Wages”, *NBER Working Paper* 5427.
- Melitz, Marc J. (2003) “The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity”, *Econometrica*, 71, 1695-1725.
- Revenga, A.L. (1992), “Exporting Jobs: The Impact of Import Competition on Employment and Wages in U.S. Manufacturing”, *Quarterly Journal of Economics*, CVII, 255-282.
- Venables, A.J. (1999), “Fragmentation and Multinational Production”, *European Economic Review*, 43, 935-945.
- Wood, A. (1995), “How Trade Hurt Unskilled Workers”, *Journal of Economic Perspectives*, 9, 57-80.