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The EU-EFIGE/Bruegel-UniCredit dataset

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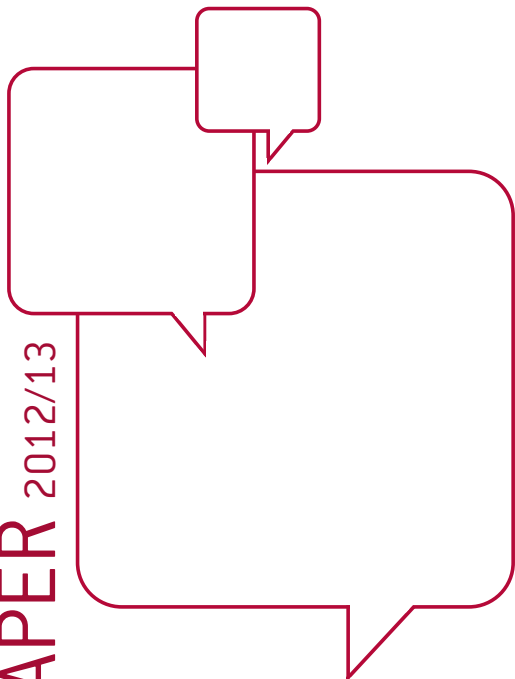
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THE EU-EFIGE/ BRUEGEL-UNICREDIT DATASET

CARLO ALTOMONTE* AND TOMMASO AQUILANTE**

Highlights

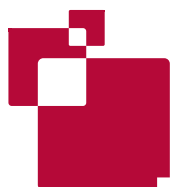
- This paper describes the EU-EFIGE/Bruegel-UniCredit dataset (in short the EFIGE dataset), a database recently collected within the EFIGE project (*European Firms in a Global Economy: internal policies for external competitiveness*) supported by the Directorate General Research of the European Commission through its 7th Framework Programme and coordinated by Bruegel.
- The database, for the first time in Europe, combines measures of firms' international activities (eg exports, outsourcing, FDI, imports) with quantitative and qualitative information on about 150 items ranging from R&D and innovation, labour organisation, financing and organisational activities, and pricing behaviour. Data consists of a representative sample (at the country level for the manufacturing industry) of almost 15,000 surveyed firms (above 10 employees) in seven European economies (Germany, France, Italy, Spain, United Kingdom, Austria, Hungary). Data was collected in 2010, covering the years from 2007 to 2009. Special questions related to the behaviour of firms during the crisis were also included in the survey.
- We illustrate the construction and usage of the dataset, capitalising on the experience of researchers who have exploited the data within the EFIGE project. Importantly, the document also reports a comprehensive set of validation measures that have been used to assess the comparability of the survey data with official statistics. A set of descriptive statistics describing the EFIGE variables within (and across) countries and industries is also provided.

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1. Introduction

Competitive pressure has been rising steadily in international and domestic markets. New technologies, the loosening of trade barriers and the rise of the emerging economies are forcing European firms to readjust and reorganise their activities so as to cope with increasingly globalised markets and production networks. These patterns affect manufacturers but also service companies, given the increasing tradability of their products. They also influence the geographic distribution of economic activities within and outside the EU internal market.

However nations do not trade, nor do sectors. It is firms that trade. This simple truth makes it clear that understanding the interaction between globalisation and the European economy requires an in-depth analysis of how firms are coping with this challenging environment, and particularly how they are reorganising their international activities in the internal market and outside Europe.

Looking at firms is an extremely fruitful approach to understand in detail how globalisation affects the overall European economy and the welfare of European citizens. The reason is that much of the adjustment to the globalisation shock does not run only between sectors; increasingly both winners and losers from globalisation can be found also within sectors.

This intra-sectoral dimension is quite a conundrum for the standard analysis of trade specialisation, which traditionally sets industries and the characteristics of their production processes at the core of the international division of labour. In particular, its solution requires the collection of harmonised and highly detailed firm-level data across European countries that at the moment just do not exist. This is an unavoidable prerequisite for pushing ahead the boundaries of research to provide innovative tools for sound policy making, which is the final aim of the EFIGE project.

Both the scientific and the policy communities agree on the fact that the setup of a firm-level database on trade, comparable across several European countries, will allow research to go well beyond the state of the art, and answer questions that were left aside until now because of the lack of data. This, in turn, will improve the understanding of how globalisation affects European firms and thus policy making in Europe.

The project EFIGE – *European Firms in a Global Economy: internal policies for external competitiveness* – supported by the Directorate General Research of the European Commission through its 7th Framework Programme, aims at exploring in details these firm-level dynamics.

It has been coordinated by Bruegel, and carried out from September 2008 to August 2012 by leading academic institutions in Europe¹. Scientific partners of the project also include some National Central Banks (Bundesbank, Bank of France, Bank of Italy, Bank of Spain, Bank of Belgium) and international institutions (OECD).

Differently from some publicly available micro-based datasets developed at the European level (eg the European Union Labour Force Survey, the Community Innovation Statistics or the European Community Household Panel) which focus on one specific dimension of economic activity, EFIGE is focused on international operations, but also contains a broad range of variables (around 150) on other different sets of firms' activities: proprietary structure of the firm and governance; structure of the workforce; investment, technological innovation and R&D; internationalisation; finance; market and pricing.

With respect to commercially available cross-European datasets (eg Amadeus from Bureau van Dijk), EFIGE-type surveys contain not only balance sheet data, to which they can be linked, but also both qualitative and quantitative information on firms' characteristics and activities which is typically not observable, but is crucial for competitiveness analysis.

Finally official micro-based national statistics (the data typically compiled by statistical offices or central banks, eg matched custom and firm-level data on international transactions and which generally have the advantage of being based on the universe of companies) are not harmonised across countries and cannot be used effectively for consistent cross country analysis. Also, these National statistics are frequently focused on a subset of activities.

Consequently, EFIGE data can be uniquely used to identify and compare firms across countries in terms of their different modes of internationalisation and to analyse how these outcomes are related to other firm specific variables and broader indicators of competitiveness like productivity.

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2. The EFIGE data

At the heart of the project lies the EU-EFIGE/Bruegel-UniCredit dataset, a unique firm-level database of representative samples of manufacturing firms (with a lower threshold of 10 employees) across European countries.

The data collection has been performed through a survey carried out by a professional Contractor (GfK, the fourth largest market research company in the world), with the aim of gathering both qualitative and quantitative information at the firm level. The questionnaire submitted to the firms (also available on the EFIGE website) covers six different broad areas, for a total of some 150 variables:

- Structure of the firms (company ownership, domestic and foreign control, management)
- Workforce (skills, type of contracts, domestic vs. migrant workers, training)
- Investment, technological innovation, R&D (and related financing)
- Export and internationalisation processes
- Market structure and competition
- Financial structure and bank-firm relationship

These topics are organised around six different sections in the questionnaire for a total of some 150 items. As the survey has been run in early 2010, information is mostly collected as a cross-section for the last available budget (year 2008), although some questions cover the period 2007-09 and/or the behaviour of firms during the crisis.

In order to ensure standard statistical representativeness of the collected data, the dataset has been built so as to fulfil three criteria:

1 – the availability of an adequately large target sample of firms, initially set at around 3000 firms for large countries (Germany, France, Italy, Spain and the UK), and some 500 firms for smaller countries (Austria and Hungary), ie a foreseen total of 16,000 operable questionnaires (the exact numbers by country have been defined in accordance with country-specific sampling procedures)

2- a minimum response rate of 85-90% for 5 to 10 key questions previously agreed; a minimum response rate for 10/15 important questions not below 70%; an overall average of response rates not below 60% for the remaining part of the questionnaire.

3- a proper stratification of the sample in order to ensure representativeness of the collected data ex-ante and ex-post for each country; in particular three dimensions have been used for the stratification of the sample: industries (11 NACE_CLIO industry codes), regions (at the NUTS-1 level of aggregation) and size class (10-19;

20-49; 50-250; more than 250 employees). Given their relevance in aggregate competitiveness dynamics, but a relative 'thin' weight in a standard stratification of the population of firms, large firms have been oversampled (doubling their weight as per the original stratification criteria).

In order to achieve these targets in terms of representativeness, ensuring at the same time an appropriate randomisation of each cell in the stratification, the typical response rates in these type of surveys are such that at least 25,000 firms should be contacted, on average, in each large country and some 5,000 in the smaller countries. The latter resulted in a total of some 135,000 firms to contact for all 7 countries.

In terms of organisation of activities and timing, the survey has been organised around three sequential phases. First, the research teams, together with the Contractor, have jointly worked for around two months to lay down the preparatory ground work:

- initial draft version of the questionnaire and its translation in the different national languages;
- definition of a minimum response rate for some key questions (questions denoted AAA in the DataMap available as Appendix 1 to this paper on the EFIGE website);
- sampling and stratification criteria, with a specific proposal on the oversampling of large companies;
- definition of the survey methodology (CATI, CAWI and a mixed method) for the different classes of firm;
- structure of the Field Reports to be regularly provided by the Contractor in order to constantly monitor the quality of the survey collection
- specific training for the responsible personnel working on the survey, given the technical nature of some of the questions;

A second phase of the survey activities, lasting around four months, has been dedicated to validating the survey strategy, through a pilot exercise in which some 100 firms from large countries and some 50 firms from small countries (trying to achieve a more or less stratified sample) have been interviewed. The validation exercise in particular was carried out to explore four different dimensions: modalities of contact with the surveyed company (to enhance the likelihood of initial acceptance of the interview); clarity vs. ambiguity of the questionnaire, including quality of the translation into local language, and thus average response rate; ease of answer and thus total time of the interview (which had to be kept in any case to around 45' at the maximum); smoothness of automatic built-in filters in the questionnaire.

Based on these results, the questionnaire, and the survey strategy in general, have been fine tuned by the research teams together with the Contractor, in order to maximise the outcome of the actual field work for the entirety of the sample, thus leading to the third and final phase of the survey.

The latter has seen the actual administration of the questionnaire to the sample, until the targets in terms of numbers as well as representativeness were achieved in each country, with regular meetings in order to ensure the smoothness of the exercise throughout. This phase lasted from January to end of May 2010 .

Once the survey was finalised and the rough data transferred from the Contractor to the research teams, the data were reorganised in a STATA compatible format. A Data Map (Appendix 1) has been provided to allow each researcher to link variable labels with the questionnaire, as well as take into account (when relevant) possible filters in the questionnaire (according to which not each company replies to each question).

Appropriate weighting procedures to reproduce representative statistics from the sample (where large firms have been over weighted) have also been designed (see below).

This process yielded a dataset including some 3,000 firms for Germany, France, Italy and Spain, more than 2,200 firms for the UK, and some 500 firms for Austria and Hungary, as reported in Table 1 below.

Table 1: The EFIGE dataset by country

Country	Number of firms
Austria	443
France	2,973
Germany	2,935
Hungary	488
Italy	3,021
Spain	2,832
UK	2,067
Total	14,759

Source: EFIGE Survey dataset. Industry codes are not available for 316 firms.

The distribution of EFIGE's firms by country, industry and size class are reported below in Tables 2 and 3:

Table 2: Distribution of firms by country and size class

Class size	AUT	FRA	GER	HUN	ITA	SPA	UK	Total
Employees (10-19)	132	1,001	701	149	1,040	1,036	635	4,694
Employees (20-49)	168	1,150	1,135	176	1,407	1,244	805	6,085
Employees (50-249)	97	608	793	118	429	406	519	2,970
Employees(over250)	46	214	306	45	145	146	108	1,010
Total	443	2,973	2,935	488	3,021	2,832	2,067	14,759

Table 3: Distribution of firms by country and NACE2 industries

Industry	AUT	FRA	GER	HUN	ITA	SPA	UK	Total
15	32	212	350	62	238	463	147	1,504
17	8	118	77	7	196	46	52	504
18	5	55	17	17	109	50	42	295
19	0	32	13	4	115	47	10	221
20	21	93	103	17	88	212	89	623
21	10	83	62	16	71	27	47	316
22	34	148	215	27	105	100	208	837
24	5	102	95	20	108	121	104	555
25	22	226	192	40	169	148	122	919
26	18	153	94	30	167	163	56	681
27	13	68	58	7	76	68	54	344
28	70	839	510	101	611	580	301	3,012
29	48	249	503	68	381	305	208	1,762
31	20	121	134	19	152	66	124	636
32	5	94	56	9	49	25	101	339
33	15	58	192	6	71	25	80	447
34	6	73	41	11	47	64	33	275
35	2	16	20	3	33	42	21	137
36	5	16	172	18	211	258	258	938
Total	339	2,756	2,904	482	2,997	2,810	2,057	14,345

Note: Industry 15 is merged with industry 16 and industry 31 is merged with industry 30.

3. Validation

The EFIGE data have been integrated with balance sheet data drawn from the Amadeus database managed by Bureau van Dijk, retrieving nine years of usable balance sheet information for each surveyed firm, from 2001 to 2009. These data can be used to further improve on the characterisation of firms included in the survey, in particular by enabling the calculation of firm-specific measures of productivity.

The merging with balance sheet data makes it possible the validation of the data along two different dimensions. First of all, it is possible to compute the correlation over time (2001-09) between some measures of firm performance aggregated from the EFIGE representative samples (with proper weights, see below) at the country level vs. official statistics provided by Eurostat (Structural Business Statistics for manufacturing firms >10 employees). For example, Eurostat reports the average wage paid in the manufacturing industry by firms with more than 10 employees for each country-year. It is thus possible to correlate the latter figures with the micro-based averages obtained, for the same country-year pairs, by the

[weighted] aggregation of the 'cost of employees' item reported in the balance sheets of each firm in the sample².

The correlations for the comparable measures are reported in Table 4 below.

Table 4: Correlations between AMADEUS and Eurostat variables

Number of Employees	0.61***
Revenues/Production value	0.52***
Cost of Employees/Wages	0.71***
Labour Productivity	0.84***

Note: Observations are country-year-specific averages (weighted in AMADEUS sample). Eurostat data are derived from Structural Business Statistics, Manufacturing, over 10 employees

Note also that correlations for countries with particularly good quality in balance sheet data (France, Italy, Spain) are always above 90 per cent (in Germany, Austria, Hungary and UK the EFIGE sample of firms has a number of missing observations in the balance sheet data reported by Amadeus).

It is also possible to calculate the nominal and real productivity dynamics of the EFIGE sample firms over time, and compare them to similar aggregate statistics (in this case retrieved from the STAN dataset of the OECD). The latter is reported in Table 5 below.

Table 5: Labour productivity growth. Comparison between EFIGE (merged with Amadeus) and OECD- STAN

Country	Year	STAN not deflated	Amadeus-Efige not deflated	STAN manufacturing deflator	Amadeus-Efige, manufacturing deflator	Amadeus-Efige, 2-digit deflator
France	$\Delta(2008-2001)$	9.80	10.24	12.63	12.62	14.14
Spain	$\Delta(2008-2001)$	9.57	9.66	1.55	1.13	-0.11
Italy	$\Delta(2008-2001)$	6.38	7.95	-2.00	-0.51	-1.51

Note: France and Spain do not have information on employees for 2008 in the OECD-STAN database: the aggregate values refer to 2007.

Finally, using data directly from the EFIGE Survey it is technically possible to compare the extent to which the exercise is able to replicate the extensive margin of export activities (number of exporters over total firms) reported by other national sources in different countries. A number of caveats apply in this case: first, due to

² Note that the EFIGE sample is built in order to be representative for the year 2008, while in this exercise we use the balance sheet data of the same balanced sample of firms to compute averages over time. To the extent that representativeness might vary over time due to entry/exit, our correlations with official statistics might degrade.

the granularity of the export variable, while the propensity to export tends to increase with a firm's size, the relation has a certain variance, and thus, in a survey like EFIGE, it is not granted ex ante that by analysing individual firms, even stratified by size, one is able to pick actual exporters. Second, given the characteristics of the sample (manufacturing firms with more than 10 employees), it is also difficult to match the retrieved extensive margin with a comparable figure in other national sources in a specific year, as information with a similar level of detail on exporters is often not publicly available. For this reason, we have used a number of different, not necessarily official, national sources to compare extensive margins. With these caveats, Table 6 builds a tentative match between the extensive margin reported in the EFIGE survey and the most similar statistics available at the national level, by size class of firms.

Table 6: Extensive margin of export (% of exporting firms)

Country	Firm size class					
	Between 10 and 49		Between 50 and 249		More than 249	
	EFIGE	National source	EFIGE	National source	EFIGE	National source
France *	59.9	66.7	75.0	83.9	87.9	93.5
Germany *	59.4	60.6	77.8	78.6	80.0	90.6
Hungary	61.7	61.6	79.3	85.1	97.4	96.0
Italy	69.9	65.4	86.6	86.5	92.6	96.7
Spain	57.9	45.2	76.2	80.8	88.0	92.2
UK	59.6	39.5	77.1	66.2	81.1	77.6

* > 20 employees to match national sources

National sources (data for Austria not available)

FRANCE : EAE survey > 20 employees, year 2007.

GERMANY: Statistisches Bundesamt: AFID Panel Industrieunternehmen, year 2006.

HUNGARY: APEH, 2008.

ITALY: ICE/ISTAT + EUROSTAT, YEAR 2007

SPAIN: Central de Balances (Annual Survey of Firms) and Balanza de Pagos (Balance of Payments).

UK: "Firm level empirical study of the contribution of exporting to UK productivity growth - {2007}", R. Harris & Q.

Cher Li, 21 May 2010 UKTI;

4. Descriptive statistics

The EFIGE dataset is uniquely placed to explore the correlation patterns between the various international activities of firms (imports, exports, foreign direct investment, international outsourcing) across the countries surveyed. To that extent, the information from the survey allows to classify firms along seven, non-mutually exclusive, internationalisation categories. Firms are considered exporters if they reply "yes, directly from the home country" to a question asking whether the firm has sold abroad some or all of its own products/services in 2008³. Concerning imports, the same procedure is followed, distinguishing materials and service imports.

³ In order to encompass the phenomenon of temporary traders (Bèkès and Murakozy, 2011), we have considered as exporter also a firm replying "regularly/always" or "sometimes" to the question "Before 2008, has the firm exported any of its products?". For importing firms, we combine the following questions: firms replying "yes, from abroad" to "In 2008 has the firm purchased any

With respect to Foreign Direct Investment (FDI) and International Outsourcing (IO), we have exploited a question asking whether firms were running at least part of their production activity in another country: firms replying “yes, through direct investment (ie foreign affiliates/controlled firms)” are considered as undertaking FDI, while firms replying “yes, through contracts and arm’s length agreements with local firms” are considered as pursuing an active international outsourcing strategy⁴. We have then looked at firms involved in international value chains, although not actively pursuing an internationalisation strategy, through a question asking whether part of the firm’s turnover was made up by sales produced according to a specific order coming from a customer (produced-to-order goods): firms replying positively, and indicating that their main customers for the production-to-order activity are other firms located abroad, are considered as pursuing a passive outsourcing strategy. Hence, a passive outsourcer is the counterpart of an active outsourcer in an arm’s length transaction. Finally, thanks to a question that allows identifying the main geographical areas of the exporting activity, we have identified “global exporters”, ie firms that export to countries outside the EU.

Table 7 provides some descriptive statistics for our seven categories of international firms, as well as the residual category of local firms not active abroad. For convenience, the publicly available data have been already supplemented with these and other categorical dummies (see below and the DataMap available as Appendix 1 to this paper on the EFIGE website).

We can identify a clear ranking of firm characteristics with respect to the degree of involvement in international activities, in line with an enriched theory of self-selection of heterogeneous firms into international activities à la Helpman *et al* (2004). In particular, Table 2 shows that internationally active firms tend to be larger, have higher sales and are more capital intensive⁵. The position along the turnover ranking tends to increase with the degree of complexity of international activities, from exporter, to importer of material/active outsourcing, to importer of services and FDI. Local firms involved in international value chains (ie the ‘passive outsourcers’) are somewhat smaller than the average of all internationally active firms, but larger than purely local firms⁶.

materials (services) for its domestic production?” and firms replying “regularly/always” or “sometimes” to “Before 2008, did the firm purchase any materials (services) from abroad?”.

⁴ Note that these firms are attributed to the country in which they are located and thus surveyed, although the ‘nationality’ of the group they possibly belong to may be different.

⁵ As already stated, the fact that internationally active firms are more numerous in our sample with respect to domestic firms derives from the truncation of the sample at 10 employees. A general validation of firms’ characteristics as derived from the sample with respect to official structural business statistics is provided in Section 4.1.

⁶ We do not control here for foreign ownership, that is, whether a given firm is controlled by a foreign entity, while we account for the fact that a given firm controls an affiliate abroad (foreign investment).

Table 7: International categories of firms-Descriptive statistics (full sample), 2008

	N. of firms	Avg. turnover per firm (in 1,000 EUR)	Avg. n. of employees	Avg. Capital stock per employee (in 1,000 EUR)
Non Active abroad	3,402	4,443.33	31.44	152.16
Active abroad	11,357	19,273.46	139.85	196.4
<i>of which</i>				
Exporter	9,849	20,494.21	151.42	199.03
Importer of services	3,449	38,659.98	332.12	223.57
Importer of materials	7,298	24,976.44	191.17	200.36
Global exporter	4,016	24,777.71	103.43	222.93
Passive outsourcer	5,799	17,052.42	83.96	204.98
Active outsourcer	590	24,657.11	119.55	225.28
FDI	719	77,637.20	334.13	239.55
Whole sample	14,759	15,589.29	114.52	186.59

Source: EFIGE dataset.

Table 8 reports the average TFP of firms in the different international activities alongside the other firm characteristics already shown in Table 2, with the sample now limited to those firms for which it is possible to retrieve TFP. As can be seen, the resulting restricted sample does not show any particular bias in terms of representation by category of firms, nor in terms of overall ranking.

Table 8: International categories of firms-Descriptive statistics (restricted sample), 2008

Internationalisation categories	N. of firms	Avg. turnover (in 1,000 EUR)	Avg. n. of employees	Avg. capital stock per employee (in 1,000 EUR)	Total Factor Productivity	Unit labour cost (in EUR per unit of value added)	Labour productivity (value added per employee in 1,000 EUR)
Non Active abroad	1,514	5,298.51	31.67	156.14	0.872	0.77	50.71
Active abroad	5,921	24,623.51	152	200.01	1.024	0.78	57.55
<i>of which</i>							
Exporter	5,201	26,104.12	164.41	203.19	1.033	0.77	58.09
Importer of services	1,900	50,004.76	372.81	230.61	1.159	0.84	61.81
Importer of materials	3,939	31,647.82	208.25	203.31	1.058	0.79	58.43
Global exporter	2,211	28,345.27	104.42	224.77	1.094	0.79	62.56
Passive outsourcer	2,965	20,763.66	84.31	208.06	1.06	0.79	59.86
Active outsourcer	306	32,991.62	127.39	224.94	1.066	0.76	56.03
FDI	387	98,554.23	359.7	238.08	1.293	1.05	63.35
Whole sample	7,435	20,303.82	125.6	190.39	0.991	0.78	56.05

Source: EFIGE dataset. Notes: Numbers are weighted sample averages. More info on productivity measures is available in Altomonte et al. (2012)

5. Internationalisation and firm competitiveness⁷

Thanks to the link between survey and balance sheet data, it is possible to assess the correlation patterns between the degree of involvement in international activities and firm ‘competitiveness’, with the latter measured by total factor productivity (TFP)⁸. Using the Levinsohn and Petrin (2003)⁹ procedure, TFP is computable for around 50% of the firms present in the dataset.

More specifically, following standard practice in the literature, output is proxied in the estimations by value-added, deflated using industry-specific price indices retrieved from Eurostat. The labour input is measured by the number of employees, while capital is proxied by the value of tangible fixed assets deflated using the GDP deflator.

A standard way of showing selection into different internationalisation activities is to draw the kernel density estimates of the productivity distribution for firms involved in each of these activities, and compare it with those of firms that are internationally inactive. A kernel density shows the shares of firms [‘density’] that attain each productivity level, that is, the probability of picking a firm with a certain productivity level when the firm is randomly drawn from each category of activities. The comparisons are depicted in Figure 1 (panels (a) and (b)), where it has to be kept in mind that internationalisation categories are not mutually exclusive as firms can be engaged in more than one international activity at a time (see Table 2 for details), while the category of firms non active abroad is constant across the panels.

Both panels of Figure 1 send the same message: a randomly drawn firm that is active internationally is likely to be more productive than a randomly drawn firm that is inactive internationally.

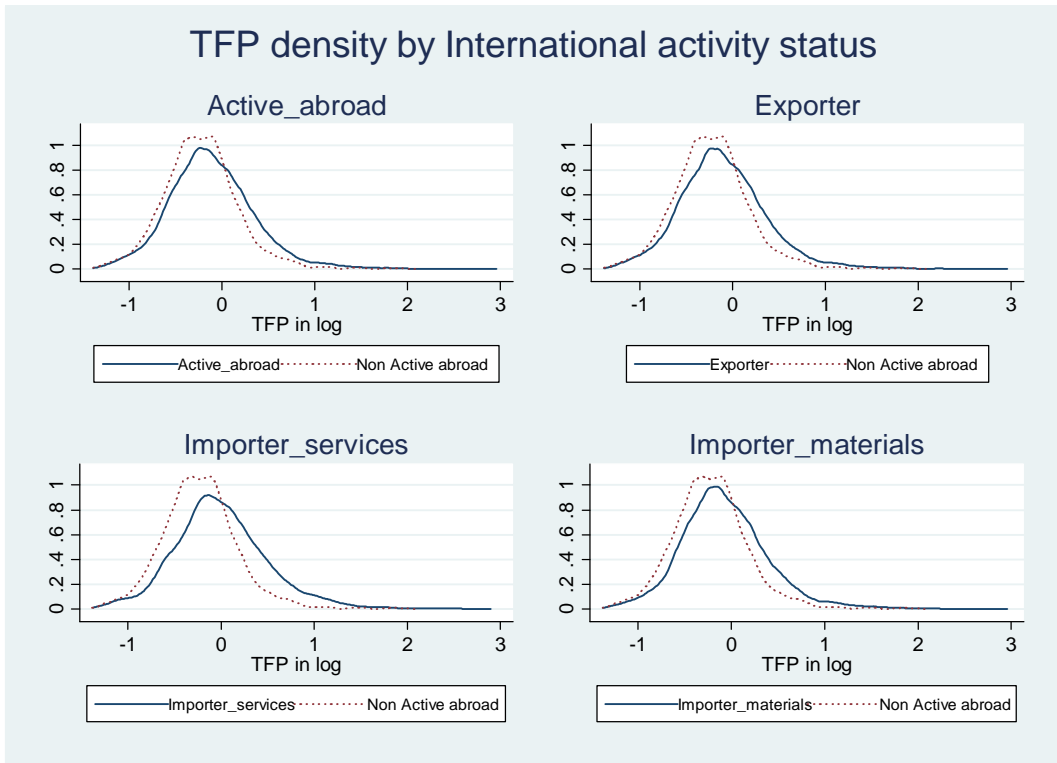
The fact that productivity densities vary across internationalisation categories suggests that the costs associated with international operations might vary across the different activities. To deepen the investigation of this issue, we analyse next how the probability that a firm is active in each international activity is associated with the observed level of productivity. In particular, Figure 2 shows the ‘extensive margin’ (share of active firms over total number of firms) of each internationalisation activity by decile of productivity.

⁷ This session is an extract from the EFIGE cross-country report “The triggers of competitiveness” (Altomonte et al, 2012) freely available on Bruegel’s website. Most of the results of the cross-country report can be replicated with the publicly available EFIGE data. Data on individual firms’ TFP are available on request from Bruegel.

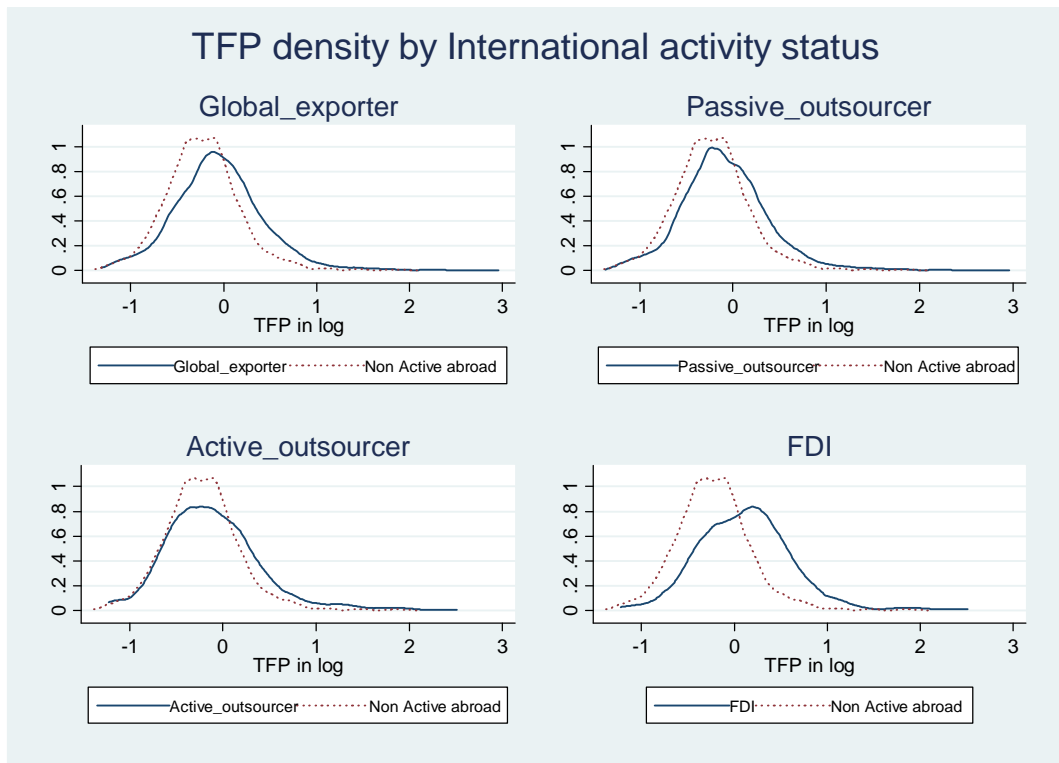
⁸ TFP measures productive efficiency, that is how much output a firm can produce for any given amounts of inputs. In other words, a firm has higher TFP than a competitor if it is able to produce more output with the same amounts of inputs.

⁹ This allows solving the simultaneity bias affecting standard estimates of firm-level productivity, as well as to derive TFP estimates from heterogeneous, industry-specific production functions.

Figure 1: TFP and internationalisation



(a) All internationalisers and traders



(b) Offshorers and outsourcers

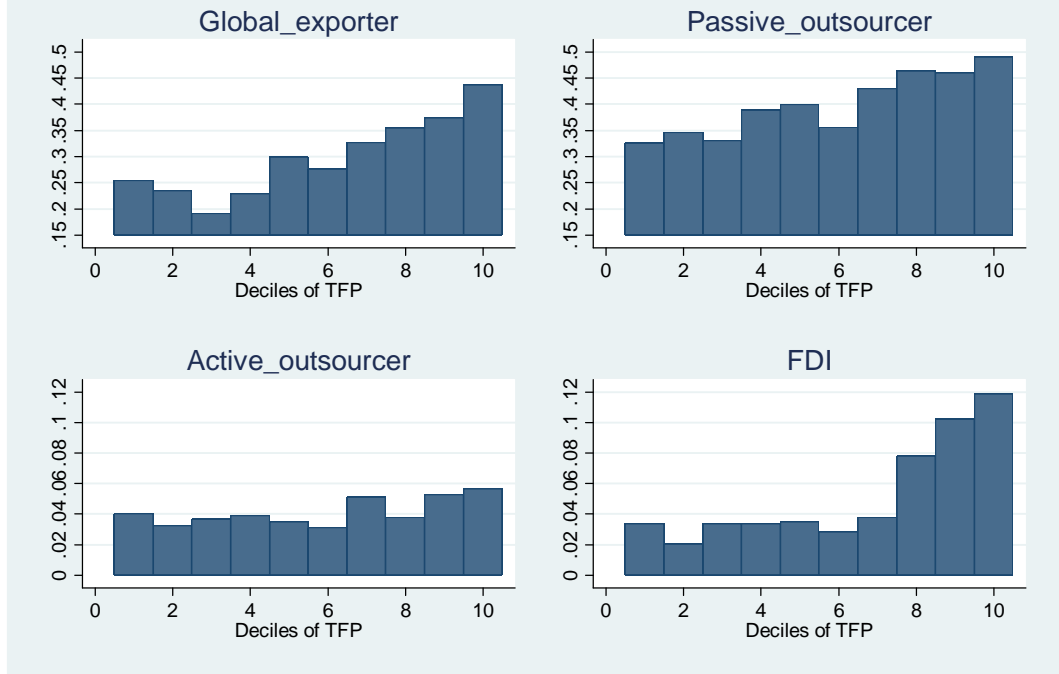
Figure 2: TFP and internationalisation

Share of firms active in each international activity by level of TFP



(a) All internationalisers and traders

Share of firms active in each international activity by level of TFP



(b) Offshorers and outsourcers

One important thing to notice in Figure 2 is the overall upward slope of the histograms when moving from left to right, that is from low to high productivity deciles. In line with the literature, the latter indicates that the higher the productivity deciles, the more likely it is for firms to be involved in some international activity. In other words, more productive firms self-select into internationalisation status.

Also focusing on the top deciles (10), that is on the most productive 10 per cent of all firms, the top right graph in panel (a) of Figure 2 reveals that among the firms in that deciles slightly more than 90 per cent are internationally active one way or another. Nonetheless, the categories of internationalisation activities differ a lot in terms of popularity: slightly less than 85 per cent of firms are exporters; two thirds of them are importers of materials; almost 50 per cent of firms are importers of services or passive outsourcers; just below 45 per cent of firms are global exporters; less than 15 per cent are involved in FDI; and just above 5 per cent are active outsourcers.

A clear ranking of internationalisation activities from low selectivity (exporting) to high selectivity (FDI / active outsourcing) is thus identified: firms with stronger competitiveness have access to a larger number of more complex options when it comes to designing their international operations.

6. Use of data

6.1. Introduction

The EU-EFIGE/Bruegel-UniCredit dataset is a unique firm-level database of representative samples of manufacturing firms (with a lower threshold of 10 employees) across European countries. The questionnaire covers six different broad fields, for a total of some 150 variables organised in more than 450 different sub-items, for each one of the 14,759 firms. The total dimension of the questionnaire is around 30GB, for more than 7,200,000 data points.

These data are presented in the form of an Excel spreadsheet, where each sheet is numbered from A to F and contains variables related to the following fields:

- A - Structure of the firms (company ownership, domestic and foreign control, management);
- B - Workforce (skills, type of contracts, domestic vs. migrant workers, training);
- C - Investment, technological innovation, R&D (and related financing);
- D - Export and internationalisation processes;
- E - Market structure and competition;
- F - Financial structure and bank-firm relationship.

Each column within each sheet is an individual variable. The column heading reports the label of the variable (eg b3), with the first letter indicating the field (B – Workforce), while the number indicates the question as in the original questionnaire (question 3 in section B refers to the number of employees). Possible additional codes following the number relate to additional sub-items in which the variable has been split.

In order to understand exactly what each variable (column) refers to, it is important to download both the original questionnaire through which data have been collected and, most importantly, the Datamap available as Appendix 1 to this paper and describing, for each label, the nature of the variable, the question it refers to, the range of variables it can take, as well as some additional explanatory notes. Both documents are available on the EFIGE website.

Also, note that some questions (eg those on internationalisation) implied the coding of country codes. Those codes are all listed in Appendix 2 to this paper (also available on the EFIGE website).

For queries not dealt within the above documents you can write at: efige@bruegel.org

6.1. Censoring

The publicly available EFIGE data have been anonymised according to standard practices in the field. In particular, the standard practice for census data in terms of anonymisation is to avoid having only one observation present in each cell in which the sample can be stratified, with the ideal case being three observations at least. In the case of EFIGE, we have to consider that we are not dealing with census but rather with survey data, ie a cell can contain a single observation corresponding to a firm, but clearly that might not necessarily be the case in the universe of firms. For example, in EFIGE there is only one observation of a firm with more than 500 employees operating in the textile industry in France, but clearly the latter does not imply that there is only one such a firm in the universe of French firms, thus with no breach of anonymity.

The problem however would arise if, starting from the information available in the original dataset, the sample could be stratified in such a way (eg considering for a given firm its detailed industry code, region, size, year of establishment, etc) that there would be only one firm with given characteristics in the resulting cell even in census data, thus with a breach of anonymity.

As a result, we have proceeded in anonymising publicly available data as follows:

- censoring of employment at 500 employees: firms originally reporting a number of employees equal or larger than 500 have been kept in the sample, but with an employment size capped at 500 employees.

- a randomised regional and industry identifier: the original dataset contains information on the location of the firm (based on the original NUTS1 or NUTS2 classification of EUROSTAT within each country), as well as the main industry in which the firm is active (classified in 11 industries according to the NACE-Clio categories), as these variables have been used for the stratification of the sample (see Section 2). To preserve anonymity while at the same time allowing for regional and industry variation in the data, we have included region and industry dummies in the data. That is, a given firm in a country can be active in an ‘industry 2’ in ‘region 3’, but it is not possible to know what ‘industry 2’ or ‘region 3’ actually correspond to¹⁰. On the contrary, it is possible (and actually recommended) to use region and industry fixed-effects in the analysis. To allow however for a minimum identification of the sectors of activity of firms, we have reported the Pavitt technological class (Economy of Scale, Traditional, High Tech, Specialised) to which firms belong to, based on the NACE code of activity of the firms at 3 digits¹¹.
- a categorical variable for the year of establishment (<6 years; 6-20 years; >20 years), so as to identify Young Innovative Companies;
- a categorical variable for turnover (see question A3 in the Datamap available as Appendix 1 to this paper on the EFIGE website)

The following table summarises the extent to which censoring firms’ size at 500 employee affects data by country.

Table 9: Censoring Criteria

Country	N firms	of which > 500 empl	Mean employment (unrestricted)	Mean employment (censored 500)	% of censored firms > 500
AUT	443	18	93.6	63.1	4.1%
FRA	2973	78	79.0	55.6	2.6%
GER	2935	104	74.9	60.3	3.5%
HUN	488	11	71.9	62.5	2.3%
ITA	3021	59	42.4	38.2	2.0%
SPA	2832	47	48.9	41.7	1.7%
UK	2067	41	113.7	58.8	2.0%
Total	14759	358	67.0	50.5	2.4%

¹⁰ The same ranking of the resulting dummy variables has been randomized, ie they do not map any particular ordering of the original data.

¹¹ As the original 11 NACE_Clio codes might map into different NACE 3-digits codes on which the Pavitt classification is based, some firms pertaining to the same (randomized) industry dummy variable might actually belong to different Pavitt classes. Hence, the two industry classifications should be used independently.

Note that the censoring on size set at >500 employees does not significantly affect the overall representativeness of the sample (at least as far as extensive margins are concerned), as the original stratification has been designed over three size classes (10-49, 50-249, more than 249 employees) in which the largest class is a larger set with respect to our censored data (250 vs. 500 employees).

6.2. From sample to representative data

As recalled, the EFIGE survey slightly oversamples large firms to ensure representativeness of the latter critical (for competitiveness) category of firm. A weighting scheme has thus been set up to retrieve the sample's representativeness starting from simple within-sample averages. Two types of weights (relative and absolute weights) have been constructed. More specifically, the sample has been split into 33 cells, by 11 NACE_CLIO industries and the three size classes on which the stratification has been carried out. For each country, the relative weight (*rel_weight*) for firms in industry k and size class s is built as follows:

$$rw_{ks} = \frac{P_{firms_{ks}}/P_{firms}}{S_{firms_{ks}}/S_{firms}}$$

Where $P_{firms_{ks}}$ is the number of firms in industry k and size class s for the population in a given country; $S_{firms_{ks}}$ is the number of firms in industry k and size class s in the EFIGE sample; P_{firms} and S_{firms} are the total number of firms in the population and sample respectively. The sum of weights over the firms is equal to the total number of firms in the sample by country.

Absolute weight (*abs_weight*) for the firms in industry k and size class s is instead built as:

$$aw_{ks} = \frac{P_{firms_{ks}}/P_{firms}}{S_{firms_{ks}}/S_{firms}} \left(\frac{P_{firms}}{S_{firms}} \right)$$

In this case, the sum of these weights over the firms is equal to the total number of firms in the reference population by country. Firms belonging to the same sector/size cell share the same weight. Data about the original firm distribution by size/industry have been retrieved from Eurostat – Structural Business Statistics (year 2007).

An example (using STATA) clarifies on how to best use weights. Suppose one wants to calculate the representative average firm size (number of workers) in the publicly available (censored) EFIGE data, as in Table 7 above. As already discussed, the relevant variable in the dataset is $b3$ (see DataMap available as Appendix 1 of this paper).

- The unweighted statistics is obtained by typing in STATA `tabstat b3= 65.1`

- The weighted statistics is obtained by typing `tabstat b3 [aweight=abs_weight]= 50.5`
- The weighted country specific average (column 5 of Table 7 above) is obtained by typing in the available data `table country [aweight=abs_weight], c(mean b3)`

6.3. Additional variables

For convenience and in order to ensure comparability across EFIGE users, the original DataMap as well as the EFIGE dataset has been integrated with additional dummy variables (constructed from the original survey data) summarising the different characteristics of firms (internationalisation status, innovation, workforce, organisation, finance, etc.). These variables are described at the end of the DataMap file and reported for each firm in the sheet labelled “CC variables” in the EFIGE data file. The variables are tested in the EFIGE Cross-Country Report (Altomonte *et al*, 2012), freely available on Bruegel’s [website](#).

Additional information for academic research purposes (eg individual firms’ productivity data or information on additional variables contained in the dataset but not publicly released for confidentiality reason, or non-randomised classification by industry or regions) has to be requested, together with an outline of the envisaged research project, at efige@bruegel.org.

Bruegel reserves the right of granting access to these data pending the necessary verifications on confidentiality and potential conflict of interests. However, please be aware that Bruegel cannot directly release information on the balance sheet data of firms linked with EFIGE (as these are derived from the Amadeus dataset of Bureau van Dijk), nor, under any circumstance, information on the identity of individual firms.

7. References

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Appendix 1: DataMap

VARIABLE LABEL	VARIABLE TYPE	QUESTION / DESCRIPTION	VALUES	NOTES
MARK	SINGLE	Individual firm random identification code	40 to 14911	
COUNTRY	SINGLE	Country of incorporation	1 "Austria" 2 "Germany" 3 "France" 4 "Hungary" 5 "Italy" 6 "Spain" 7 "UK"	
REGION	SINGLE	Regions (NUTS1 or NUTS2)	Varying by country	Randomized regional identifier for every country
SECTOR	SINGLE	Industries (aggregates from NACE_Clio)	1 to 11	Randomized industry identifier for every country. Note that weights have been calculated on the basis of this classification
PAVITT	SINGLE	Pavitt classification on the basis of original NACE code of firm (3-digits)	"Traditional" - "High Tech" - "Specialized" - "Economies of Scale"	See Pavitt (1989)
A1	QUANTITY	Year of establishment	< 6 years; 6-20 years; >20 years	Young Innovative Companies: < 6 years
A2A	SINGLE	Which is the core business/product of your firm?	998 "Specify" 999 "DK/DA"	Verbatim (N/A to public)
A2B	QUANTITY	And which percentage of the 2008 turnover does it represent?	Percentage: 1 to 100 999 "DK/DA"	
A3	SINGLE	In which of the following ranges falls the annual turnover in 2008 of your firm?	1 "less than 1 million euro" 2 "1-2 million euro" 3 "2-10 million euro" 4 "10-15 million euro" 5 "15-50 million euro" 6 "50-250 million euro" 7 "more than 250 million euro" 8 "DK/DA"	
A6	SINGLE	Did you experience a reduction of your turnover during 2009 in comparison with 2008?	1 "Yes, a reduction up to 10%" 2 "Yes, a reduction between 10-30%" 3 "Yes, a reduction of more than 30%" 4 "No" 5 "DK/DA"	ALL "Do not Know / Does not Answer" responses HAVE BEEN CODED AS 999999999
A8	SINGLE	Does your firm belong to a group?	1 "Yes, National" 2 "Yes, Foreign" 3 "No"	AAA question (minimum required response rate 90%)
A12	SINGLE	And your firm is ...	1 "head of the group" 2 "both controlled and controlling" 3 "controlled by another firm of the group" 4 "DK/DA"	
A13	SINGLE	Has the firm acquired (totally or partially) or incorporated other firms in the last three years (2007-2009)?	1 "Yes, national firms" 2 "Yes, foreign firms" 3 "Both" 4 "No" 5 "DK/DA"	
A14	SINGLE	Has the firm been acquired or incorporated by other firms over the same period (2007-2009)?	1 "Yes, national firms" 2 "Yes, foreign firms" 3 "Both" 4 "No" 5 "DK/DA"	
A15	SINGLE	Has the firm any affiliates, i.e. firms of which you own a share of at least 10%?	1 "Yes, national ones" 2 "Yes, foreign ones" 3 "Both" 4 "No" 5 "DK/DA"	
A15A	QUANTITY	How many foreign affiliates does your firm have?	Number of affiliates: 1 to 999 000 "DK/DA"	

A16_1	QUANTITY	First shareholder: share of capital	Percentage: 0 to 100 999 "DK/DA"	
A18_1	SINGLE	First shareholder: type	1 "Individual/Group of individuals" 2 "Industrial firm" 3 "Holding firm" 4 "Bank or insurance company" 5 "Other independent financial corporation not included in the group (private equity and venture capital)" 6 "Public entity" 7 "Other (Specify)" 8 "DK/DA"	
A19_1	SINGLE	First shareholder: nationality	1 "Domestic" 2 "Foreign" 3 "DK/DA"	
A16_2	QUANTITY	Second shareholder: share of capital	Percentage: 0 to 100 999 "DK/DA"	
A18_2	SINGLE	Second shareholder: type	1 "Individual/Group of individuals" 2 "Industrial firm" 3 "Holding firm" 4 "Bank or insurance company" 5 "Other independent financial corporation not included in the group (private equity and venture capital)" 6 "Public entity" 7 "Other (Specify)" 8 "DK/DA"	
A19_2	SINGLE	Second shareholder: nationality	1 "Domestic" 2 "Foreign" 3 "DK/DA"	
A16_3	QUANTITY	Third shareholder: share of capital	Percentage: 0 to 100 999 "DK/DA"	
A18_3	SINGLE	Third shareholder: type	1 "Individual/Group of individuals" 2 "Industrial firm" 3 "Holding firm" 4 "Bank or insurance company" 5 "Other independent financial corporation not included in the group (private equity and venture capital)" 6 "Public entity" 7 "Other (Specify)" 8 "DK/DA"	
A19_3	SINGLE	Third shareholder: nationality	1 "Domestic" 2 "Foreign" 3 "DK/DA"	
A16_4	QUANTITY	Share of capital of other shareholders	Percentage: 0 to 100 999 "DK/DA"	To fill in if the sum of shares of capital of the three main shareholders is less than 100%
A20	SINGLE	Is your firm directly or indirectly controlled by an individual or family-owned entity?	1 "Yes" 2 "No" 3 "DK/DA"	
A21	SINGLE	Is the chief executive officer (CEO)/ Company Head of your firm...?	1 "the individual who owns or controls the firm or a member of the family that owns /controls it" 2 "a manager recruited from outside the firm" 3 "a manager appointed within the firm" 4 "other"	AAA
A23	SINGLE	With reference to strategic decisions which of the following statements better describe your firm situation? Decisions in your firm are ...	1 "centralised: the CEO/owner takes most decisions in every area" 2 "decentralised: managers can take autonomous decisions in some business areas"	AAA
A23A	SINGLE	During 2009, has strategic decision making become...	1 "more centralised" 2 "more decentralised" 3 "nothing changed" 4 "DK/DA"	
A25_m_c1		Executives/managers rewards: financial benefits	1 "Yes" 0 "No"	A25 is a multiple choice concerning Codes 1 and

A25	A25_m_c2	MULTIPLE	Executives/managers rewards: non- financial benefits	1 "Yes" 0 "No"	A25 is a multiple choice concerning codes 1 and 2. Code 3 is a single choice. Assign a single column for each answer code.
	A25_m_c3		Executives/managers rewards: no rewards	1 "Yes" 0 "No"	
A28	QUANTITY	On average, in a normal year, what percentage of the annual individual gross salary represents the bonus based on individual performance?	Percentage: 1 to 100 999 "DK/DA"		
B3	QUANTITY	Please indicate the total number of employees of your firm in your home country in 2008.	1 to 99999 000000 "DK/DA"		
B4_1_1	QUANTITY	Entrepreneurs/executives (included middle management) who are not related to the family who owns the company - Percentage	Percentage: 0 to 100 999 "DK/DA"		
B4_2_1	QUANTITY	Entrepreneurs/executives (included middle management) who are not related to the family who owns the company - Absolute	Absolute: 0 to 999999 000000 "DK/DA"		
B4_1_2	QUANTITY	Entrepreneurs/Executives (included middle management) who are related to the family who owns the company - Percentage	Percentage: 0 to 100 999 "DK/DA"		
B4_2_2	QUANTITY	Entrepreneurs/Executives (included middle management) who are related to the family who owns the company - Absolute	Absolute: 0 to 999999 000000 "DK/DA"		
B4_1_3	QUANTITY	White collars - Percentage	Percentage: 0 to 100 999 "DK/DA"		
B4_2_3	QUANTITY	White collars - Absolute	Absolute: 0 to 999999 000000 "DK/DA"		
B4_1_4	QUANTITY	Skilled blue collars - Percentage	Percentage: 0 to 100 999 "DK/DA"		
B4_2_4	QUANTITY	Skilled blue collars - Absolute	Absolute: 0 to 999999 000000 "DK/DA"		
B4_1_5	QUANTITY	Unskilled blue collars and apprentices - Percentage	Percentage: 0 to 100 999 "DK/DA"		
B4_2_5	QUANTITY	Unskilled blue collars and apprentices - Absolute	Absolute: 0 to 999999 000000 "DK/DA"		
B5_1	QUANTITY	In 2008 what percentage/number of employees have been involved in R&D activities? - Percentage	0 to 100		AAA
B5_2	QUANTITY	In 2008 what percentage/number of employees have been involved in R&D activities? - Absolute	0 to 999999		AAA
B6_1	QUANTITY	What is the percentage/number of university graduates in your workforce in your home country? - Percentage	0 to 100		AAA
B6_2	QUANTITY	What is the percentage/number of university graduates in your workforce in your home country? - Absolute	0 to 999999		AAA
B7_1	QUANTITY	What is the percentage/number of foreign (both EU and Non-EU citizens) employees in your workforce in your home country? - Percentage	0 to 100		AAA
B7_2	QUANTITY	What is the percentage/number of foreign (both EU and Non-EU citizens) employees in your workforce in your home country? - Absolute	0 to 999999		AAA
B9_1	QUANTITY	What is the percentage/number of foreign employee (both EU and Non-EU citizens) amongst your executives (included middle management)? - Percentage	Percentage: 0 to 100 999 "DK/DA"		
B9_2	QUANTITY	What is the percentage/number of foreign employee (both EU and Non-EU citizens) amongst your executives (included middle management)? - Absolute	Absolute: 0 to 999999 000000 "DK/DA"		
B18	QUANTITY	In 2008 which percentage of employees have worked for the firm with a fixed-term contract?	Percentage: 0 to 100 999 "DK/DA"		
B17	QUANTITY	In 2008 which percentage of employees have worked for the firm on a part-time basis?	Percentage: 0 to 100 999 "DK/DA"		

B10	SINGLE	Age of current CEO/Company Head	1 "Less than 25" 2 "25-34 y.o." 3 "35-44 y.o." 4 "45-54 y.o." 5 "55-64 y.o." 6 "65-74 y.o." 7 "75 or over" 8 "DK/DA"		
B11	SINGLE	Gender of current CEO/Company Head	1 "Male" 2 "Female" 3 "DK/DA"		
B12	SINGLE	Has any of your executives worked abroad for at least 1 year?	1 "Yes" 2 "No" 3 "DK/DA"		
B22	QUANTITY	In 2008 what percentage of employees have participated to formal training programs?	Percentage: 0 to 100 999 "DK/DA"		
B23	SINGLE	Were the training courses mainly ...?	1 "in-house" 2 "outside the firm" 3 "DK/DA"		
PREB21	SINGLE	During the last year did you experienced a reduction or an increase of your workforce in comparison with 2008?	1 "yes, a reduction of ..." 2 "yes, an increase of ..." 3 "no, we did not experience any change"	AAA	
B21RID	QUANTITY	Experienced reduction	Percentage: 1 to 100	AAA	
B21AUM	QUANTITY	Experienced increase	Percentage: 1 to 100	AAA	
B21A	SINGLE	And this reduction was mainly on a temporary or on a permanent basis?	1 "on a temporary basis" 2 "on a permanent basis" 3 "DK/DA"		
B21B	SINGLE	And this reduction which of the following job categories mainly involved?	1 "blue collars employees" 2 "white collars employees" 3 "executives" 4 "DK/DA"		
B21C	SINGLE	And this increase was mainly on a temporary or on a permanent basis?	1 "on a temporary basis" 2 "on a permanent basis" 3 "DK/DA"		
B21D	SINGLE	And this increase which of the following job categories mainly involved?	1 "blue collars employees" 2 "white collars employees" 3 "executives" 4 "DK/DA"		
C2	SINGLE	Has the firm access to a broadband connection (high-speed transmission of digital content)?	1 "Yes" 2 "No" 3 "DK/DA"		
C4	C4_m_c1	MULTIPLE	IT systems/solutions for internal information management (e.g. SAP / CMS)	1 "Yes" 0 "No"	C4 is a multiple choice concerning Codes 1, 2 and 3. Code 4 is a single choice. Assign a single column for each answer code.
	C4_m_c2		IT systems/solutions for E-commerce (online purchasing / online sales)	1 "Yes" 0 "No"	
	C4_m_c3		IT systems/solutions for management of the sales/purchase network (suppliers' orders, customer service)	1 "Yes" 0 "No"	
	C4_m_c4		The firm does not have an access to an Internet connection	1 "Yes" 0 "No"	
C5	QUANTITY	What percentage of the annual turnover do the overall investments in plants, machines, equipment and ICT represent on average in the last three years (2007-2009)?	Percentage: 0 to 100	AAA	
C10_1	QUANTITY	How were these investments in plants, machines, equipment and ICT financed on average in the last three years (2007-2009)? - Self-financing (use of internal sources)	Percentage: 0 to 100 999 "DK/DA"		
C10_2	QUANTITY	How were these investments in plants, machines, equipment and ICT financed on average in the last three years (2007-2009)? - Intra-group financing	Percentage: 0 to 100 999 "DK/DA"		

C10_3	QUANTITY	How were these investments in plants, machines, equipment and ICT financed on average in the last three years (2007-2009)? - Venture capital	Percentage: 0 to 100 999 "DK/DA"	
C10_4	QUANTITY	How were these investments in plants, machines, equipment and ICT financed on average in the last three years (2007-2009)? - Bank credit (short/long)	Percentage: 0 to 100 999 "DK/DA"	
C10_5	QUANTITY	How were these investments in plants, machines, equipment and ICT financed on average in the last three years (2007-2009)? - Public funding	Percentage: 0 to 100 999 "DK/DA"	
C10_6	QUANTITY	How were these investments in plants, machines, equipment and ICT financed on average in the last three years (2007-2009)? - Leasing and factoring	Percentage: 0 to 100 999 "DK/DA"	
C10_7	QUANTITY	How were these investments in plants, machines, equipment and ICT financed on average in the last three years (2007-2009)? - Other	Percentage: 0 to 100 999 "DK/DA"	
C13	SINGLE	During 2009 has the firm benefitted from special tax allowances and/or financial incentives supporting its investments?	1 "Yes" 2 "No" 3 "DK/DA"	
C13A	SINGLE	During 2009 has your firm reduced its planned investments in machinery, equipment or ICT?	1 "Yes" 2 "No" 3 "DK/DA"	
C13APERC	QUANTITY	Reduction in planned investments in machinery, equipment or ICT	Percentage: 1 to 100 999 "DK/DA"	
C14	C14_m_c1	MULTIPLE	On average in the last three years (2007-2009), did the firm carry out any product innovation?	AAA C14 is a multiple choice concerning Codes 1 and 2. Code 3 is a single choice. Assign a single column for each answer code.
	C14_m_c2		On average in the last three years (2007-2009), did the firm carry out any process innovation?	
	C14_m_c3		In the last three years (2007-2009) the firm didn't carry out any process/process innovation.	
C14A	SINGLE	Did this product/process innovation also prompt any organisational innovation?	1 "Yes" 2 "No" 3 "DK/DA"	
C15	QUANTITY	Indicate the average percentage of turnover from innovative products sales on average in the last three years (2007-2009)	Percentage: 0 to 100 999 "DK/DA"	
C16	SINGLE	Are the corresponding products innovative also with respect to the market?	1 "Yes" 2 "No" 3 "DK/DA"	
C17	C17_m_c1	MULTIPLE	In the last three years (2007-2009) the firm applied for a patent	Assign a single column for each answer code.
	C17_m_c2		In the last three years (2007-2009) the firm registered an industrial design	
	C17_m_c3		In the last three years (2007-2009) the firm registered a trade mark	
	C17_m_c4		In the last three years (2007-2009) the firm claimed copyright	
C18	C18_m_c1	MULTIPLE	The firm sold the rights to use any patent, industrial design, trademark or copyright in the same period: in home country	C18 is a multiple choice concerning Codes 1, 2 and 3. Code 4 is a single choice. Assign a single column for each answer code.
	C18_m_c2		The firm sold the rights to use any patent, industrial design, trademark or copyright in the same period: in foreign EU countries	
	C18_m_c3		The firm sold the rights to use any patent, industrial design, trademark or copyright in the same period: in foreign non-EU countries	
	C18_m_c4		The firm didn't sell any rights to use any patent, industrial design, trademark or copyright in the same period	
C20	C20_m_c1	MULTIPLE	In the last three years (2007-2009), the firm has undertaken R&D activities carried out in-house	C20 is a multiple choice concerning Codes 1, 2 and 3. Code 4 is a single choice.
	C20_m_c2		In the last three years (2007-2009), the firm has undertaken R&D activities acquired from another firm in the Group	

	C20_m_c3		In the last three years (2007-2009), the firm has undertaken R&D activities acquired from external sources	1 "Yes" 0 "No"	Assign a single column for each answer code.
	C20_m_c4		In the last three years (2007-2009), the firm hasn't undertaken R&D activities	1 "Yes" 0 "No"	
	C21	QUANTITY	Which percentage of the total turnover has the firm invested in R&D on average in the last three years (2007-2009)?	Percentage: 1 to 100	AAA
	C22_1	QUANTITY	If we assume that the total R&D investments equals to 100% which percentage on average in the last three years (2007-2009) has been carried out in-house?	Percentage: 0 to 100 999 "DK/DA"	
	C22_2	QUANTITY	If we assume that the total R&D investments equals to 100% which percentage on average in the last three years (2007-2009) has been acquired from another firm in the group in the home country?	Percentage: 0 to 100 999 "DK/DA"	
	C22_3	QUANTITY	If we assume that the total R&D investments equals to 100% which percentage on average in the last three years (2007-2009) has been acquired from another firm in the group abroad?	Percentage: 0 to 100 999 "DK/DA"	
	C22_4	QUANTITY	If we assume that the total R&D investments equals to 100% which percentage on average in the last three years (2007-2009) has been acquired from external sources in the home country?	Percentage: 0 to 100 999 "DK/DA"	
	C22_5	QUANTITY	If we assume that the total R&D investments equals to 100% which percentage on average in the last three years (2007-2009) has been acquired from external sources abroad?	Percentage: 0 to 100 999 "DK/DA"	
	C23_1	QUANTITY	If we assume that the R&D acquired from external sources equals to 100% which percentage has been supplied by Universities and R&D centres?	Percentage: 0 to 100 999 "DK/DA"	
	C23_2	QUANTITY	If we assume that the R&D acquired from external sources equals to 100% which percentage has been supplied by other firms / consultants?	Percentage: 0 to 100 999 "DK/DA"	
	C24	SINGLE	Were the R&D activities carried out in the period financed in the same way as the investments in plants, machines, equipment and ICT?	1 "Yes" 2 "No" 3 "DK/DA"	
	C24A_1	QUANTITY	How have R&D activities been financed on average in the last three years (2007-2009)? - Self-financing (use of internal sources)	Percentage: 0 to 100 999 "DK/DA"	
	C24A_2	QUANTITY	How have R&D activities been financed on average in the last three years (2007-2009)? - Intra-group financing	Percentage: 0 to 100 999 "DK/DA"	
	C24A_3	QUANTITY	How have R&D activities been financed on average in the last three years (2007-2009)? - Venture capital	Percentage: 0 to 100 999 "DK/DA"	
	C24A_4	QUANTITY	How have R&D activities been financed on average in the last three years (2007-2009)? - Bank credit (short/long)	Percentage: 0 to 100 999 "DK/DA"	
	C24A_5	QUANTITY	How have R&D activities been financed on average in the last three years (2007-2009)? - Public funding	Percentage: 0 to 100 999 "DK/DA"	
	C24A_6	QUANTITY	How have R&D activities been financed on average in the last three years (2007-2009)? - Leasing and factoring	Percentage: 0 to 100 999 "DK/DA"	
	C24A_7	QUANTITY	How have R&D activities been financed on average in the last three years (2007-2009)? - Other	Percentage: 0 to 100 999 "DK/DA"	
	C27	SINGLE	Did the firm benefit from tax allowances and financial incentives for these R&D activities?	1 "Yes" 2 "No" 3 "DK/DA"	
C28	C28_msf_1	MULTIPLE	Which are in your opinion the main factors that hamper innovation? - Mentioned reason 1		
	C28_msf_2	MULTIPLE	Which are in your opinion the main factors that hamper innovation? - Mentioned reason 2		
	C28_msf_3	MULTIPLE	Which are in your opinion the main factors that hamper innovation? - Mentioned reason 3		
	C28_msf_4	MULTIPLE	Which are in your opinion the main factors that hamper innovation? - Mentioned reason 4		
	C28_msf_5	MULTIPLE	Which are in your opinion the main factors that hamper innovation? - Mentioned reason 5		

	C28_msf_6	MULTIPLE	Which are in your opinion the main factors that hamper innovation? - Mentioned reason 6		
	C28_msf_7	MULTIPLE	Which are in your opinion the main factors that hamper innovation? - Mentioned reason 7		
	C28_msf_8	MULTIPLE	Which are in your opinion the main factors that hamper innovation? - Mentioned reason 8		
	C28_msf_9	MULTIPLE	Which are in your opinion the main factors that hamper innovation? - Mentioned reason 9		
	C28_msf_10	MULTIPLE	Which are in your opinion the main factors that hamper innovation? - Mentioned reason 10		
	C29	SINGLE	During 2009, has your firm decided to postpone investments in product or process innovation?	1 "Yes" 2 "No" 3 "DK/DA"	
D1	D1_m_c1	MULTIPLE	Has the firm sold abroad some or all of its own products/services in 2008? - Yes directly from home country	1 "Yes" 0 "No"	D1 is a multiple choice concerning Codes 1, 2 and 3. Code 4 is a single choice. Assign a single column for each answer code.
	D1_m_c2		Has the firm sold abroad some or all of its own products/services in 2008? - Yes directly from third countries where the firm produces (through affiliates or contracts and arms length agreements)	1 "Yes" 0 "No"	
	D1_m_c3		Has the firm sold abroad some or all of its own products/services in 2008? - Yes through an intermediary based in home country	1 "Yes" 0 "No"	
	D1_m_c4		Has the firm sold abroad some or all of its own products/services in 2008? - No	1 "Yes" 0 "No"	
D4	QUANTITY	Which percentage of your 2008 annual turnover did the export activities represent?	Percentage: 1 to 100	AAA	
D5	SINGLE	Before 2008, has the firm exported any of its products?	1 "Regularly/Always" 2 "Sometimes" 3 "Never" 4 "DK/DA"		
D6	QUANTITY	Indicate to how many countries in total the firm exported its products in 2008?	Quantity: 1 to 999 000 "DK/DA"		
D13_1	QUANTITY	If we assume that the total export activities equal to 100 which percentage goes to 15 UE countries	Percentage: 0 to 100 999 "DK/DA"		
D13_2	QUANTITY	If we assume that the total export activities equal to 100 which percentage goes to Other UE countries	Percentage: 0 to 100 999 "DK/DA"		
D13_3	QUANTITY	If we assume that the total export activities equal to 100 which percentage goes to Other European countries not UE	Percentage: 0 to 100 999 "DK/DA"		
D13_4	QUANTITY	If we assume that the total export activities equal to 100 which percentage goes China and India	Percentage: 0 to 100 999 "DK/DA"		
D13_5	QUANTITY	If we assume that the total export activities equal to 100 which percentage goes to Other Asian countries (excluded China and India)	Percentage: 0 to 100 999 "DK/DA"		
D13_6	QUANTITY	If we assume that the total export activities equal to 100 which percentage goes to USA and Canada	Percentage: 0 to 100 999 "DK/DA"		
D13_7	QUANTITY	If we assume that the total export activities equal to 100 which percentage goes to Central and South America	Percentage: 0 to 100 999 "DK/DA"		
D13_8	QUANTITY	If we assume that the total export activities equal to 100 which percentage goes to other countries	Percentage: 0 to 100 999 "DK/DA"		
D7_1	SINGLE	Export activities - Destination 1	Use "Country codes MP.xls"	AAA	
D7_2	SINGLE	Export activities - Destination 2	Use "Country codes MP.xls"		
D7_3	SINGLE	Export activities - Destination 3	Use "Country codes MP.xls"		
	D7_RIC_m_c1		Export destination Area - 15 UE countries area	1 "Yes" 0 "No"	
	D7_RIC_m_c2		Export destination Area - Other UE countries	1 "Yes" 0 "No"	
	D7_RIC_m_c3		Export destination Area - Other European countries not UE (Switzerland, Norway, Russia, Turkey, Byelorussia, Ukraine, ...)	1 "Yes" 0 "No"	

D7_RIC	D7_RIC_m_c4	MULTIPLE	Export destination Area - China and India	1 "Yes" 0 "No"	Each destination in D7 has to be associated to its AREA. Country codes are reported in Annex 2
	D7_RIC_m_c5		Export destination Area - Other Asian countries (excluded China and India)	1 "Yes" 0 "No"	
	D7_RIC_m_c6		Export destination Area - USA and Canada	1 "Yes" 0 "No"	
	D7_RIC_m_c7		Export destination Area - Central and South America	1 "Yes" 0 "No"	
	D7_RIC_m_c8		Export destination Area - Other areas	1 "Yes" 0 "No"	
D9_1	SINGLE	Destination 1 - N. of product lines exported	1 "1" 2 "2-5" 3 "6-10" 4 "more than 10" 5 "DK/DA"		
D10_1	SINGLE	Destination 1 - Activity started before 2004	1 "Yes" 2 "No" 3 "DK/DA"		
D11_1	QUANTITY	Destination 1 - Percentage of total export	Percentage: 1 to 100	AAA	
D12_1	SINGLE	Destination 1 - intermediary based in the home country	1 "Yes" 2 "No" 3 "DK/DA"		
D9_2	SINGLE	Destination 2 - N. of product lines exported	1 "1" 2 "2-5" 3 "6-10" 4 "more than 10" 5 "DK/DA"		
D10_2	SINGLE	Destination 2 - Activity started before 2004	1 "Yes" 2 "No" 3 "DK/DA"		
D11_2	QUANTITY	Destination 2 - Percentage of total export	Percentage: 1 to 100	AAA	
D12_2	SINGLE	Destination 2 - intermediary based in the home country	1 "Yes" 2 "No" 3 "DK/DA"		
D9_3	SINGLE	Destination 3 - N. of product lines exported	1 "1" 2 "2-5" 3 "6-10" 4 "more than 10" 5 "DK/DA"		
D10_3	SINGLE	Destination 3 - Activity started before 2004	1 "Yes" 2 "No" 3 "DK/DA"		
D11_3	QUANTITY	Destination 3 - Percentage of total export	Percentage: 1 to 100	AAA	
D12_3	SINGLE	Destination 3 - intermediary based in the home country	1 "Yes" 2 "No" 3 "DK/DA"		
D9A_PRE	SINGLE	Export outside the UE countries - Register country	Use "Country codes MP.xls"		
D9A	SINGLE	Export outside the UE countries - N. of product lines exported	1 "1" 2 "2-5" 3 "6-10" 4 "more than 10" 5 "DK/DA"		
D10A	SINGLE	Export outside the UE countries - Activity started before 2004	1 "Yes" 2 "No" 3 "DK/DA"		
D11A	QUANTITY	Export outside the UE countries - Percentage of total export	Percentage: 1 to 100	AAA	
D12A	SINGLE	Export outside the UE countries - Intermediary based in the home country	1 "Yes" 2 "No" 3 "DK/DA"		

D16	SINGLE	The main product line you sell to foreign markets ...	1 " is also the main product line in your domestic market " 2 " is also sold in your domestic market but it is not the main product line" 3 " is not sold in your domestic market " 4 "DK/DA"		
D20	SINGLE	Has your firm benefited/purchased a trade/export insurance coverage?	1 "Yes" 2 "No" 3 "DK/DA"		
D20A	SINGLE	Has a significant share of your exports been financed by export credit?	1 "Yes" 2 "No" 3 "DK/DA"		
D19	SINGLE	Has your firm benefited from any kind of tax allowances and financial incentives on export?	1 "Yes" 2 "No" 3 "DK/DA"		
PRED17	SINGLE	During 2009, did you experience a reduction or an increase in terms of value of your export activities in comparison with 2008?	1 "yes, a reduction of ..." 2 "yes, an increase of ..." 3 "no, we did not experience any change"	AAA	
D17RID	QUANTITY	Experienced reduction	Percentage: 1 to 100	AAA	
D17AUM	QUANTITY	Experienced increase	Percentage: 1 to 100	AAA	
D17A	MULTIPLE	D17A_m_c1	Reduction - 15 UE countries area	1 "Yes" 0 "No"	
		D17A_m_c2	Reduction - Other UE countries	1 "Yes" 0 "No"	
		D17A_m_c3	Reduction - Other European countries not UE (Switzerland, Norway, Russia, Turkey, Byelorussia, Ukraine, ...)	1 "Yes" 0 "No"	
		D17A_m_c4	Reduction - China and India	1 "Yes" 0 "No"	
		D17A_m_c5	Reduction - Other Asian countries (excluded China and India)	1 "Yes" 0 "No"	
		D17A_m_c6	Reduction - USA and Canada	1 "Yes" 0 "No"	
		D17A_m_c7	Reduction - Central and South America	1 "Yes" 0 "No"	
		D17A_m_c8	Reduction - Other areas	1 "Yes" 0 "No"	
D17B	MULTIPLE	D17b_m_c1	Increase - 15 UE countries area	1 "Yes" 0 "No"	
		D17b_m_c2	Increase - Other UE countries	1 "Yes" 0 "No"	
		D17b_m_c3	Increase - Other European countries not UE (Switzerland, Norway, Russia, Turkey, Byelorussia, Ukraine, ...)	1 "Yes" 0 "No"	
		D17b_m_c4	Increase - China and India	1 "Yes" 0 "No"	
		D17b_m_c5	Increase - Other Asian countries (excluded China and India)	1 "Yes" 0 "No"	
		D17b_m_c6	Increase - USA and Canada	1 "Yes" 0 "No"	
		D17b_m_c7	Increase - Central and South America	1 "Yes" 0 "No"	
		D17b_m_c8	Increase - Other areas	1 "Yes" 0 "No"	
D23	MULTIPLE	D23_m_c1	In 2008 has the firm purchased any services for its domestic production? - Yes, in home country	1 "Yes" 0 "No"	A25 is a multiple choice concerning Codes 1 and 2. Code 3 is a single choice. Assign a single column for each answer code.
		D23_m_c2	In 2008 has the firm purchased any services for its domestic production? - Yes, from abroad	1 "Yes" 0 "No"	
		D23_m_c3	In 2008 has the firm purchased any services for its domestic production? - No	1 "Yes" 0 "No"	
D23C	QUANTITY	What percentage of the 2008 annual turnover did the total purchased services (from anywhere) represent?	Percentage: 1 to 100	AAA	

D26	QUANTITY	What percentage of the total purchased services (from anywhere) did the services purchased FROM ABROAD represent?	Percentage: 1 to 100	AAA	
D27	SINGLE	Before 2008, did the firm purchase any services from abroad?	1 "Regularly/Always" 2 "Sometimes" 3 "Never" 4 "DK/DA"		
D28	D28_m_c1	MULTIPLE	Purchased services from - 15 UE countries area	1 "Yes" 0 "No"	
	D28_m_c2		Purchased services from - Other UE countries	1 "Yes" 0 "No"	
	D28_m_c3		Purchased services from - Other European countries not UE (Switzerland, Norway, Russia, Turkey, Byelorussia, Ukraine, ...)	1 "Yes" 0 "No"	
	D28_m_c4		Purchased services from - China and India	1 "Yes" 0 "No"	
	D28_m_c5		Purchased services from - Other Asian countries (excluded China and India)	1 "Yes" 0 "No"	
	D28_m_c6		Purchased services from - USA and Canada	1 "Yes" 0 "No"	
	D28_m_c7		Purchased services from - Central and South America	1 "Yes" 0 "No"	
	D28_m_c8		Purchased services from - Other areas	1 "Yes" 0 "No"	
D29	D29_m_c1	MULTIPLE	Purchased services - Transport Logistic and Insurance Services	1 "Yes" 0 "No"	Assign a single column for each answer code.
	D29_m_c2		Purchased services - Communications and IT services	1 "Yes" 0 "No"	
	D29_m_c3		Purchased services - Financial services	1 "Yes" 0 "No"	
	D29_m_c4		Purchased services - R&D and Engineering services	1 "Yes" 0 "No"	
	D29_m_c5		Purchased services - Other services (e.g. consultants)	1 "Yes" 0 "No"	
D30A	D30A_m_c1	MULTIPLE	In 2008 has the firm purchased raw material or any intermediate goods for its domestic production? - Yes, in home country	1 "Yes" 0 "No"	A25 is a multiple choice concerning Codes 1 and 2. Code 3 is a single choice. Assign a single column for each answer code.
	D30A_m_c2		In 2008 has the firm purchased raw material or any intermediate goods for its domestic production? - Yes, from abroad	1 "Yes" 0 "No"	
	D30A_m_c3		In 2008 has the firm purchased raw material or any intermediate goods for its domestic production? - No	1 "Yes" 0 "No"	
D30D	QUANTITY	What percentage of the 2008 annual turnover did the total purchased intermediate goods (from anywhere) represent?	Percentage: 1 to 100	AAA	
D32	QUANTITY	What percentage of the total purchased intermediate goods (from anywhere) did the intermediate goods purchased FROM ABROAD represent?	Percentage: 1 to 100	AAA	
D33	SINGLE	Before 2008, has the firm purchased any intermediate goods from abroad?	1 "Regularly/Always" 2 "Sometimes" 3 "Never" 4 "DK/DA"		
D34	D34_m_c1	MULTIPLE	Purchased intermediate goods - 15 UE countries area	1 "Yes" 0 "No"	
	D34_m_c2		Purchased intermediate goods - Other UE countries	1 "Yes" 0 "No"	
	D34_m_c3		Purchased intermediate goods - Other European countries not UE (Switzerland, Norway, Russia, Turkey, Byelorussia, Ukraine, ...)	1 "Yes" 0 "No"	
	D34_m_c4		Purchased intermediate goods - China and India	1 "Yes" 0 "No"	

	D34_m_c5		Purchased intermediate goods - Other Asian countries (excluded China and India)	1 "Yes" 0 "No"	
	D34_m_c6		Purchased intermediate goods - USA and Canada	1 "Yes" 0 "No"	
	D34_m_c7		Purchased intermediate goods - Central and South America	1 "Yes" 0 "No"	
	D34_m_c8		Purchased intermediate goods - Other areas	1 "Yes" 0 "No"	
D36	D36_m_c1	MULTIPLE	Purchased intermediate goods - Raw materials	1 "Yes" 0 "No"	
	D36_m_c2		Purchased intermediate goods - Standardized intermediates	1 "Yes" 0 "No"	
	D36_m_c3		Purchased intermediate goods - Customized intermediates	1 "Yes" 0 "No"	
D36A		SINGLE	During 2009, did you experience a reduction in terms of value of inputs purchased from abroad in comparison with 2008?	1 "yes, a reduction of ..." 2 "No" 3 "DK/DA"	
D36APERC		QUANTITY	Percentage of reduction	Percentage: 1 to 100 999 "DK/DA"	
D37	D37_m_c1	MULTIPLE	Does the firm currently run at least part of its production activity in another country? - Yes, direct investments	1 "Yes" 0 "No"	
	D37_m_c2		Does the firm currently run at least part of its production activity in another country? - Yes, contracts and arms length agreements* with local firms	1 "Yes" 0 "No"	
	D37_m_c3		Does the firm currently run at least part of its production activity in another country? - No	1 "Yes" 0 "No"	
D38		QUANTITY	Which percentage of 2008 turnover did the production activities through direct investment (foreign affiliates/controlled firms) represent?	Percentage: 1 to 100	AAA
D39_1		QUANTITY	Direct investments - 15 UE countries area	Percentage: 0 to 100 999 "DK/DA"	
D39_2		QUANTITY	Direct investments - Other UE countries	Percentage: 0 to 100 999 "DK/DA"	
D39_3		QUANTITY	Direct investments - Other European countries not UE (Switzerland, Norway, Russia, Turkey, Byelorussia, Ukraine, ...)	Percentage: 0 to 100 999 "DK/DA"	
D39_4		QUANTITY	Direct investments - China and India	Percentage: 0 to 100 999 "DK/DA"	
D39_5		QUANTITY	Direct investments - Other Asian countries (excluded China and India)	Percentage: 0 to 100 999 "DK/DA"	
D39_6		QUANTITY	Direct investments - USA and Canada	Percentage: 0 to 100 999 "DK/DA"	
D39_7		QUANTITY	Direct investments - Central and South America	Percentage: 0 to 100 999 "DK/DA"	
D39_8		QUANTITY	Direct investments - Other areas	Percentage: 0 to 100 999 "DK/DA"	
D48	D48_m_c1	MULTIPLE	Destination of production activity - sold in the foreign country where the production facility is located	1 "Yes" 0 "No"	AAA Assign a single column for each answer code.
	D48_m_c2		Destination of production activity -- imported into your firms home country for use in production	1 "Yes" 0 "No"	
	D48_m_c3		Destination of production activity - imported into your firm's home country to be directly sold in the domestic market	1 "Yes" 0 "No"	
	D48_m_c4		Destination of production activity -- imported into your firms' home own country to be re-exported to third countries	1 "Yes" 0 "No"	
	D48_m_c5		Destination of production activity -- sold directly in third countries where the firm does not produce	1 "Yes" 0 "No"	
	D48_m_c6		Destination of production activity -- sold directly in third countries where where other production facilities are located	1 "Yes" 0 "No"	
D46_m_c1			Type of production - Finished products	1 "Yes" 0 "No"	

D46	D46_m_c2	MULTIPLE	Type of production - Semi-finished products/ components	1 "Yes" 0 "No"	Assign a single column for each answer code.
	D46_m_c3		Type of production - R&D, engineering and design services	1 "Yes" 0 "No"	
	D46_m_c4		Type of production - Other	1 "Yes" 0 "No"	
D46A		SINGLE	During 2009 has your firm experienced a reduction in the total turnover coming from production activities abroad? If yes, please specify in which countries.	1 "Yes" 2 "No" 3 "DK/DA"	
D46A_SPE	D46A_SPE_msf_1	MULTIPLE	Reduction in total turnover - Specify Country 1	Country codes are reported in Annex 2	
	D46A_SPE_msf_2	MULTIPLE	Reduction in total turnover - Specify Country 2	Country codes are reported in Annex 2	
	D46A_SPE_msf_3	MULTIPLE	Reduction in total turnover - Specify Country 3	Country codes are reported in Annex 2	
	D46A_SPE_msf_4	MULTIPLE	Reduction in total turnover - Specify Country 4	Country codes are reported in Annex 2	
	D46A_SPE_msf_5	MULTIPLE	Reduction in total turnover - Specify Country 5	Country codes are reported in Annex 2	
	D46A_SPE_msf_6	MULTIPLE	Reduction in total turnover - Specify Country 6	Country codes are reported in Annex 2	
	D46A_SPE_msf_7	MULTIPLE	Reduction in total turnover - Specify Country 7	Country codes are reported in Annex 2	
	D46A_SPE_msf_8	MULTIPLE	Reduction in total turnover - Specify Country 8	Country codes are reported in Annex 2	
	D46A_SPE_msf_9	MULTIPLE	Reduction in total turnover - Specify Country 9	Country codes are reported in Annex 2	
	D46A_SPE_msf_10	MULTIPLE	Reduction in total turnover - Specify Country 10	Country codes are reported in Annex 2	
	D46A_SPE_msf_11	MULTIPLE	Reduction in total turnover - Specify Country 11	Country codes are reported in Annex 2	
	D46A_SPE_msf_12	MULTIPLE	Reduction in total turnover - Specify Country 12	Country codes are reported in Annex 2	
	D46A_SPE_msf_13	MULTIPLE	Reduction in total turnover - Specify Country 13	Country codes are reported in Annex 2	
	D46A_SPE_msf_14	MULTIPLE	Reduction in total turnover - Specify Country 14	Country codes are reported in Annex 2	
	D46A_SPE_msf_15	MULTIPLE	Reduction in total turnover - Specify Country 15	Country codes are reported in Annex 2	
	D46A_SPE_msf_16	MULTIPLE	Reduction in total turnover - Specify Country 16	Country codes are reported in Annex 2	
	D46A_SPE_msf_17	MULTIPLE	Reduction in total turnover - Specify Country 17	Country codes are reported in Annex 2	
	D46A_SPE_msf_18	MULTIPLE	Reduction in total turnover - Specify Country 18	Country codes are reported in Annex 2	
	D46A_SPE_msf_19	MULTIPLE	Reduction in total turnover - Specify Country 19	Country codes are reported in Annex 2	
	D46A_SPE_msf_20	MULTIPLE	Reduction in total turnover - Specify Country 20	Country codes are reported in Annex 2	
D46B		SINGLE	During 2009 has your firm closed any production unit abroad? ? If yes, please specify in which countries.	1 "Yes" 2 "No" 3 "DK/DA"	
D46B_SPE	D46B_SPE_msf_1	MULTIPLE	Close of production unit - Specify Country 1	Country codes are reported in Annex 2	
	D46B_SPE_msf_2	MULTIPLE	Close of production unit - Specify Country 2	Country codes are reported in Annex 2	
	D46B_SPE_msf_3	MULTIPLE	Close of production unit - Specify Country 3	Country codes are reported in Annex 2	
	D46B_SPE_msf_4	MULTIPLE	Close of production unit - Specify Country 4	Country codes are reported in Annex 2	
	D46B_SPE_msf_5	MULTIPLE	Close of production unit - Specify Country 5	Country codes are reported in Annex 2	
	D46B_SPE_msf_6	MULTIPLE	Close of production unit - Specify Country 6	Country codes are reported in Annex 2	
	D46B_SPE_msf_7	MULTIPLE	Close of production unit - Specify Country 7	Country codes are reported in Annex 2	
	D46B_SPE_msf_8	MULTIPLE	Close of production unit - Specify Country 8	Country codes are reported in Annex 2	
	D46B_SPE_msf_9	MULTIPLE	Close of production unit - Specify Country 9	Country codes are reported in Annex 2	
	D46B_SPE_msf_10	MULTIPLE	Close of production unit - Specify Country 10	Country codes are reported in Annex 2	
	D46B_SPE_msf_11	MULTIPLE	Close of production unit - Specify Country 11	Country codes are reported in Annex 2	
	D46B_SPE_msf_12	MULTIPLE	Close of production unit - Specify Country 12	Country codes are reported in Annex 2	
	D46B_SPE_msf_13	MULTIPLE	Close of production unit - Specify Country 13	Country codes are reported in Annex 2	
	D46B_SPE_msf_14	MULTIPLE	Close of production unit - Specify Country 14	Country codes are reported in Annex 2	

	D46B_SPE_msf_15	MULTIPLE	Close of production unit - Specify Country 15	Country codes are reported in Annex 2	
	D46B_SPE_msf_16	MULTIPLE	Close of production unit - Specify Country 16	Country codes are reported in Annex 2	
	D46B_SPE_msf_17	MULTIPLE	Close of production unit - Specify Country 17	Country codes are reported in Annex 2	
	D46B_SPE_msf_18	MULTIPLE	Close of production unit - Specify Country 18	Country codes are reported in Annex 2	
	D46B_SPE_msf_19	MULTIPLE	Close of production unit - Specify Country 19	Country codes are reported in Annex 2	
	D46B_SPE_msf_20	MULTIPLE	Close of production unit - Specify Country 20	Country codes are reported in Annex 2	
D49		QUANTITY	Which percentage of 2008 turnover did the production activities through contracts and agreements represent?	Percentage: 1 to 100	AAA
D50_1		QUANTITY	Production activities carried out abroad through contracts and arms length agreements with local firms - 15 UE countries area	Percentage: 0 to 100 999 "DK/DA"	
D50_2		QUANTITY	Production activities carried out abroad through contracts and arms length agreements with local firms - Other UE countries	Percentage: 0 to 100 999 "DK/DA"	
D50_3		QUANTITY	Production activities carried out abroad through contracts and arms length agreements with local firms - Other European countries not UE (Switzerland, Norway, Russia, Turkey, Byelorussia, Ukraine, ...)	Percentage: 0 to 100 999 "DK/DA"	
D50_4		QUANTITY	Production activities carried out abroad through contracts and arms length agreements with local firms - China and India	Percentage: 0 to 100 999 "DK/DA"	
D50_5		QUANTITY	Production activities carried out abroad through contracts and arms length agreements with local firms - Other Asian countries (excluded China and India)	Percentage: 0 to 100 999 "DK/DA"	
D50_6		QUANTITY	Production activities carried out abroad through contracts and arms length agreements with local firms - USA and Canada	Percentage: 0 to 100 999 "DK/DA"	
D50_7		QUANTITY	Production activities carried out abroad through contracts and arms length agreements with local firms - Central and South America	Percentage: 0 to 100 999 "DK/DA"	
D50_8		QUANTITY	Production activities carried out abroad through contracts and arms length agreements with local firms - Other areas	Percentage: 0 to 100 999 "DK/DA"	
D53_1		SINGLE	Contracts and arms length agreements with local firms before 2004 - 15 UE countries area	1 "Yes" 2 "No" 3 "DK/DA"	
D53_2		SINGLE	Contracts and arms length agreements with local firms before 2004 - Other UE countries	1 "Yes" 2 "No" 3 "DK/DA"	
D53_3		SINGLE	Contracts and arms length agreements with local firms before 2004 - Other European countries not UE (Switzerland, Norway, Russia, Turkey, Byelorussia, Ukraine, ...)	1 "Yes" 2 "No" 3 "DK/DA"	
D53_4		SINGLE	Contracts and arms length agreements with local firms before 2004 - China and India	1 "Yes" 2 "No" 3 "DK/DA"	
D53_5		SINGLE	Contracts and arms length agreements with local firms before 2004 - Other Asian countries (excluded China and India)	1 "Yes" 2 "No" 3 "DK/DA"	
D53_6		SINGLE	Contracts and arms length agreements with local firms before 2004 - USA and Canada	1 "Yes" 2 "No" 3 "DK/DA"	
D53_7		SINGLE	Contracts and arms length agreements with local firms before 2004 - Central and South America	1 "Yes" 2 "No" 3 "DK/DA"	

D53_8		SINGLE	Contracts and arms length agreements with local firms before 2004 - Other areas	1 "Yes" 2 "No" 3 "DK/DA"	
D56	D56_m_c1	MULTIPLE	Destination of production activity - sold in the foreign country where the production facility is located	1 "Yes" 0 "No"	AAA Assign a single column for each answer code.
	D56_m_c2		Destination of production activity -- imported into your firms home country for use in production	1 "Yes" 0 "No"	
	D56_m_c3		Destination of production activity - imported into your firm's home country to be directly sold in the domestic market	1 "Yes" 0 "No"	
	D56_m_c4		Destination of production activity -- imported into your firms' home own country to be re-exported to third countries	1 "Yes" 0 "No"	
	D56_m_c5		Destination of production activity -- sold directly in third countries where the firm does not produce	1 "Yes" 0 "No"	
	D56_m_c6		Destination of production activity -- sold directly in third countries where other production facilities are located	1 "Yes" 0 "No"	
D55	D55_m_c1	MULTIPLE	Type of production - Finished products	1 "Yes" 0 "No"	
	D55_m_c2		Type of production - Semi-finished products/ components	1 "Yes" 0 "No"	
	D55_m_c3		Type of production - R&D, engineering and design services	1 "Yes" 0 "No"	
	D55_m_c4		Type of production - Other	1 "Yes" 0 "No"	
D57		SINGLE	Has the firm received assistance from public or private Institutions for its internationalisation activities?	1 "Yes, mainly from national institutions (either based in the home country or elsewhere)" 2 "Yes, mainly from foreign institutions(either based in the destination country or elsewhere)" 3 "No" 4 "DK/DA"	
D67		SINGLE	During 2009 has the firm experienced a reduction in the total turnover coming from production activities run through contracts and arms length agreements in comparison with 2008?	1 "Yes" 2 "No" 3 "DK/DA"	
D67_SPE	D67_SPE_msf_1	MULTIPLE	Reduction in the total turnover - Specify Country 1	Country codes are reported in Annex 2	
	D67_SPE_msf_2	MULTIPLE	Reduction in the total turnover - Specify Country 2	Country codes are reported in Annex 2	
	D67_SPE_msf_3	MULTIPLE	Reduction in the total turnover - Specify Country 3	Country codes are reported in Annex 2	
	D67_SPE_msf_4	MULTIPLE	Reduction in the total turnover - Specify Country 4	Country codes are reported in Annex 2	
	D67_SPE_msf_5	MULTIPLE	Reduction in the total turnover - Specify Country 5	Country codes are reported in Annex 2	
	D67_SPE_msf_6	MULTIPLE	Reduction in the total turnover - Specify Country 6	Country codes are reported in Annex 2	
	D67_SPE_msf_7	MULTIPLE	Reduction in the total turnover - Specify Country 7	Country codes are reported in Annex 2	
	D67_SPE_msf_8	MULTIPLE	Reduction in the total turnover - Specify Country 8	Country codes are reported in Annex 2	
	D67_SPE_msf_9	MULTIPLE	Reduction in the total turnover - Specify Country 9	Country codes are reported in Annex 2	
	D67_SPE_msf_10	MULTIPLE	Reduction in the total turnover - Specify Country 10	Country codes are reported in Annex 2	
	D67_SPE_msf_11	MULTIPLE	Reduction in the total turnover - Specify Country 11	Country codes are reported in Annex 2	
	D67_SPE_msf_12	MULTIPLE	Reduction in the total turnover - Specify Country 12	Country codes are reported in Annex 2	
	D67_SPE_msf_13	MULTIPLE	Reduction in the total turnover - Specify Country 13	Country codes are reported in Annex 2	
	D67_SPE_msf_14	MULTIPLE	Reduction in the total turnover - Specify Country 14	Country codes are reported in Annex 2	
	D67_SPE_msf_15	MULTIPLE	Reduction in the total turnover - Specify Country 15	Country codes are reported in Annex 2	
	D67_SPE_msf_16	MULTIPLE	Reduction in the total turnover - Specify Country 16	Country codes are reported in Annex 2	
	D67_SPE_msf_17	MULTIPLE	Reduction in the total turnover - Specify Country 17	Country codes are reported in Annex 2	
	D67_SPE_msf_18	MULTIPLE	Reduction in the total turnover - Specify Country 18	Country codes are reported in Annex 2	
	D67_SPE_msf_19	MULTIPLE	Reduction in the total turnover - Specify Country 19	Country codes are reported in Annex 2	
	D67_SPE_msf_20	MULTIPLE	Reduction in the total turnover - Specify Country 20	Country codes are reported in Annex 2	
F0		SINGLE	Did your firm recur to external financing in the period 2008-2009? By external financing we mean funds not generated internally (not self financing)	1 "Yes" 2 "No" 3 "DK/DA"	
F1_1		QUANTITY	- Short term bank debt	Percentage: 0 to 100	AAA
F1_2		QUANTITY	- Medium to long term bank debt	Percentage: 0 to 100	AAA
F1_3		QUANTITY	- Short-term securities	Percentage: 0 to 100	AAA
F1_4		QUANTITY	- Medium and long-term securities	Percentage: 0 to 100	AAA
F1_5		QUANTITY	- Other financial instruments	Percentage: 0 to 100	AAA

F3	SINGLE	In the industry your firm works, how dependant are companies on external financing?	1 "1 = not dependent at all" 2 "2" 3 "3" 4 "4" 5 "5 = extremely dependent" 6 "DK/DA"		
F4	SINGLE	Has the firm increased the total amount of external financing (i.e. access to financial funds not generated internally) during the last year?	1 "Yes" 2 "No" 3 "DK/DA"		
F5	SINGLE	What is the main purpose of the use of external finance?	1 " Increase production scale through investments " 2 " Participation or share in other firms related with the main business activity " 3 " Participation or share in other firms not directly related with the main business activity " 4 " Working capital/liquidity needs " 5 " Optimizing financial structure (i.e. debt /equity ratio)" 6 "Other" 7 "DK/DA"		
F6	F6_m_c1	MULTIPLE	Financial intruments - Equity	1 "Yes" 0 "No"	AAA
	F6_m_c2		Financial intruments - Venture capital and private equity	1 "Yes" 0 "No"	AAA
	F6_m_c3		Financial intruments - Short-term bank credit	1 "Yes" 0 "No"	AAA
	F6_m_c4		Financial intruments - Medium or long term bank credit	1 "Yes" 0 "No"	AAA
	F6_m_c5		Financial intruments - Securities	1 "Yes" 0 "No"	AAA
	F6_m_c6		Financial intruments - Public funds	1 "Yes" 0 "No"	AAA
	F6_m_c7		Financial intruments - Tax incentives	1 "Yes" 0 "No"	AAA
	F6_m_c8		Financial intruments - Leasing or factoring	1 "Yes" 0 "No"	AAA
	F6_m_c9		Financial intruments - Other financing methods	2 "Yes" 0 "No"	AAA
F7	SINGLE	. During the last year did your firm use any kind of derivatives products (e.g. forward operations, futures, swaps) for external financing needs or treasury management or foreign exchange risk protection?	1 "Yes" 2 "No" 3 "DK/DA"		
MASK_F8	MULTIPLE		Blank		
F8A	F8A_m_c1	MULTIPLE	Domestic activities - Domestic local banks	1 "Yes" 0 "No"	Assign a single column for each answer code.
	F8A_m_c2		Domestic activities -Domestic national banks	1 "Yes" 0 "No"	
	F8A_m_c3		Domestic activities -Foreign banks	1 "Yes" 0 "No"	
F8B	F8B_m_c1	MULTIPLE	Foreign activities -Domestic local banks	1 "Yes" 0 "No"	Assign a single column for each answer code.
F8B	F8B_m_c2		Foreign activities - Domestic national banks	1 "Yes" 0 "No"	
F8B	F8B_m_c3		Foreign activities - Foreign banks	1 "Yes" 0 "No"	
F9	QUANTITY	Number of banks	Quantity: 1 to 99 00 "DK/DA"		
F10	QUANTITY	What % of your firm's total bank debit is held at your main bank?	Percentage: 1 to 100	AAA	
F11	QUANTITY	For how many years has this bank been the firm's main bank?	Quantity: 1 to 99 00 "DK/DA"		
F12_m_c1		The bank offers competitive services and funding	1 "Yes" 0 "No"		

F12	F12_m_c2	MULTIPLE	The bank offers efficient internet services	1 "Yes" 0 "No"	
	F12_m_c3		The bank's lending criteria is clear and transparent	1 "Yes" 0 "No"	
	F12_m_c4		The bank is conveniently located	1 "Yes" 0 "No"	
	F12_m_c5		The bank has an extensive international network	1 "Yes" 0 "No"	
	F12_m_c6		The bank offers also a consultancy on strategic financial decisions	1 "Yes" 0 "No"	
	F12_m_c7		The bank has a long-lasting relationship with the firm	1 "Yes" 0 "No"	
	F12_m_c8		The bank has flexible procedures/not constrained by red tape	1 "Yes" 0 "No"	
	F12_m_c9		It was the group's main bank	1 "Yes" 0 "No"	
	F12_m_c10		Other	1 "Yes" 0 "No"	
F13	SINGLE	During the last year, was the firm willing to increase its borrowing at the same interest	1 "Yes" 2 "No" 3 "DK/DA"		
F14	SINGLE	During the last year, did the firm apply for more credit?	1 "Yes applied for it and was successful" 2 " Yes, applied for it but was not successful" 3 " No, did not apply for it " 4 "DK/DA"		
F15	SINGLE	To increase its borrowing, would the firm have been prepared to pay a higher rate of interest?	1 "Yes" 2 "No" 3 "DK/DA"		
F16	F16_m_c1	MULTIPLE	Information required - Collateral	1 "Yes" 0 "No"	
	F16_m_c2	MULTIPLE	Information required - Balance sheet information	1 "Yes" 0 "No"	
	F16_m_c3	MULTIPLE	Information required - Interviews with management on firm's policy and prospects	1 "Yes" 0 "No"	
	F16_m_c4	MULTIPLE	Information required - Business plan and firms' targets	1 "Yes" 0 "No"	
	F16_m_c5	MULTIPLE	Information required - Historical records of payments and debt service	1 "Yes" 0 "No"	
	F16_m_c6	MULTIPLE	Information required - Brand recognition	1 "Yes" 0 "No"	
	F16_m_c7	MULTIPLE	Information required - Other	1 "Yes" 0 "No"	
F17	F17_m_c1	MULTIPLE	Personal guarantees from the person who manages or owns the firm	1 "Yes" 0 "No"	
	F17_m_c2		Guarantees on assets belonging to the firm	1 "Yes" 0 "No"	
	F17_m_c3		Guarantees on assets of the Group the firm belongs to	1 "Yes" 0 "No"	
	F17_m_c4		Third party collateral (i.e. by a consortium, ...)	1 "Yes" 0 "No"	
	F17_m_c5		Other collaterals	1 "Yes" 0 "No"	
F18	SINGLE	With reference to the last year has your firm experienced an increase of the cost of debt charged?	1 "Yes" 2 "No" 3 "DK/DA"		
F23	SINGLE	During the last year did the firm benefit from financial incentives provided by the public sector?	1 "Yes" 2 "No" 3 "DK/DA"		
F24_1	QUANTITY	Please indicate the distribution of the financial incentives received in percentage terms between ... European	Percentage: 0 to 100 999 "DK/DA"		
F24_2	QUANTITY	Please indicate the distribution of the financial incentives received in percentage terms between ... National	Percentage: 0 to 100 999 "DK/DA"		

F25	SINGLE	In the same period, did the firm benefit from tax incentives?	1 "Yes" 2 "No" 3 "DK/DA"		
F26_1	QUANTITY	Please indicate the distribution of the total tax incentives received in percentage terms between ... European	Percentage: 0 to 100 999 "DK/DA"		
F26_2	QUANTITY	Please indicate the distribution of the total tax incentives received in percentage terms between ... National	Percentage: 0 to 100 999 "DK/DA"		
TEMPO_SEZ_F	QUANTITY	The time Section D ends	0 to 999999		
DURA_SEZ_F	QUANTITY	Duration of Section D	0 to 999999		
E1	QUANTITY	Can you please indicate which percentage (on average) of your firm's turnover was made up by sales of produced-to-order goods	Percentage: 0 to 100	AAA	
E2	E2_m_c1	MULTIPLE	Clients - Intra-group	1 "Yes" 0 "No"	Assign a single column for each answer code.
	E2_m_c2		Clients - Other firms, in the same region.	1 "Yes" 0 "No"	
	E2_m_c3		Clients - Other firms, in the rest of the country	1 "Yes" 0 "No"	
	E2_m_c4		Clients - Other firms, abroad	1 "Yes" 0 "No"	
	E2_m_c5		Clients - Public administration	1 "Yes" 0 "No"	
	E2_m_c6		Clients - Private customers	1 "Yes" 0 "No"	
E3	E3_m_c1	MULTIPLE	Competitors - In your home country	1 "Yes" 0 "No"	Code 9 is a single choice Assign a single column for each answer code.
	E3_m_c2		Competitors - In other UE countries	1 "Yes" 0 "No"	
	E3_m_c3		Competitors - In other European countries not members of the UE (Switzerland, Norway, Russia, Turkey ...)	1 "Yes" 0 "No"	
	E3_m_c4		Competitors - China and India	1 "Yes" 0 "No"	
	E3_m_c5		Competitors - Other Asian countries (excluding China and India)	1 "Yes" 0 "No"	
	E3_m_c6		Competitors - USA and Canada	1 "Yes" 0 "No"	
	E3_m_c7		Competitors - Centre and South America	1 "Yes" 0 "No"	
	E3_m_c8		Competitors - Other areas	1 "Yes" 0 "No"	
	E3_m_c9		We haven't any competitor	1 "Yes" 0 "No"	
E5	SINGLE	Compared to your competitors, do you think that your firm's scale of production is adequate?	1 "Yes" 2 "No" 3 "DK/DA"		
E6	E6_m_c1	MULTIPLE	Factors preventing growth - Financial constraints	1 "Yes" 0 "No"	Code 7 is a single choice Assign a single column for each answer code.
	E6_m_c2		Factors preventing growth - Labour market regulations	1 "Yes" 0 "No"	
	E6_m_c3		Factors preventing growth - Legislative or bureaucratic restrictions	1 "Yes" 0 "No"	
	E6_m_c4		Factors preventing growth - Lack of management and/or organisational resources	1 "Yes" 0 "No"	
	E6_m_c5		Factors preventing growth - Lack of demand	1 "Yes" 0 "No"	
	E6_m_c6		Factors preventing growth - Other	1 "Yes" 0 "No"	
	E6_m_c7		None	1 "Yes" 0 "No"	
E7_m_c1		Success of your firm is based on: Lowering production costs	1 "Yes" 0 "No"		

E7	E7_m_c2	MULTIPLE	Improving product quality	1 "Yes" 0 "No"	
	E7_m_c3		Broadening the range of products	1 "Yes" 0 "No"	
	E7_m_c4		Increasing brand recognition	1 "Yes" 0 "No"	
	E7_m_c5		Expanding the distribution network	1 "Yes" 0 "No"	
	E7_m_c6		Expanding the after-sales support network	1 "Yes" 0 "No"	
	E7_m_c7		Other	1 "Yes" 0 "No"	
	E8		SINGLE	Has the firm gone through any form of quality certification (e.g. ISO9000) during last year?	1 " yes for products " 2 " yes for process " 3 " yes, both for products and process " 4 " No, the firm already had a quality certification " 5 " No, the firm has not gone through any quality certification " 6 "DK/DA"
E9	SINGLE	Was the quality certification mandatory (because of international or national regulations)?	1 "Yes" 2 "No" 3 "DK/DA"		
EA	SINGLE	Always referring to the last year the product range offered by your firm has...	1 " Been widened" 2 " Remained the same" 3 " Been reduced" 4 "DK/DA"		
EB	QUANTITY	Now please think of the product category your main product belongs to. If we rank the maximum quality available in the market for this product equals to 100, how would you rate the quality of your own product?	Percentage: 0 to 100	AAA	
E10	SINGLE	How do you mainly set your prices in your domestic market?	1 " prices are set as a margin over total costs" 2 " prices are set as a margin over variable costs" 3 " prices are fixed by the market" 4 " prices are regulated" 5 " other" 6 "DK/DA"		
E10A	SINGLE	Does the Head of the Group influence the pricing policy of your firm?	1 "Yes" 2 "No" 3 "DK/DA"		
E11	SINGLE	During the last year, the size of your margin has...	1 "Increased" 2 "Decreased" 3 "Remained constant" 4 "DK/DA"		
E12	SINGLE	Among the following which is the most important factor in determining the size of the margin over your costs?	1 "Responsiveness of demand for the product to variation in prices" 2 "Average margin in the industry" 3 "Macroeconomic factors (GDP, exchange rates, inflation, etc)" 4 "DK/DA"		
E15	SINGLE	Within your domestic market, the price (net of trade cost)...	1 " is the same for all customers " 2 " depends on the volume or distribution channel " 3 " is set case by case " 4 "other" 5 "DK/DA"		
E13	SINGLE	For a given good, the prices net of trade costs (declared as free-on-board price in the custom survey) are the same over all destination countries?	1 "Yes" 2 "No" 3 "DK/DA"		
	E14_m_c1		Different prices because of competition	1 "Yes" 0 "No"	
	E14_m_c2		Different prices because of demand-related factors (local tastes/ marketing / advertising costs)	1 "Yes" 0 "No"	
	E14_m_c3		Different prices because of sold quantity	1 "Yes" 0 "No"	

E14	E14_m_c4	MULTIPLE	Different prices because of trade costs	1 "Yes" 0 "No"	
	E14_m_c5		Different prices because of quality differentiation	1 "Yes" 0 "No"	
	E14_m_c6		Different prices because of differences in the tax-system	1 "Yes" 0 "No"	
	E14_m_c7		Different prices because of tariffs	1 "Yes" 0 "No"	
	E14_m_c8		Other reasons	1 "Yes" 0 "No"	
E16	SINGLE	In which currency do you set your prices in foreign countries?	1 "Euro" 2 "Domestic" 98 "Other" 99 "DK/DA"		
E17A	SINGLE	How do you deal with the exchange rate risk? Which of the following statements is similar to what your firm do?	1 "I use a foreign exchange risk protection" 2 "I do not normally hedge against exchange rate risk" 3 "The question is not applicable, as I only sell to countries with the same currency of my domestic market" 4 "DK/DA"		
E17	SINGLE	If the currency of your destination country is different than your domestic currency, how do you react to an appreciation of your domestic currency with respect to the currency of the destination country?	1 "I exit the market" 2 "I lower my prices (in domestic currency) to remain competitive" 3 "I increase the product quality" 4 "I do not change anything" 5 "Other" 6 "DK/DA"		
	rel_weight		Relative Weight		See the Users'Manual for their use
	abs_weight		Absolute Weight		See the Users'Manual for their use

ADDITIONAL VARIABLES on firms' characteristics as of the EFIGE Cross-Country Report (Altomonte, Aquilante & Ottaviano, 2012)		
Exporter		Dummy for exporter - wide definition: firm is direct exporter in 2008 or has been actively exporting in years before 2008.
Importer of materials		Dummy for importer of intermediate goods in 2008 or before.
Importer of services		Dummy for importer of services in 2008 or before.
Active outsourcer		Dummy for the firm that has production activity contracts and agreements abroad.
Passive outsourcer		Dummy for the firm that has sold some produced-to-order goods to foreign clients.
FDI		Dummy for firm running at least part of its production activity in another country via direct investments.
Global exporter		Dummy for firm exporting to China or India or Other Asian countries or USA or Canada or Central or South America.
Active abroad		At least one of the above variables takes value 1.
Total Factor Productivity		Solow residual of a Cobb-Douglas production function estimated following the semi-parametric algorithm proposed by Levinsohn and Petrin (2003), at the firm level, 2002-2008
Labour productivity		Value added per employee, at the firm level, 2002-2008 (Amadeus)
Unit labour cost		Labour compensation over value added, at the firm level, 2002-2008 (Amadeus)
r_d		Dummy for R&D: firm employs more than 0 employees to R&D activities
product_innov		Dummy for firms that carried out any product innovation in years 2007-2009
process_innov		Dummy for firms that carried out any process innovation in years 2007-2009
mkt_innov		Dummy for firms that carried out new to the market innovation
organizational_innov		Dummy for firms where product/process innovation implied organizational innovation
ln_k_l		Capital intensity as natural logarithm of capital labour ratio
hk		Dummy for Human capital: firm has a higher share of graduate employees with respect to the national average share of graduates
labour_flex		Dummy for Labour flexibility: firm uses part-time employment or fixed-term contracts
credit_req		Dummy for Credit request: firm requested some more credit in the last year
credit_obt		Dummy for Credit obtained: firm requested and obtained extra credit in the last year
fam_managed		Dummy for family managed: firm share of managers related to the controlling family is higher than the national average
fam_ceo		Dummy for family ceo: the ceo is the individual who controls the firm or a member of the controlling family
for_group		Dummy for Foreign group: firm belongs to a foreign group
decentr_management		Dummy for decentrated management: managers can take autonomous decisions in some business areas
bonus		Dummy for bonus: the managers are rewarded also with bonus
qual_cert		Dummy for Quality certification: the firm has gone through any quality certification during last year
comp		Dummy for Competition from abroad: the firm has competitors abroad

Available on request from Bruegel previous submission of a research proposal

Appendix 2

Country Codes

COUNTRY CODE	COUNTRY	AREA DESCRIPTION	AREA CODE
1	Afghanistan	OTHER ASIAN COUNTRIES	5
3	Albania	OTHER EUROPEAN COUNTRIES NOT EU	3
4	Algeria	OTHER AREAS	8
5	Andorra	OTHER EUROPEAN COUNTRIES NOT EU	3
6	Angola	OTHER AREAS	8
9	Antigua	CENTRAL AND SOUTH AMERICA	7
11	Argentina	CENTRAL AND SOUTH AMERICA	7
12	Armenia	OTHER EUROPEAN COUNTRIES NOT EU	3
14	Australia	OTHER AREAS	8
15	Austria	15 UE COUNTRIES	1
16	Azerbaijan	OTHER EUROPEAN COUNTRIES NOT EU	3
18	Bahamas	CENTRAL AND SOUTH AMERICA	7
19	Bahrain	OTHER ASIAN COUNTRIES	5
20	Bangladesh	OTHER ASIAN COUNTRIES	5
21	Barbados	CENTRAL AND SOUTH AMERICA	7
22	Belgium	15 UE COUNTRIES	1
23	Belize	CENTRAL AND SOUTH AMERICA	7
24	Benin	OTHER AREAS	8
26	Bhutan	OTHER ASIAN COUNTRIES	5
27	Belarus	OTHER EUROPEAN COUNTRIES NOT EU	3
28	Bolivia	CENTRAL AND SOUTH AMERICA	7
29	Bosnia Herzegovina	OTHER EUROPEAN COUNTRIES NOT EU	3
30	Botswana	OTHER AREAS	8
31	Brazil	CENTRAL AND SOUTH AMERICA	7
32	Brunei	OTHER ASIAN COUNTRIES	5
33	Bulgaria	OTHER UE COUNTRIES	2
34	Burkina Faso	OTHER AREAS	8
35	Myanmar	OTHER ASIAN COUNTRIES	5
36	Burundi	OTHER AREAS	8
37	Cameroon	OTHER AREAS	8
38	Canada	USA AND CANADA	6
40	Cape Verde	OTHER AREAS	8
42	Chad	OTHER AREAS	8
46	Chile	CENTRAL AND SOUTH AMERICA	7
47	China	CHINA AND INDIA	4
48	Cyprus	OTHER UE COUNTRIES	2
50	Colombia	CENTRAL AND SOUTH AMERICA	7
51	Comoros	OTHER AREAS	8
52	Congo	OTHER AREAS	8
54	Cote d' Ivoire*	OTHER AREAS	8
55	Costa Rica	CENTRAL AND SOUTH AMERICA	7
56	Croatia	OTHER EUROPEAN COUNTRIES NOT EU	3
57	Cuba	CENTRAL AND SOUTH AMERICA	7
58	Denmark	15 UE COUNTRIES	1
60	Djibouti	OTHER AREAS	8
61	Dominica	CENTRAL AND SOUTH AMERICA	7
62	Ecuador	CENTRAL AND SOUTH AMERICA	7
63	Egypt	OTHER AREAS	8
65	El Salvador	CENTRAL AND SOUTH AMERICA	7
66	United Arab Emirates	OTHER ASIAN COUNTRIES	5
67	Eritrea	OTHER AREAS	8
68	Estonia	OTHER UE COUNTRIES	2

69	Ethiopia	OTHER AREAS	8
72	Fiji	OTHER AREAS	8
73	Philippines	OTHER ASIAN COUNTRIES	5
74	Finland	15 UE COUNTRIES	1
75	France	15 UE COUNTRIES	1
76	Gabon	OTHER AREAS	8
78	Gambia	OTHER AREAS	8
80	Georgia	OTHER EUROPEAN COUNTRIES NOT EU	3
81	Germany	15 UE COUNTRIES	1
82	Ghana	OTHER AREAS	8
83	Japan	OTHER ASIAN COUNTRIES	5
85	Jordan	OTHER ASIAN COUNTRIES	5
86	United Kingdom	15 UE COUNTRIES	1
87	Greece	15 UE COUNTRIES	1
88	Grenada	CENTRAL AND SOUTH AMERICA	7
91	Guatemala	CENTRAL AND SOUTH AMERICA	7
92	Guayana	CENTRAL AND SOUTH AMERICA	7
94	Guinea	OTHER AREAS	8
95	Guinea Bissau	OTHER AREAS	8
96	Equatorial Guinea	OTHER AREAS	8
97	Haiti	CENTRAL AND SOUTH AMERICA	7
99	Honduras	CENTRAL AND SOUTH AMERICA	7
101	Ireland	15 UE COUNTRIES	1
102	India	CHINA AND INDIA	4
103	Indonesia	OTHER ASIAN COUNTRIES	5
104	Iran	OTHER ASIAN COUNTRIES	5
105	Iraq	OTHER ASIAN COUNTRIES	5
106	Iceland	OTHER EUROPEAN COUNTRIES NOT EU	3
107	Israel	OTHER ASIAN COUNTRIES	5
108	Italy	15 UE COUNTRIES	1
109	Jamaica	CENTRAL AND SOUTH AMERICA	7
111	Cambodia	OTHER ASIAN COUNTRIES	5
112	Kazakhstan	OTHER ASIAN COUNTRIES	5
113	Kenya	OTHER AREAS	8
114	Kiribati	OTHER AREAS	8
115	Korea DPR	OTHER ASIAN COUNTRIES	5
116	Korea Rep. (South)	OTHER ASIAN COUNTRIES	5
117	Kuwait	OTHER ASIAN COUNTRIES	5
118	Kyrgyzstan	OTHER ASIAN COUNTRIES	5
119	Laos	OTHER ASIAN COUNTRIES	5
120	Lebanon*	OTHER ASIAN COUNTRIES	5
121	Lesotho	OTHER AREAS	8
122	Latvia	OTHER UE COUNTRIES	2
123	Liberia	OTHER AREAS	8
124	Libya*	OTHER AREAS	8
125	Liechtenstein	OTHER EUROPEAN COUNTRIES NOT EU	3
126	Lithuania	OTHER UE COUNTRIES	2
127	Luxembourg	15 UE COUNTRIES	1
129	Macedonia	OTHER EUROPEAN COUNTRIES NOT EU	3
130	Madagascar	OTHER AREAS	8
132	Malawi	OTHER AREAS	8
133	Maldives	OTHER ASIAN COUNTRIES	5
134	Malaysia	OTHER ASIAN COUNTRIES	5
135	Mali	OTHER AREAS	8
136	Malta	OTHER UE COUNTRIES	2
138	Marshall	OTHER AREAS	8
140	Mauritania	OTHER AREAS	8
141	Mauritius	OTHER AREAS	8
143	Mexico	CENTRAL AND SOUTH AMERICA	7
144	Micronesia	OTHER AREAS	8
146	Moldova	OTHER EUROPEAN COUNTRIES NOT EU	3
147	Monaco	OTHER EUROPEAN COUNTRIES NOT EU	3
148	Mongolia	OTHER ASIAN COUNTRIES	5

149	Montenegro	OTHER EUROPEAN COUNTRIES NOT EU	3
150	Morocco	OTHER AREAS	8
151	Mozambique	OTHER AREAS	8
152	Namibia	OTHER AREAS	8
153	Nepal	OTHER ASIAN COUNTRIES	5
154	Nicaragua	CENTRAL AND SOUTH AMERICA	7
155	Niger	OTHER AREAS	8
156	Nigeria	OTHER AREAS	8
157	Norway	OTHER EUROPEAN COUNTRIES NOT EU	3
159	New Zealand	OTHER AREAS	8
160	Netherlands	15 UE COUNTRIES	1
161	Oman	OTHER ASIAN COUNTRIES	5
162	Pakistan	OTHER ASIAN COUNTRIES	5
163	Palau	OTHER ASIAN COUNTRIES	5
165	Panama	CENTRAL AND SOUTH AMERICA	7
166	Papua New Guinea	OTHER AREAS	8
167	Paraguay	CENTRAL AND SOUTH AMERICA	7
168	Peru	CENTRAL AND SOUTH AMERICA	7
170	Poland	OTHER UE COUNTRIES	2
173	Portugal	15 UE COUNTRIES	1
174	Qatar	OTHER ASIAN COUNTRIES	5
176	Central African Republic	OTHER AREAS	8
177	Czech Republic	OTHER UE COUNTRIES	2
178	Yemen Rep.*	OTHER ASIAN COUNTRIES	5
181	Dominican Rep.	CENTRAL AND SOUTH AMERICA	7
183	Romania	OTHER UE COUNTRIES	2
184	Russia	OTHER EUROPEAN COUNTRIES NOT EU	3
185	Rwanda	OTHER AREAS	8
187	Samoa (West)	OTHER AREAS	8
188	San Marino	OTHER EUROPEAN COUNTRIES NOT EU	3
189	Sao Tome+Principe	OTHER AREAS	8
190	Saudi Arabia	OTHER ASIAN COUNTRIES	5
191	Senegal	OTHER AREAS	8
192	Serbia	OTHER EUROPEAN COUNTRIES NOT EU	3
193	Seychelles	OTHER AREAS	8
194	Sierra Leone	OTHER AREAS	8
195	Singapore	OTHER ASIAN COUNTRIES	5
196	Slovakia	OTHER UE COUNTRIES	2
197	Slovenia	OTHER UE COUNTRIES	2
198	Solomon	OTHER AREAS	8
199	Somalia	OTHER AREAS	8
200	Spain	15 UE COUNTRIES	1
201	Sri Lanka	OTHER ASIAN COUNTRIES	5
203	St. Kitts-Nevis	CENTRAL AND SOUTH AMERICA	7
204	St. Lucia*	CENTRAL AND SOUTH AMERICA	7
206	St. Vincent*	CENTRAL AND SOUTH AMERICA	7
207	South Africa	OTHER AREAS	8
208	Sudan	OTHER AREAS	8
209	Suriname	CENTRAL AND SOUTH AMERICA	7
211	Sweden	15 UE COUNTRIES	1
212	Switzerland	OTHER EUROPEAN COUNTRIES NOT EU	3
213	Swaziland	OTHER AREAS	8
214	Syria	OTHER ASIAN COUNTRIES	5
215	Thailand	OTHER ASIAN COUNTRIES	5
216	Taiwan	OTHER ASIAN COUNTRIES	5
217	Tajikistan	OTHER ASIAN COUNTRIES	5
218	Tanzania	OTHER AREAS	8
219	Timor - Leste	OTHER ASIAN COUNTRIES	5
221	Togo	OTHER AREAS	8
222	Tonga	OTHER AREAS	8
223	Trinidad Tobago*	CENTRAL AND SOUTH AMERICA	7
224	Tunisia	OTHER AREAS	8
225	Turkey	OTHER EUROPEAN COUNTRIES NOT EU	3

226	Turkmenistan	OTHER ASIAN COUNTRIES	5
228	Tuvalu	OTHER AREAS	8
229	Ukraine	OTHER EUROPEAN COUNTRIES NOT EU	3
230	Uganda	OTHER AREAS	8
231	Hungary	OTHER UE COUNTRIES	2
232	Uruguay	CENTRAL AND SOUTH AMERICA	7
233	USA	USA AND CANADA	6
234	Uzbekistan	OTHER ASIAN COUNTRIES	5
235	Vanuatu	OTHER AREAS	8
236	Vatican	OTHER EUROPEAN COUNTRIES NOT EU	3
237	Venezuela	CENTRAL AND SOUTH AMERICA	7
238	Vietnam	OTHER ASIAN COUNTRIES	5
242	Democratic Republic of the Congo	OTHER AREAS	8
243	Zambia	OTHER AREAS	8
244	Zimbabwe	OTHER AREAS	8
999	Do not know		9999999999