Advanced International Trade: Lesson 1

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M2 Paris I

Syllabus

Lesson 1: Introduction

- Part I: Firms in international trade. Empirical facts
  - Micro-determinants of international trade
  - The characteristics of internationalized firms
  - Firm heterogeneity: Exporter & importer premia
  - Multiproduct firms: exporter and importer
  - Determinants of prices differences across firms

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Lesson 1: Introduction

- Part II: Main Datasets and different sources
  - Bilateral trade data: gravity variables
  - Macro data
  - Industry-level data
  - Firm level data

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Lesson 1: Introduction

- **Suggested readings:**
- Bernard, Andrew B., J. Bradford Jensen, Stephen J. Redding, and Peter K. Schott. 2007. "Firms in International Trade." Journal of Economic Perspectives, 21(3): 105-130.
- Bernard, Andrew B., and J. Bradford Jensen, 1999, Exceptional Exporter Performance: cause, effect, or both? Journal of International Economics, 47(1): 125.
- Manova, K. and Z. Zhang, Export Prices across Firms and Destinations Quarterly Journal of Economics 127 (2012), p.379-436.
- Goldberg, P., A. Khandelwal, N. Pavnick and P. Topalova Multi-product Firms and Product Turnover in the Developing World: Evidence from India, Review of Economics and Statistics, 92 (4), pp. 1042-1049.

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Lesson 2: Micro-level Trade Elasticities

- Microfoundation of the gravity model
- The elasticity of the extensive and intensive margin of trade
- Integrating firm heterogeneity as a determinant of aggregate trade elasticities

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Lesson 2: Micro-level Trade Elasticities

- Estimating trade elasticities with micro-data
- Main issues: estimation of firm level elasticity
- Demand and Supply determinants of aggregate trade elasticity

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Lesson 2: Micro-level Trade Elasticities

- **Suggested readings:**

- Chaney (2008), "Distorted Gravity: The Intensive and Extensive Margins of International Trade?", American Economic Review 2008, 98:4, 1707-1721

- Bas, M, T. Mayer and M. Thoenig, (2016), "From micro to macro: Demand and supply-side determinants of trade elasticity?", Working Paper.

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Lesson 3: Trade and Firm Productivity

- **The effects of trade liberalization on firm performance**
  - Trade reforms and firm productivity
  - Disentangling the effect of output and input tariffs
  - Foreign competition channel
  - Imported inputs channel

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Lesson 3: Trade and Firm Productivity

- **The effects of trade liberalization on firm performance**
  - Causality: productivity $--> $ export activity
  - Estimation issues
  - Learning by exporting

  - **Suggested readings:**

  - Amiti, M. and Konings, J. "Trade Liberalization, Intermediate Inputs, and Productivity". American Economic Review, December vol. 97(05) December 2007, pp.1611-1638.
  - De Loecker, Jan, 2007, Do exports generate higher productivity? Evidence from Slovenia, Journal of International Economics 73 (1): 69-98.

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Lesson 4: Trade, Technology and Wages

- Trade reform and Multi-product firms
- Trade Liberalization and Product Innovation
- Imported inputs and domestic product growth in India

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Lesson 4: Trade, Technology and Wages

- Trade Liberalization and Labor Markets
- Trade Liberalization and Firm Wages
- Tariff cuts, firms' trade orientation and wage inequality
- Expansion of export opportunities and labor reallocation
- From informal to formal sector employment reallocation In Vietnam

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Lesson 4: Trade, Technology and Wages

- **Suggested readings:**

- Goldberg, P., Khandelwal, A, Pavcnik, N. and P. Topalova Imported Intermediate Inputs and Domestic Product Growth: Evidence from India, Quarterly Journal of Economics 125(4) 2010, pp. 1727-1767.

- Amiti, M. and Davis, D., 2012. Trade, Firms, and Wages: Theory and Evidence, Review of Economic Studies, vol. 79(1) 1 -36.

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Lesson 5: The role of product quality on heterogeneous firms models

- Prices and quality
- Demand for quality products;
- Quality as a demand shifter (CES),
- Endogenous supply of quality;

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Lesson 5: The role of product quality on heterogeneous firms models

- Different measures of product quality;
- Input-trade liberalization and quality upgrading.
- **Suggested readings:**
- Bas, M and Strauss-Kahn, V., 2015, Input-Trade Liberalization, Export Prices and Quality Upgrading, Journal of International Economics, Vol. 95 (2), p.p. 250-262.
- Khandelwal, A., Schott, P., Wei, S., 2013. Trade liberalization and embedded institutional reform: evidence from Chinese exporters. American Economic Review. 103 (6), 2169-2195.

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Lesson 6: Trade, Prices, Mark-ups, Pass-through

- From Micro to Macro:
- Micro-level evidence to understand Macro economic puzzle
- Firm Heterogeneity, Exports and Exchange Rate Pass-through
- Imported inputs, Exported products and Exchange Rate Pass-through

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Lesson 6: Trade, Prices, Mark-ups, Pass-through

- Trade liberalization and Markups
- Tariffs pass-through on prices
- **Suggested readings:**
- Berman, N., Martin, P. and T. Mayer 2011. How do Different Exporters React to Exchange Rate Changes?, Quarterly Journal of Economics 127(1):437-4493.
- De Loecker, P. Goldberg, A. Khandelwal and N. Pavcnik, "Prices, Markups and Trade Reform", Econometrica, 84(2), 445-510, 2016

New Trade Theory: Krugman Theory

- At the beginning of the 80s, the works of Krugman (1980), Helpman (1981) and Krugman and Helpman (1985) develop a **"'new trade theory"'**.
- that takes into account the following empirical evidence:
- Intra-industry trade between similar countries.
- Example: France and Germany.

New Trade Theory: Krugman Theory

- **Key assumptions:**
- **Imperfect competition**: companies have the power to set prices
- **Product differentiation**: companies sell different types (quality) products
- **Fixed production costs**: scale economies.
- The market size determines the type of goods exported.
- Limits

Lesson 1

- This new trade theory assumes that firms are homogeneous;
- Consequences of representative firm models:
- (1) Trade affects all firms in a sector in similar ways;
- (2) All firms producing in the traded-oriented sector will export;
- Nevertheless, recent studies based on firm level datasets show the existence of asymmetries between those firms engaged in international trade and the ones that only sell into the domestic market.

Lesson 1

- **Main questions of the New new trade Theory**
- Trade and firms' decisions

Lesson 1

- **Main questions of the New new trade Theory**
- Trade and firms' decisions:
- Why only a few companies in a country are exporting / importing?
- Which are the characteristics of firms that export / import?
- Which are the companies/workers that benefit the most from trade liberalization?
- Which is the impact of trade liberalization on firm productivity?
- Which is the impact of trade liberalization on prices?
- Which is the impact of trade liberalization on wages?

Lesson 1

- **New new trade Theory**
- Micro determinants of international trade.
- Determinants of firms' decision to enter the foreign market: export, import or FDI.
- Main assumptions of the New new trade Theory

- **Main assumptions of the New new trade Theory**
- Fixed export costs to adapt the products to the foreign tastes and production norms.
- Heterogeneous firms in term of different productivity (marginal costs) levels from Melitz (2003)

Firms in International Trade

- "'Firms in International Trade"' (2007), Bernard, Redding, Jensen and Schott

- Study the behavior and differences across firms that are engage in international trade for the manufacturing sector in the US.

Exporter premia

- **Exporter premia**

Exporter premia

- **Exporter premia**:
- Differences in firm performance between exporters and non-exporters within the same manufacturing industry.
- Firm performance measures: employment, labor productivity (value added per worker), TFP, wages, capital per worker and skill per worker.

Exceptional export performance

- Exporter premia estimation:
- $x = \beta$ Exporter $+ I + \epsilon$
- Where x is the firm performance variable of interest
- Exporter is a dummy equal to one if the firm reports positive exports in the year.
- I are industry dummies
- Coefficient of interest is β
- Firm characteristics

Exporter premia

Table 3: Exporter Premia in U.S. Manufacturing, 2002

	Exporter Premia		
	(1)	(2)	(3)
Log Employment	1.19	0.97	.
Log Shipments	1.48	1.08	0.08
Log Value Added per Worker	0.26	0.11	0.10
Log TFP	0.02	0.03	0.05
Log Wage	0.17	0.06	0.06
Log Capital per Worker	0.32	0.12	0.04
Log Skill per Worker	0.19	0.11	0.19
Additional Covariates	None	Industry Fixed Effects	Industry Fixed Effects, Log Employment

Notes: Notes: Data are for 2002 and are from the U.S. Census of Manufactures. All results are from bivariate OLS regressions of firm characteristic in first column on a dummy variable indicating firm's export status. Columns two and three include industry fixed effects and industry fixed effects plus log firm employment, respectively, as additional controls. Total factor productivity (TFP) is computed as in Caves et al (1982). Capital and skill per worker are capital stock and non-production workers per total employment, respectively. All results are significant at the 1 percent level.

TFP estimation

- Firm total factor productivity (TFP) can be estimated as a residual
- from a production function estimation
- TFP is the Solow residual

TFP estimation

- Production function estimation
- Estimate a Cobb-Douglas production function:

$$y_{it} = \beta_0 + \beta_l l_{it} + \beta_k k_{it} + \beta_m m_{it} + \omega_{it} + \eta_{it} \quad (1)$$

- All variables are expressed in natural logs.
- y_{pt} is the total production of firm i at time t,
- l_{it} is labor,
- m_{it} is materials,
- k_{it} stands for capital stock

Firms in International Trade

Exporting and Importing by U.S. Manufacturing Firms, 1997

NAICS Industry	Percent of All Firms	Percent of Firms that Export	Percent of Firms that Import	Percent of Firms that Import & Export
311 Food Manufacturing	7	17	10	7
312 Beverage and Tobacco Product	1	28	19	13
313 Textile Mills	1	47	31	24
314 Textile Product Mills	2	19	13	9
315 Apparel Manufacturing	6	16	15	9
316 Leather and Allied Product	0	43	43	30
321 Wood Product Manufacturing	5	15	5	3
322 Paper Manufacturing	1	42	18	15
323 Printing and Related Support	13	10	3	2
324 Petroleum and Coal Products	0	32	17	14
325 Chemical Manufacturing	3	56	30	26
326 Plastics and Rubber Products	5	42	20	16
327 Nonmetallic Mineral Product	4	16	11	7
331 Primary Metal Manufacturing	1	51	23	21
332 Fabricated Metal Product	20	21	8	6
333 Machinery Manufacturing	9	47	22	19
334 Computer and Electronic Product	4	65	40	37
335 Electrical Equipment, Appliance,	2	58	35	30
336 Transportation Equipment	3	40	22	18
337 Furniture and Related Product	6	13	8	5
339 Miscellaneous Manufacturing	7	31	19	15
Aggregate Manufacturing	100	27	14	11

Notes: Data are for 1997 and are for firms that appear in both the U.S. Census of Manufacturers and the LFTTD. Column 2 summarizes the distribution of manufacturing firms across three-digit NAICS industries. Remaining columns report the percent of firms in each industry that export, import and do both.

Table 8
Trading Premia in U.S. Manufacturing, 1997

	Exporter Premia	Importer Premia	Exporter & Importer Premia
Log Employment	1.50	1.40	1.75
Log Shipments	0.29	0.26	0.31
Log Value Added per Worker	0.23	0.23	0.25
Log TFP	0.07	0.12	0.07
Log Wage	0.29	0.23	0.33
Log Capital per Worker	0.17	0.13	0.20
Log Skill per Worker	0.04	0.06	0.03

Notes: Data are for 1997 and are for firms that appear in both the U.S. Census of Manufacturers and the LFTTD. All results are from bivariate OLS regressions of firm characteristic in first column on dummy variable noted at the top of each column as well as industry fixed effects and firm employment as additional controls. Employment regressions omit firm employment as a covariate. Total factor productivity (TFP) is computed as in Caves et al (1982). Capital and skill per worker are capital stock and non-production workers per total employment, respectively. All results are significant at the 1 percent level.

Performance of exporting firms

- Measuring the performance of firms in the export market

Performance of exporting firms

- Measuring the performance of firms in the export market:
- The number of products exported per firm.
- The number of export destination countries.

Performance of exporting firms

Share of Exporting Firms

Number of Products	Number of Countries					
	1	2	3	4	5+	All
1	40.4	1.2	0.3	0.1	0.2	42.2
2	10.4	4.7	0.8	0.3	0.4	16.4
3	4.7	2.3	1.3	0.4	0.5	9.3
4	2.5	1.3	1.0	0.6	0.7	6.2
5+	6.0	3.0	2.7	2.3	11.9	25.9
All	64.0	12.6	6.1	3.6	13.7	100

Performance of exporting firms

Share of Export Value

Number of Products	Number of Countries					
	1	2	3	4	5+	All
1	0.20	0.06	0.02	0.02	0.07	0.4
2	0.19	0.12	0.04	0.03	0.15	0.5
3	0.19	0.07	0.05	0.03	0.19	0.5
4	0.12	0.08	0.08	0.04	0.27	0.6
5+	2.63	1.23	1.02	0.89	92.2	98.0
All	3.3	1.5	1.2	1.0	92.9	100

Performance of exporting firms

Share of Employment

Number of Products	Number of Countries					
	1	2	3	4	5+	All
1	7.0	0.0	0.0	0.0	0.0	7.1
2	1.9	2.6	0.1	0.0	0.0	4.6
3	1.3	1.0	0.8	0.0	0.2	3.3
4	0.5	0.4	0.3	0.2	0.2	1.6
5+	3.5	2.6	4.3	4.1	68.8	83.3
All	14.2	6.7	5.5	4.3	69.2	100

Multi-product firms

- Goldberg, Khandelwal, Pavcnik and Topalova (2010) "Multi-product Firms and Product Turnover in the Developing World: Evidence from India", Review of Economics and Statistics.
- Evidence on the patterns of multi-product firm production in India.
- Comparison with the US firms

Multi-product firms

- Main Results:
- (1) In cross-section, multi-product firms in India are similar to U.S. firms:
- Multi-product firms are strong performers: larger, more productive, and more likely to export than single-product firms
- (2) Differences in time-series:
  - Product rationalization is far less common in India.
  - No link between trade liberalization and product rationalization
  - Contrary to predictions of multi-product firm models in trade (BRS)

Multi-product firms

- Data:
- (1) Firm level data for India (Prowess) during the perido 1989-2003.
- (2) Detailed annual information on firms' product-mix
  - For each product manufactured by the firm, the dataset provides the value of sales, quantity and units.
  - Look at changes in firms' decision to add and drop products

Multi-product firms

- Identification strategy: cross section
- Measuring differences between single and multiproduct firms in 2000
- $X = \alpha Multi + Ind$
- Where "X" is firm' outout, TFP or the probability of export
- Multi is a dummy variable that is equal to one if the firm is multi-product (industry, sector)
- *Ind* industry fixed effects

Multi-product firms

Table 2: Characteristics of Multiple-Product Firms

	Multiple Product	Multiple Industry	Multiple Sector
Output	0.81	0.73	0.73
Probability of Export	0.13	0.12	0.14
TFP	0.01^	0.00^	0.00^

Notes: Table summarizes the differences in 2000 between single-product and multiple-product firms. Each cell reports a separate regression of the dependent variable (reported in column 1) on a dummy that takes a value of one if the firm produces more than one product (column 2), industry (column 2) and sector (column 3), respectively. Regressions also include industry fixed effects and standard errors are clustered at the industry level. All coefficients are statistically significant at conventional levels with the exception of coefficients denoted with a ^. Probability of export is a linear probability regression. There are 2,889 observations in the output and export regressions, and 2,783 observations in the TFP regressions. Source: Authors' calculations from the Prowess database.

Multi-product firms

- Identification strategy: cross section
- Testing core competencies
- The largest product accounts for 86% to 65% to 46% of total sales in firms that produce at most 2, 5, and 10 products.

Multi-product firms

- Identification strategy: Time-series
- Measuring the effect of trade on product churning

Multi-product firms

- Identification strategy: Time-series
- Measuring the effect of trade liberalization on product churning
- $ln(n_{j,t}) = \alpha_j + \alpha_t + \beta\tau_{s,t-1}$
- Where $ln(n)$ is the number of product produced by firm j.
- $\tau_{s,t-1}$= industry level tariffs on final goods
- Within firm estimation: includes firm and year fixed effects

Multi-product firms

Table 6: Firm Extensive Product Margin and Tariffs

	Scope	Scope	Scope	Scope	Add	Drop	Scope	Drop	Scope	Scope
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lagged Tariffs	-0.033	-0.028	0.032		-0.016	0.006			-0.034	0.024
	0.038	0.037	0.122		0.023	0.017			0.035	0.046
Post-1991 *Large Tariff Decline Indicator				-0.032						
				0.025						
Firm-Specific Lagged Tariff							-0.017			
							0.027			
Lagged Tariff of Smallest Product								-0.018		
								0.015		
Lagged Delicensed									-0.037	
									0.025	
Lagged Tariff x Delicensed by 1988										-0.081 *
										0.046
Year FEs	yes	no	yes	yes	yes	yes	yes	yes	yes	yes
NIC2*Year FEs	no	yes	no	no	no	no	no	no	no	no
Firm FEs	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
R-squared	0.90	0.90	0.94	0.89	0.27	0.25	0.90	0.26	0.90	0.9
Observations	14,864	14,864	4,115	14,596	11,615	11,615	14,819	11,569	13,435	13,435

Notes: The dependent variable for each regression is reported in the column heading. Scope is log number of products produced by a firm. Add and Drop are indicators for whether a firm adds (drops) a product. Column 3 uses pre- and post-liberalization years of data, 1990 and 2001; for 2001, the 1997 tariff is assigned. Columns 4 reports a specification where "post-1991" is an indicator that is 1 in 1991-97 and "Large Tariff Decline" indicator is one for NIC4 industries with above average (greater than 59 percentage points) decline in tariffs between 1989 and 1997. The post-1991 indicator and the "Large Tariff Decline" indicator are itself not identified because of the included year and fixed effects. Column 7 uses firm-specific tariffs based on the firms's initial product weights. Column 8 uses the tariff of the smallest (initial) product of the firm. Column 10 interacts lagged tariffs with an indicator for if the industry was delicensed by 1988 (the main effect of the delicensed in 88 variable is not identified because of the firm fixed effect). Standard errors clustered at the industry level except column 3 which clusters at the industry-year level. Significance: * 10 percent, ** 5 percent, *** 1 percent.

Selection effect vs. learning by exporting

- Exporters are better than non-exporters over a broad spectrum of performance measures.
- An interesting issue is whether their superior performance predates their access to export markets or
- rather their performance improves as a result of their access to export markets.

Selection effect vs. learning by exporting

- The causality could run both ways:
- (1) Only more productive firms become exporters
- (2) Exporting activities improve firm efficiency ex-post

Selection effect vs. learning by exporting

- **Selection into export status:**
- The existence of fixed costs of exporting explains why only a subset of most productive firms exports
- Since firms might pay fixed investments costs to entered the foreign markets only the most profitable firms "self-select" into export markets.
- Example of fixed cost of exporting.

Selection effect vs. learning by exporting

- **Learning by exporting:**
- The other direction of the causality goes from export status to firms' productivity.
- The main argument is grounded on ex-post productivity improvements after the firm begins to export.
- These productivity gains arise from the existence of positive externalities originated in the foreign market.
- Examples of learning by exporting

Selection effect vs. learning by exporting

- **Learning by exporting:**
- Exporters are able to beneficiate from linkages created in the foreign market with suppliers as well as acquire specific knowledge on competitors abroad.
- At the same time, exporters benefit from their knowledge of the foreign market to adopt more advanced technologies in the case of developing countries.

Selection effect vs. learning by exporting

- **Conscious self selection:**
- Since firms know that their productivity is an important determinant to enter the foreign market
- They might invest in technologies ex-ante to improve their efficiency and profitability to pay the fixed export costs.

Trade and Learning by Exporting

Bernard, Andrew B., and J. Bradford Jensen, 1999, Exceptional Exporter Performance: cause, effect, or both? Journal of International Economics, 47(1): 125.

Aim

- Explores the causality link between export activity and firm productivity
- Do firms that perform better become exporters or exporting improves firm performance?

Contribution

- Disentangles the selection effect from the learning by exporting

Trade and Learning by Exporting

Estimation strategy

- 1st step: estimation the firm export decision as a function of firm performance measures
- A linear probability models in first differences:
- $\Delta Y_{it} = \alpha_i + \alpha \Delta X_{i,t-1} + N \Delta Y_{i,t-1} + \Delta \mu_{it}$
- Y_{it} a dummy variable equal to one if the firm export in year t
- $X_{i,t-1}$ firm characteristics in $t-1$

Main results

The decision to export[a]	First differences
Plant-level Variables[b]	
Total employment	0.104[d]
	(0.046)
Wage	0.029[d]
	(0.026)
Non-production/total Employment	−0.024
	(0.037)
Productivity	0.012[e]
	(0.007)
Changed product since last year	0.048[c]
	(0.009)
Last changed product two years ago	0.014[d]
	(0.007)
Exported last year	0.420[c]
	(0.012)
Last exported two years ago	0.093[c]
	(0.005)
Year dummies	
Industry dummies	
State dummies	
N	81 636

Trade and Learning by Exporting

Does exporting improve performance?

- 2nd step: estimation of a growth rate regression with a dummy for continuous exporters:
- $\%\Delta X_{it} = \alpha_0 + \alpha_1 Continuous + \alpha_2 Size_{i,0} + \alpha_2 Char.s_{i,0} + \epsilon_{it}$
- Sample includes plants in the first and last years
- Continuous exporters: plants that are exporters in both years.
- $Char.s_{i,0}$ = other firm characteristics in the initial year.

Main results

Gains from continuous exporting

	1984–88	1989–92
Total employment	0.83%	1.52%
	(3.18)	(4.11)
Shipments	1.02%	1.12%
	(3.45)	(2.45)
Value-added per worker	0.61%	0.71%
	(1.42)	(1.00)
TFP	0.11%	
	(0.17)	
Average wage	0.47%	0.30%
	(3.97)	(1.62)
Non-production/total employment	0.01%	0.05%
	(0.13)	(0.47)
Production worker wage	0.50%	0.80%
	(3.06)	(2.98)
Non-production worker wage	0.15%	−0.65%
	(0.64)	(1.63)

The sample includes only those plants that export in both the first and last year. Continuous plants export in all years.

- Continuous exporters outperform firms that exit and reenter the export market in terms of employment, shipments, and production worker wages
- Productivity growth and non-production wages are slightly higher but not significantly different from zero.

Trade and Learning by Exporting

Conclusion

- Evidence on selection effects of most productive firms into the export market.
- In the years just prior to the start of exporting, future exporters are growing faster than non-exporting firms.
- Exporting increases the probability of plant survival.
- But no robust evidence of productivity growth after start exporting.

Part II: Existing data

Firm level data

- Firm and plant-level data from Census of Production
  - Information on all manufacturing firms (threshold) on value added workers, capital, materials, total exports and imports
  - Census are confidential: access is restricted to official Research Data Centers (eg CEPII, BdF in France)
  - E.g. for France E.A.E.: "Enquete annuel des entreprises" INSEE

Part II: Existing data

Firm level data

- Alternatives:
  - Surveys : world bank doing business surveys
  - Company accounts data provided by Bureau Van Dijk: Amadeus (Europe) and Orbis (World)

Existing data

Firm level data

- Transaction level data at the firm level
  - Customs data at the firm-product (8/10 digit)-destination (origin) country level
  - Information on the value of exports and imports and quantity
  - Unit values
  - Possibility to match with firm-level production data with same firm-id or company name.
  - E.G. French customs data.

Part II: Existing data

Product-country level Trade Data

- **Bilateral Trade Data at product (HS6 level) and country i, j**
  - CEPII: BACI dataset from COMTRADE (UNITED NATIONS):
  - *http* : *//www.cepii.fr/CEPII/en/bdd*$_m$*odele/bdd.asp*
  - World Bank, WITS $\rightarrow$ TRAINS and COMTRADE data
  - *http* : *//wits.worldbakn.org*

Part II: Existing data

Product-country level Trade Data

- OECD
  - International trade by commodity, and country:
  - http://stats.oecd.org/Index.aspx?usercontext=sourceoec
  - STAN Database, production data by sector and country
  - http://www.oecd.org/sti/ind/stanstructuralanalysisdatabase.htm

Part II: Existing data

Country level Data

- **WTO**: online trade statistics, overview of latest trends in world trade
- http://www.wto.org/
- **Penn World Tables**: GDP, Exchange rate, Price Indexes
- http://pwt.econ.upenn.edu/php site/pwt index.php
- **International Financial Statistics (IMF)**
- http://www.imfstatistics.org/imf/logon.aspx
- **World Bank Indicators**: -World Development Indicators Online
- *http* : *//www.worldbank.org*

Part II: Existing data

Bilateral determinants of international trade

- **Gravity data:**
- GeoDist (CEPII)
- Bilateral Distance, common language, colonial links, common border
- *http* : *//www.cepii.fr*

Part II: Existing data

Tariffs data at the product-country level

- Data on Most Favorite Nation (MFN), Effectively Applied tariffs and Ad valorem Tariffs
- Different levels of aggregation at the industry level (2,3,4 digit) or at the product level HS6.
- World Bank, WITS $\rightarrow$ TRAINS and COMTRADE data
- *http* : *//wits.worldbakn.org*

Part II: Existing data

Tariffs data at the product-country level

- Market Access Map (MAcMap) provides a disaggregated, exhaustive and bilateral measurement of applied tariff duties at the hs6 product level.
- It takes regional agreements and trade preferences exhaustively into account.
- The source data is from ITC (UNCTAD WTO)
- CEPII (MacMaps)
- *http* : *//www.cepii.fr*

Part II: Existing data

Trade agreements

- WTO (RTA)
- Regional bilateral and multilateral trade agreetments
- http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx
- Jose de Sousa (RTA, currency unions)
- http://jdesousa.univ.free.fr/data.htm

Part II: Existing data

Other Data

- Rauch product differentiation: homogeneous vs. differentiated goods
- *http : / / www . macalester . edu / research / economics / PAGE / HAVEMAN / Trade . Resources / TradeData . html*
- Broda and Weinstein (trade elasticities)
- *http : / / www . columbia . edu / dew35 / TradeElasticities / TradeElasticities . html*

Part II: Existing data

Other Data: concordance industry codes

- Haveman (industry concordances)
- *http* : *//www.haveman.org/*
- Unstat: HS correspondance over time:
- http://unstats.un.org/unsd/trade/conversions/HS%20Correlation%20and%20Conversion%20tables.htm