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Peter H. Egger
Andrea Lassmann

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Abstract

Gravity models of international trade have been frequently applied to estimate the impact of common (official or spoken) language on bilateral trade. This study provides a meta-analysis based on 701 language effects collected from 81 academic articles. On average, a common (official or spoken) language increases trade flows directly by 44%.

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Keywords: common language, gravity, international trade, trade costs.

Peter H. Egger
ETH Zurich
KOF Swiss Economic Institute
WEH D4
Weinbergstrasse 35
Switzerland – 8092 Zurich
egger@kof.ethz.ch

Andrea Lassmann
ETH Zurich
KOF Swiss Economic Institute
WEH D4
Weinbergstrasse 35
Switzerland – 8092 Zurich
lassmann@kof.ethz.ch

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1 Introduction

Gravity models of bilateral trade are widely used to estimate the effect of trade cost (e.g., geographical distance) or trade facilitation factors (e.g., common official language) on bilateral trade. These models usually take the generic cross-sectional form:

$$X_{ij} = e^{\lambda Lang_{ij}} e^{Rest_{ij}} u_{ij}$$

where X_{ij} measures bilateral exports or imports between countries i and j, $Lang_{ij}$ is a trade facilitation indicator variable which is unity in case that i and j share a common (official or spoken by large-enough a fraction of the population) language and zero else, λ is the direct semi-elasticity of trade with respect to a common language, $Rest_{ij}$ is a catch-all term consisting additively of (log) trade cost factors times their parameters and of exporter- and importer-specific factors of influence (such as GDP, price indices, etc.; see Anderson and van Wincoop, 2004), and u_{ij} is a disturbance term. While channels through which common language affects bilateral trade are well understood (see Melitz, 2008, Melitz and Toubal, 2011) and there is abundant evidence that having an official or speaking a common language increases bilateral trade between countries, there is enormous variability of λ in the literature.

This paper provides a meta-study about estimates $\hat{\lambda}$ based on 701 coefficients from 81 articles published in 24 refereed journals. The weighted average $\hat{\lambda}$ suggests a direct effect on bilateral trade flows of 44%. Meta-regressions suggest that the estimated direct effect of common language on bilateral trade is most sensitive to the sample period and control variables used.

2 The meta-analysis approach

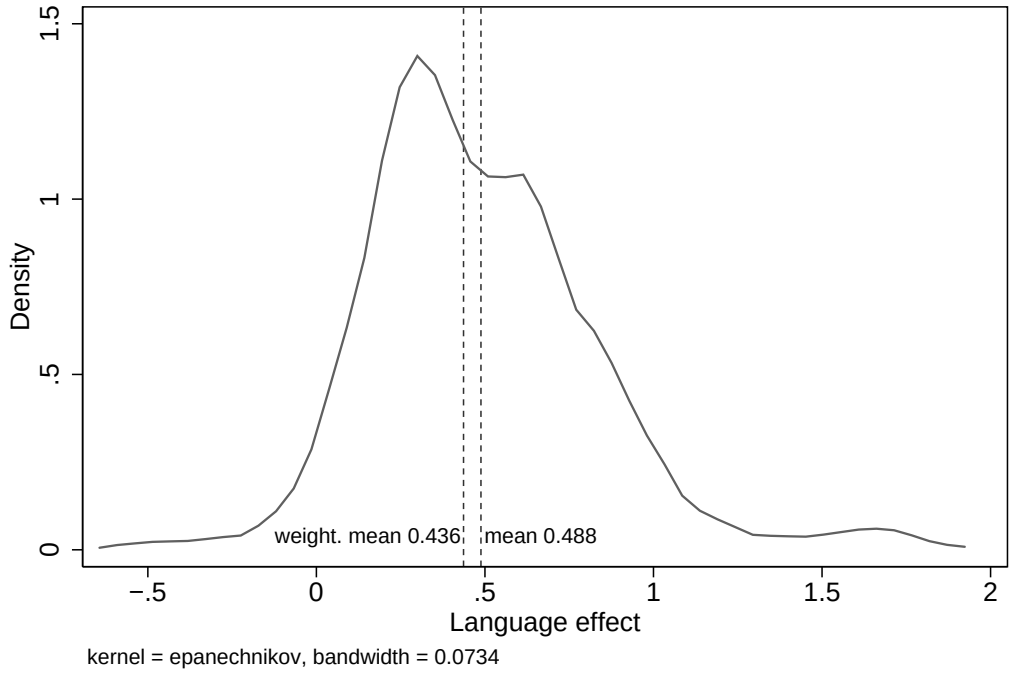
Meta-analysis and meta-regression are valuable to generalize results from a host of individual empirical studies (see Stanley, 2001, or Disdier and Head, 2008). Our data-set of 701 coefficients is mainly compiled from articles which were found by a systematic search in the *JSTOR* and *Science Direct* databases conducted on 17 October 2011. The utilized keywords were *gravity*, *trade*, and *language* in all articles published between 1970 and 2011. That search produced 149 matches and 223 matches in *JSTOR* and *Science Direct*, respectively. In addition to the articles found by the search algorithm, we included 13 (frequently cited) articles from an *IDEAS* search which were not identified by the algorithm in *JSTOR* and *Science Direct*. This resulted in a raw data-set of 385 studies. Then, we dropped studies and estimates of the following kind: (i) purely theoretical contributions; (ii) empirical

papers that did not control for language at all; (iii) papers that focused on trade in services rather than goods; (iv) estimates that focused on the extensive margin of trade; (v) two papers that controlled for several languages separately; (vi) one paper that coded $Lang_{ij}$ as one for English as the main language in a data-set including non-English speaking countries, and one paper that included English as the language dummy for a study on trade of India with its trading partners; (vii) estimates from studies with *direct communication* or *Toefl Scores* as measures for common language; (viii) estimates from regressions including variables that are supposed to measure the same thing, e.g., common spoken and common official language (in those cases, one of the coefficients usually carried a negative sign); (ix) one paper with estimates that interacted language with a preferential trade indicator; (x) one observation that was based on log bilateral exports as the dependent variable in poisson pseudo maximum likelihood estimation; (xi) estimates without reported standard errors or t-statistics (46 observations), two observations with standard errors of 23 and 66, and 3 observations with negative standard errors; (xii) and nine outlier observations with values for $\hat{\lambda}$ of -1.26, 2.296, 2.301, 2.317, 2.319, 3.27, 3.42, 5.02, and 30.69 (identified by the multivariate outlier approach of Hadi, 1994). We were then left with 701 coefficients and 81 studies (see Table A.1). Most studies in our sample relied on aggregate bilateral goods trade flows and OLS regression with a log-transformed version of equation (1), controlling for exporter and importer GDP, log distance, adjacency, and various forms of trade agreements.

In meta-regressions, we account for three main sources of heterogeneity of $\hat{\lambda}$ – structural heterogeneity, sampling heterogeneity, and method heterogeneity – by coding indicator variables as follows. Choice of the dependent variable: 1 if the dependent variable was not log bilateral trade (exports, imports, or the sum of the two) but a ratio or share (in a country's total trade or GDP) and 0 else. Zero bilateral trade flows: 1 if authors took into account zero bilateral trade flows and 0 else.[1] Endogeneity of GDP: 1 if a study or regression accounted for the possible endogeneity of GDP and 0 else. Choice of control variables: use four indicator variables which are 1 if common border, trade agreements between trading partners, colonial ties, and measures of remoteness were included (or were not relevant; log distance was included by all studies) and 0 else, respectively. Fixed effects: 1 if importer and exporter effects were introduced in cross-section equations, importer, exporter, and year fixed effects, or importer-year and exporter-year fixed effects in panel specifications, and 0 else. Sample period: use three indicator variables which are 1 if the sample period falls into the time span before 1948 (pre-General Agree-

[1]Earlier work suggested to use $ln(X_{ij}+1)$ in the presence of zero bilateral trade, while recent work proposed more appropriate methods such as poisson pseudo maximum likelihood (PPML), (see or Santos Silva and Tenreyro, 2006, Melitz and Toubal, 2011).

Figure 1: Estimated Density of 701 Language Coefficients $\hat{\lambda}_i$



ment on Tariffs and Trade, GATT), between 1948 and 1995 (GATT), and post 1995 (WTO) and 0 else. Level of aggregation: 1 if the authors used industry-level or Rauch-classification grouped data and 0 else. Sample composition: 1 if industrial countries are included and 0 else, 1 if developing countries are included and 0 else, or 1 if there is trade of only one country with several other ones and 0 else. Panel data: 1 if panel data were used and 0 else. Top-ranked journals: 1 if the paper was published in a top-ranked journal (4 points in the Keele journal ranking).[2] We also included the publication year to account for a possible trend in $\hat{\lambda}$.

3 Results: the estimated language effect

Figure 1 displays the distribution of all 701 estimated language coefficients $\hat{\lambda}_i$, $i = 1, \ldots, 701$ included in the meta-regression. They range from -0.57 to 1.85. The average $\hat{\lambda}_i$ in the full sample is 0.49 and the standard deviation is 0.34 (see Table 1). The average $\hat{\lambda}_i$ weighted by the inverse of its corresponding standard error (see

[2] 22 journals out of 442 in economics are rated at 4 points. See `http://www.keele.ac.uk/cer/resources_journals.htm`.

Table 1: Descriptive Statistics

	Number of Coefficients	Mean	Weighted mean (1/s.e.)	Weighted mean (1/R-squ.)	Standard deviation
Full data set	701	0.488	0.436	0.481	0.337
Significant data	588	0.550	0.465	0.527	0.312
Language dummy	642	0.482	0.435	0.473	0.326
OLS-based data	420	0.485	0.444	0.476	0.302
OLS-based & y=ln(trade)	372	0.474	0.439	0.458	0.297
Panel equation	425	0.474	0.419	0.454	0.322
Colony included	475	0.449	0.408	0.468	0.317
Full set of control variables	200	0.326	0.327	0.302	0.294
Full set of fixed effects	301	0.502	0.436	0.541	0.324
Data < 1948	27	0.299	0.186	0.286	0.351
Data 1948-1995	305	0.513	0.471	0.538	0.339
Data > 1995	90	0.557	0.583	0.560	0.298
Endogeneity of GDP	172	0.578	0.467	0.558	0.383
Zero trade	167	0.463	0.440	0.532	0.351
High-quality journal	150	0.456	0.380	0.365	0.408
Industry data	93	0.567	0.512	0.609	0.393
Industrial country data	79	0.684	0.538	0.629	0.390
Developing country data	30	0.461	0.572	0.584	0.271
Single country data	11	0.618	0.382	0.509	0.378

Saxonhouse, 1976) is 0.44. Its median is 0.43, the 5th and 95th percentiles are 0.05 and 1.03, respectively, and the interquartile range is 0.41 (not shown). Table 1 summarizes key statistics for different sample choices. We are mainly interested in the differences of the inverse standard error weighted averages among those samples. Table 1 shows that the weighted average $\hat{\lambda}_i$ became higher over time. It is higher when using OLS or when endogeneity of GDP and zero trade are taken into account. It is also higher for disaggregated data, for industrialized countries than on average and even higher for developing countries than in pooled data. It is lower in panel data studies, in single country studies, in studies which were published in top-ranked journals, and if more trade cost control variables were included. The latter points to some confounding effects of omitted cultural variables on the effect of common language on trade. We calculate an alternative mean weighted by the R-squared of the corresponding regression shown in Table 1, rather than choosing one estimate per paper based on, e.g., the R-squared of the regressions as suggested in the literature in order to account for publication bias (see Card and Krueger, 1995). It is 0.48 in the full sample and reveals a rather similar pattern compared to the standard-error weighted mean.

We may decompose the variance of $\hat{\lambda}_i$ in a more systematic way than in Table 1 by way of meta-regressions as summarized in Table 2. Due to the expected dependence of observations within papers (through the use of common samples, methods, and specifications, etc.), we estimate models with study-specific random effects – Columns (1)-(3) – or clustered standard errors – Columns (4)-(6). We weight the variables by the inverse of the estimated standard errors as suggested by Saxon-

house, 1976 throughout. Columns (1) and (4) of Table 2 refer to the full sample, Columns (2) and (5) to the sub-sample of significant coefficients, and Columns (3) and (6) to the sub-sample of OLS-based coefficients, respectively.

Across the board, the meta-regressions suggest that $\hat{\lambda}_i$ is lower in studies which included control variables measuring cultural proximity (e.g., colonial ties). Aligned with Disdier and Head, 2008 – who found that the distance effect in gravity models increases over time (consistent with economic theory as outlined in Egger, 2008) – we find an increasing language effect on trade over time. Panel specifications produce higher language effects. In addition, $\hat{\lambda}_i$ is lower in developing-country samples if estimation is based on OLS. The results from the random effects regressions in Columns (1)-(3) suggest that $\hat{\lambda}_i$ is lower in studies that control for common borders, that use trade ratios as the dependent variable, and are published in high-quality journals. The estimates $\hat{\lambda}_i$ are higher in studies that treat GDP as endogenous and control for remoteness. The publication year time trend is significant but close to zero. The OLS models with clustered standard errors show that common border and endogeneity of GDP only remain significant in the sub-samples of Columns (5) and (6), respectively.

Overall, a substantial part of the variability of $\hat{\lambda}_i$ in the covered literature is unexplained by the models in Columns (1)-(6). An important reason for this may be the varying meaning of common official language and common spoken language across countries and country-pairs (see Melitz and Toubal, 2011).

Table 2: Metaregressions of Language Coefficients

	Random effects			Clustered standard errors		
	(1)	(2)	(3)	(4)	(5)	(6)
	Full data	Significant coefficients	OLS-based coefficients	Full data	Significant coefficients	OLS-based coefficients
Trade ratio	-0.082	-0.138**	-0.125*	-0.052	-0.066	-0.136
	(0.057)	(0.054)	(0.067)	(0.127)	(0.130)	(0.120)
Zero trade	-0.038	-0.028	-0.004	-0.019	-0.033	-0.074
	(0.101)	(0.107)	(0.050)	(0.068)	(0.069)	(0.077)
GDP endogeneity	0.096*	0.091*	0.177**	0.055	0.046	0.177**
	(0.050)	(0.049)	(0.069)	(0.053)	(0.051)	(0.075)
Adjacency	-0.224**	-0.212***	-0.091	-0.159	-0.193**	-0.113
	(0.088)	(0.079)	(0.107)	(0.098)	(0.092)	(0.118)
Trade agreement	0.075	0.034	0.143	0.037	0.009	0.030
	(0.070)	(0.070)	(0.087)	(0.070)	(0.072)	(0.087)
Colonial ties	-0.272***	-0.272***	-0.350***	-0.237***	-0.246***	-0.304***
	(0.057)	(0.056)	(0.076)	(0.040)	(0.035)	(0.056)
Remoteness	0.112***	0.093**	0.074	0.032	0.058	-0.028
	(0.042)	(0.045)	(0.050)	(0.045)	(0.040)	(0.044)
Fixed effects	0.023	0.007	-0.005	-0.001	0.001	-0.050
	(0.034)	(0.039)	(0.025)	(0.038)	(0.036)	(0.045)
Pre-1948 data	-0.468***	-0.336***	-0.492***	-0.395***	-0.318***	-0.510***
	(0.107)	(0.084)	(0.105)	(0.081)	(0.081)	(0.100)
1948-1995 data	0.143***	0.146***	0.093**	0.166***	0.181***	0.161**
	(0.042)	(0.044)	(0.040)	(0.057)	(0.059)	(0.073)
Post-1948 data	0.225***	0.226***	0.225***	0.323***	0.347***	0.222***
	(0.068)	(0.068)	(0.058)	(0.071)	(0.066)	(0.084)
Disaggregated data	-0.079	-0.121*	-0.012	-0.055	-0.048	-0.113
	(0.062)	(0.066)	(0.096)	(0.087)	(0.083)	(0.114)
Industrial countries	-0.096	-0.111	-0.037	-0.015	-0.058	-0.076
	(0.105)	(0.099)	(0.122)	(0.091)	(0.093)	(0.114)
Developing countries	0.006	0.004	-0.230***	0.067	0.051	-0.207***
	(0.143)	(0.144)	(0.044)	(0.155)	(0.159)	(0.058)
Single country	0.003	-0.025	0.096	-0.066	-0.120	-0.082
	(0.094)	(0.092)	(0.152)	(0.097)	(0.090)	(0.115)
Panel	0.083	0.078	0.154***	0.109*	0.101*	0.081
	(0.066)	(0.066)	(0.056)	(0.058)	(0.055)	(0.073)
High-quality journal	-0.194**	-0.175**	-0.193**	-0.103	-0.057	-0.092
	(0.079)	(0.074)	(0.092)	(0.091)	(0.070)	(0.088)
Publication Year	2.959e-04***	3.142e-04***	1.691e-04**	0.001	0.004	0.007
	(0.000)	(0.000)	(0.000)	(0.008)	(0.008)	(0.008)
Observations	701	588	420	701	588	420
Number of clusters	78	76	61	78	76	61
Between/R-squared	0.79	0.79	0.81	0.54	0.53	0.24

Random-effects regressions with robust standard errors in parentheses (*p<0.10, **p<0.05, ***p<0.01) in (1)-(3), WLS regressions with paper-clustered standard errors in (4)-(6). Intercept not reported. Dependent variable: estimated language coefficients weighted by standard error.

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Appendix

In Table A.1, we provide a full list of all 81 articles the 701 parameters underlying the meta-analysis in this paper are collected from.

Table A.1: List of All Papers Covered After Dropping Irrelevant Ones

#	Authors	Year	Article title	Journal
1	Amiti, Mary and Katharine Wakelin	2003	Investment liberalization and international trade	Journal of International Economics
2	Anderson, James E. and Douglas Marcouiller	2002	Insecurity and the Pattern of Trade: An Empirical Investigation	Review of Economics and Statistics
3	Aviat, Antonin and Nicolas Coeurdacier	2007	The geography of trade in goods and asset holdings	Journal of International Economics
4	Baier, Scott L., Jeffrey H. Bergstrand	2007	Do free trade agreements actually increase members' international trade?	Journal of International Economics
5	Barro, Robert and Silvana Tenreyro	2007	Economic Effects of Currency Unions	Economic Inquiry
6	Berger, Helge and Volker Nitsch	2008	Zooming out: The trade effect of the euro in historical perspective	Journal of International Money and Finance
7	Bergstrand, Jeffrey and Peter Egger	2007	A knowledge-and-physical-capital model of international trade flows, foreign direct investment, and multinational enterprises	Journal of International Economics
8	Brouwer, Jelle, Richard Paap and Jean-Marie Viaene	2008	The trade and FDI effects of EMU enlargement	Journal of International Money and Finance
9	Brown John C.	1995	Imperfect Competition and Anglo-German Trade Rivalry: Markets for Cotton Textiles before 1914	Journal of Economic History
10	Chang, Pao-Li and Myoung-Jae Lee	2011	The WTO trade effect	Journal of International Economics
11	Calderon, Cesar, Alberto Chong and Ernesto Stein	2007	Trade intensity and business cycle synchronization: are developing countries any different?	Journal of International Economics
12	Chor, Davin	2010	Unpacking sources of comparative advantage: A quantitative approach	Journal of International Economics
13	Clark, Ximena, David Dollar and Alejandro Micco	2004	Port efficiency, maritime transport costs, and bilateral trade	Journal of Development Economics
14	Crozet, Matthieu and Pamina Koenig	2010	Structural gravity equations with intensive and extensive margins	Canadian Journal of Economics
15	Eaton, Jonathan and Sam Kortum	2002	Technology, Geography and Trade	Econometrica
16	Eaton, Jonathan and Samuel Kortum	2001	Trade in capital goods	European Economic Review
17	Egger, Peter	2002	An Econometric View on the Estimation of Gravity Models and the Calculation of Trade Potentials.	The World Economy
18	Egger, Peter and Mario Larch	2011	An assessment of the European agreements' effects on bilateral trade, GDP and welfare	European Economic Review
19	Egger, Peter, Mario Larch, Kevin Staub und Rainer Winkelmann	2011	The Trade Effects of Endogenous Preferential Trade Agreements	American Economic Journal: Economic Policy
20	Evans, Carolyn L.	2003	The Economic Significance of National Border Effects	American Economic Review
21	Fally, Thibault, Rodrigo Paillacar and Cristina Terra	2010	Economic geography and wages in Brazil: Evidence from micro-data	Journal of Development Economics
22	Feenstra, Robert C., James R. Markusen, Andrew K. Rose	2001	Using the Gravity Equation to Differentiate among Alternative Theories of Trade	Canadian Journal of Economics
23	Felbermayr, Gabriel and Benjamin Jung	2009	The pro-trade effect of the brain drain: Sorting out confounding factors	Economics Letters
24	Felbermayr, Gabriel and Farid Toubal	2010	Cultural proximity and trade	European Economic Review
25	Fielding, David and Kalvinder Shields	2005	The Impact of Monetary Union on Macroeconomic Integration: Evidence from West Africa	Economica
26	Fink, Carsten, Aaditya Mattoo and Ileana Cristina Neagu	2005	Assessing the impact of communication costs on international trade	Journal of International Economics
27	Frankel, Jeffrey A. and Andrew K. Rose	1998	The Endogeneity of the Optimum Currency Area Criteria	Economic Journal
28	Frankel, Jeffrey A. and Andrew K. Rose	2002	An Estimate Of The Effect Of Common Currencies On Trade And Income	Quarterly Journal of Economics
29	Fratianni, Michele and Heejoon Kang	2006	Heterogeneous distance–elasticities in trade gravity models	Economics Letters
30	Freund, Caroline L. and Diana Weinhold	2004	The effect of the Internet on international trade	Journal of International Economics
31	Geraci, Vincent J. and Wilfried Prewo	1977	Bilateral Trade Flows and Transport Costs	Review of Economics and Statistics
32	Ghosh, Sucharita and Steven Yamarik	2004	Are regional trading arrangements trade creating? An application of extreme bounds analysis	Journal of International Economics
33	Ghosh, Sucharita and Steven Yamarik	2004	Does trade creation measure up? A reexamination of the effects of regional trading agreements	Economics Letters
34	Gil-Pareja, Salvador, Rafael Llorca-Vivero and Jose Antonio Martinez-Serrano	2007	Did the European exchange-rate mechanism contribute to the integration of peripheral countries?	Economics Letters
35	Gil-Pareja, Salvador, Rafael Llorca-Vivero and Jose Antonio Martinez-Serrano	2008	Trade effects of monetary agreements: Evidence for OECD countries	European Economics Review
36	Glick, Reuven and Andrew K. Rose	2002	Does a currency union affect trade? The time-series evidence	European Economic Review
37	Hayakawa, Kazunobu	2011	Measuring fixed costs for firms' use of a free trade agreement: Threshold regression approach	Economics Letters
38	Head, Keith and Thierry Mayer	2004	Market Potential and the Location of Japanese Investment in the European Union	Review of Economics and Statistics
39	Head, Keith, Thierry Mayer and John Ries	2010	The erosion of colonial trade linkages after independence	Journal of International Economics
40	Helpman, Elhanan, Marc Melitz and Yona Rubinstein	2008	Estimating Trade Flows: Trading Partners and Trading Volumes	Quarterly Journal of Economics
41	Herander, Mark G. and Luz A. Saavedra	2005	Exports and the Structure of Immigrant-Based Networks: The Role of Geographic Proximity	Review of Economics and Statistics
42	Imbs, Jean	2004	Trade, Finance, Specialization, and Synchronization	Review of Economics and Statistics
43	Iwanow, Tomasz and Colin Kirkpatrick	2008	Trade Facilitation and Manufactured Exports: Is Africa Different?	World Development
44	Jacks, David S, Christoph M. Meissner and Dennis Novy	2011	Trade booms, trade busts, and trade costs	Journal of International Economics
45	Klein, Michael	2005	Dollarization and trade	Journal of International Money and Finance
46	Klein, Michael W. and Jay C. Shambaugh	2006	Fixed exchange rates and trade	Journal of International Economics
47	Ku, Hyejin and Assaf Zussman	2010	Lingua franca: The role of English in international trade	Journal of Economic Behavior & Organization
48	Liu, Xuepeng	2009	GATT/WTO Promotes Trade Strongly: Sample Selection and Model Specification.	Review of International Economics
49	Lohmann, Johannes	2011	Do language barriers affect trade?	Economics Letters
50	López-Córdova, J. Ernesto and Christopher M. Meissner	2003	Exchange-Rate Regimes and International Trade: Evidence from the Classical Gold Standard Era	American Economic Review
51	Magee, Christopher S.P.	2008	New measures of trade creation and trade diversion	Journal of International Economics
52	Martin, Philippe, Thierry Mayer and Mathias Thoenig	2008	Make Trade Not War?	Review of Economic Studies
53	Melitz, Jacques	2006	North, South and distance in the gravity model	European Economic Review
54	Melitz, Jacques	2008	Language and Trade	European Economic Review
55	Mitchener, Kris James and Marc Weidenmier	2008	Trade and Empire	Economic Journal
56	Moehnius, Johannes and Daniel Berkowitz	2011	Law, trade, and development	Journal of Development Economics

57	Nitsch, Volker	2000 National Borders and International Trade: Evidence from the European Union	Canadian Journal of Economics
58	Nitsch, Volker	2007 Does the G7/G8 promote trade?	Economics Letters
59	Oh, Chang Hoon and W. Travis Selmier II	2008 Expanding international trade beyond the RTA border: The case of ASEAN's economic diplomacy	Economics Letters
60	Rauch, James E. and Vitor Trindade	2002 Ethnic Chinese Networks in International Trade	Review of Economics and Statistics
61	Rose, Andrew K.	2000 One money, one market: the effect of common currencies on trade	Economic Policy
62	Rose, Andrew K.	2001 Currency Unions and Trade: The Effect is Large	Economic Policy
63	Rose, Andrew K.	2004 Do We Really Know That the WTO Increases Trade?	American Economic Review
64	Rose, Andrew K.	2005 Which International Institutions Promote International Trade?	Review of International Economics
65	Rose, Andrew K.	2005 One reason countries pay their debts: renegotiation and international trade	Journal of Development Economics
66	Rose, Andrew K. and Eric van Wincoop	2001 National Money as a Barrier to International Trade: The Real Case for Currency Union	American Economic Review
67	Rose, Andrew K. and Charles Engel	2002 Currency Unions and International Integration	Journal of Money, Credit and Banking
68	Roy, Jayjit	2011 Is the WTO mystery really solved?	Economics Letters
69	Santos Silva, J. M. C. and Silvana Tenreyro	2006 The Log of Gravity	Review of Economics and Statistics
70	Serlenga, Laura and Yongcheol Shin	2007 Gravity Models of Intra-EU Trade: Application of the CCEP-HAT Estimation in Heterogenous Panels with Unobserved Common Time-Specific Factors	Journal of Applied Econometrics
71	Subramanian, Arvind and Shang-Jin Wei	2007 The WTO Promotes Trade, Strongly but Unevenly	Journal of International Economics
72	Stein, Ernesto and Christian Daude	2007 Longitude matters: Time zones and the location of foreign direct investment	Journal of International Economics
73	Tenreyro, Silvana	2007 On the trade impact of nominal exchange rate volatility	Journal of Development Economics
74	Thom, Rodney and Brendan Walsh	2002 The effect of a currency union on trade: Lessons from the Irish experience	European Economic Review
75	Turrini, Alessandro and Tanguy van Ypersele	2010 Traders, courts, and the border effect puzzle	Regional Science and Urban Economics
76	Vandenbusschem Hylke and MaurizioZanardi	2010 The chilling trade effects of antidumping proliferation	European Economic Review
77	Sebastien Wälti	2011 Stock market synchronization and monetary integration	Journal of International Money and Finance
78	Wei, Shang-Jin and Zhiwei Zhang	2010 Do external interventions work? The case of trade reform conditions in IMF supported programs	Journal of Development Economics
79	Wei, Shang-Jin and Zhiwei Zhang	2007 Collateral damage: Exchange controls and international trade	Journal of International Money and Finance
80	Wong, WeiKang	2006 Comparing the fit of the gravity model for different cross-border flows	Economics Letters
81	Yeyati, Eduardo Levy	2003 On the impact of a common currency on bilateral trade	Economics Letters