

International Trade and the Propagation of Merger Waves^{*}

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We map the yearly global trade network and compare it to cross-border and domestic merger activity. Trade-weighted merger activity in trading partner countries has significant explanatory power for the likelihood a country will be in a merger wave state, both at the cross-border and the domestic levels, even controlling for its own lagged merger activity. The strength of trade as a channel for transmitting merger waves varies over time and is affected by import tariffs cuts, Euro, EU, EEA, and WTO entry. Overall, the full trade network increases our understanding of how merger waves form and propagate across borders.

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1. Introduction

Recent contributions in the mergers and acquisition literature have begun to explore the rich panel of international data. Earlier papers studying cross-border acquisitions like Rossi and Volpin (2004) have been joined by Erel, Liao and Weisbach (2012) and Makaew (2012), who attempt to better understand the dynamics of cross-border acquisitions. Erel, et al. (2012) and Makaew (2012) both find broad support for neo-classical explanations that highly productive firms will buy less productive firms and that the data reveal the potential for financial conditions such as local stock market conditions or exchange rate differences to increase merger activity. They also find support for gravity-model explanations for activity based on geographic proximity, total trade and culture. Ahern, Daminelli and Fracassi (2015) demonstrate the role of culture in explaining who merges with whom. At the same time, other studies such as Ahern and Harford (2014) have examined how the network of specific industry-level trade relationships helps explain domestic U.S. acquisition activity. In this paper, we apply the network techniques of that study to international data in order to answer the question of how merger activity transmits across countries through trade links.

Specifically, we use country and industry-level import and export data from 1989 to 2016 to build a network representation of global trade flows. We then compare and combine this network with all domestic and cross-border mergers over the same period from the Thomson Financial SDC dataset. As expected, there is substantial correlation between the trade network and cross-border activity, confirming prior results based on bilateral flows and gravity models. Correlated cross-border activity also strongly predicts domestic merger activity, emphasizing the economic importance of the phenomenon. We further show that the most central countries in the trade network significantly overlap with the most central countries in the merger network. The few countries such as China and Russia that are relatively central in the trade network, but not in the merger network, tend to have significant barriers to foreign direct investment and/or poor legal development. A comparison of the structure of the trade and merger

networks between the years 1989, 2000 and 2016 also reveals fundamental changes, in particular a strong densification trend of both networks through time.

After establishing the overall concordance between the two networks, we turn to understanding the dynamics of how merger activity spreads around the world. If exports reduce the need to acquire foreign production, then trade would substitute for direct investment through acquisitions, and the effect would be negative. Alternatively, if trade activity facilitates merger activity or provides an economic link causing merger activity in one country to affect mergers in another, we will find a positive, complementary effect. One channel of the mechanism that we explore is well illustrated by the case of Cisco. This archetypal multiple acquirer (217 M&A transactions over the 1989 to 2017 period according to the Thomson Financial SDC Database) started undertaking cross-border transactions in 1996 with the acquisition of Metaplex, an Australian firm. Over the whole 1989 to 2017 period, out of 217 transactions, Cisco went abroad 37 times. We collected Cisco exports in the Compustat segment database to put them in relation with Cisco cross-border acquisitions. These are reported only until 1997 due to a change in reporting format in 1998. Subfigure A of Figure 1 reports the evolution of Cisco exports through time for this subperiod. Subfigure B of Figure 1 displays the corresponding partition through time of the domestic and cross-borders transactions. The correlation with end of the nineties U.S. M&A waves is clearly apparent as well as the correlation between Cisco domestic and cross-border activities. Putting in relation Cisco exports and cross-border M&A activities suggests that after a period of developing exports that started in the beginning of the nineties, Cisco began to develop its M&A activities abroad, likely facilitated by knowledge gathered through foreign activities and motivated by increased foreign economic exposure. In describing Cisco's long-time acquisition strategy, its CEO stated that it often looks to seize opportunities in new markets (Palmer, 2017).

This is the sort of dynamic relation that we want to identify. To do so, we build year-by-year measures of the intensity of merger and acquisition (M&A) activity in a given country or country-industry, both at the cross-border and the domestic levels. We then test whether we can explain when a

subject country or country-industry engages in high merger activity using the trade network-weighted intensity of connected countries' merger activity. We show that, controlling for other factors, the intensity of M&A activity in countries that have significant trade with the subject country strongly and positively explains merger activity in the subject country. Further, this holds when we repeat this at the country-industry level rather than the country-level. For example, consolidation in an industry in the U.S. will generate follow-on activity involving a trade partner industry in Germany. This adds to the forces explaining merger activity as well as providing an explanation for why merger waves are correlated across countries, creating global merger waves. Merger activity along trade relationships transmits to both further cross-border mergers as well as purely domestic mergers, emphasizing the economic importance of these interactions.

In the next part of our study, in an effort to identify causal relations, we ask how shocks to trade relationships affect real cross-border investment in the form of mergers and acquisitions. Our sample period spans many major tariff cuts, a substantial source of increase in global trade, and the admission to membership in the Euro zone, European Union (EU), European Economic Area (EEA) and World Trade Organization (WTO) for many countries. We find that broad import tariff cuts strongly amplify effects of trade-weighted M&A intensity in connected countries on cross-border merger activity in the subject country under consideration. Euro adoption as well as EU and EEA accessions lead to the same conclusions, as is the case also for countries joining the WTO. Each shock has its own accompanying regulatory, legal and fiscal changes but, in most cases, either they are unrelated with M&A activity or, compared with the importance of the trade shocks under examination, they act as a source of noise, reducing the precision of our estimates, but without affecting our causal inference. Regardless, the accumulation of consistent results over these five quasi-experiments, reinforces our causal interpretation, as it is unlikely that the same omitted variable plays a role in each case.

For example, after entering the Euro zone, the marginal impact of an increase in connected countries' trade-weighted M&A intensity on a subject country's probability to shift into a high cross-

border M&A state is increased by 68% (when using the number of M&A transaction as the measure of M&A intensity). Similarly, when a subject country enters into the WTO, its cross-border merger activity becomes much more sensitive to activity in countries it trades with (the marginal impact of a change in the connected countries' trade-weighted M&A intensity is seven times greater).

The time variation in the trade and merger network structures suggests that our results may themselves change in intensity through time. We explore this issue first by identifying periods containing a global merger wave (1989, 1995-2001, 2004-2008 and 2014-2015) and replicating our multivariate analyses in and out of periods with a wave. The spillover of merger activity through trade relations is due to periods with waves.

To establish the importance of the trade network as a mechanism for propagation of merger activity, we implement a placebo test. Specifically, we randomly shuffle the trade links and repeat our estimation. With the randomly-assigned trade-activity weights, trade-weighted merger activity in one country has no predictive power for merger activity in another. We also control for geographic and cultural proximity, which could drive both trade and mergers, as well as stock market valuation differences. Our inferences are unchanged. We also confirm that our country industry-level analyses hold in the subsample of manufacturing industries only, as raw material, food, and other comparable industries are potentially less prone to be related to merger activity.

We present a set of additional analyses at the country-pair level. We start by exploring whether trade relations and location in the trade network help to predict future cross-border M&A activity. Our results highlight that the lagged subject's imports from a connected country are a strong predictor of cross-border M&A volume of the subject country with the connected country, both inbound (the acquirer is from the connected country) and outbound (the acquirer is from the subject country) merger activity. Moreover, location in the network (the subject's centrality) strengthens this predictive power. These findings hold true even after controlling for country-pair fixed effects and a set of time-varying country characteristics. We then complement this investigation by a Granger causality test to determine whether it

is really trade flows that drive merger activity and not the reverse. The Granger causality test provides clear support to this interpretation.

Our study makes several contributions. First, we contribute to the broad literature on the causes and consequences of mergers and acquisitions. Much of this research has focused on explaining the motivations behind individual mergers (see Betton et al., 2008, for an extensive review) and their value implications. More closely related to our work, some authors have studied the timing of merger activity, whether at the industry or aggregate level, and its tendency to cluster in so-called “waves.” Beginning with Mitchell and Mulherin (1996), and continuing with the work of Shleifer and Vishny (2003), Rhodes-Kropf, Robinson and Viswanathan (2005), Harford (2005), and Ahern and Harford (2014), a stream of papers have added to our understanding of the forces that cause a merger wave to continue and then to propagate through the economy along industry connections. We extend this literature by establishing how merger waves propagate across borders and by estimating how much of a given country and industry’s merger activity can be explained by M&A intensity in trade partners.

Second, there is a deep literature studying foreign direct investment. Many of these papers make use of gravity models which relate the amount of investment between two countries to the economic size of the two countries and measures of distance, which can be geographical, cultural or otherwise (e.g. Portes and Rey (2004), Chan, Covrig and Ng (2005), di Giovanni (2005), Siegel, Litch and Schwartz (2011)). We add to this literature by incorporating network-level information into our models to explain mergers and acquisitions as one important form of FDI. Specifically, we use a country or country-industry’s centrality in our models. Further, by using all of the connections in a trade-weighted approach, we are effectively accounting for all of the potential sources of gravity, rather than evaluating effects in a pair-by-pair setting.

Overall, our work furthers our understanding of how merger activity spreads globally along trade lines. In particular, assuming a long-term trend toward increased connectivity through trade, the trade

network will become increasingly dense. Our results suggest that this will lead to a larger portion of a given country-industry's merger activity being influenced by merger activity in other countries.

2. Data

We employ two primary datasets: one covering trade data and another covering mergers. The trade data come from the UN ComTrade database, which provides data on imports and exports for different commodity classifications BEC (Broad Economic Categories), HS (Harmonized System) and SITC (Standard Industrial Trade Classification)). The data starts from as far back as 1962 depending on the commodity classification. Since our analysis is based on country level and industry level, for consistency purposes, we choose SITC Rev.3 (revision 3) commodity classification for both country and industry levels. This allows us to convert SITC Rev.3 into ISIC Rev.3 (revision 3 of international standard industrial classification)¹. The data on SITC Rev.3 starts in 1988. One limitation of the ComTrade database is that imports/exports data do not start for all countries from 1988 and countries join the list along the years. The most notable examples are United States and Germany for which the data is available from 1989 and 1991 respectively. We decide therefore to choose 1989 as the starting year of our analysis period. We have imports and exports between 100 countries from 1989 to 2016 and we are able to exclude re-imports and re-exports. We have the data at both the country level and the industry level. Panel A of Table 1 describes the trade data.

The international trade network contains very few missing edges; within the top 100 countries, there are very few pairs of countries with literally no trade between them. The mean percentage of imports or exports for a country-pair is about 1.2%, and among country-pairs accounting for at least 1% of one of the partners' trade, the amount is around 5%.

¹ Data on mergers and acquisitions reported in SDC are identified as US standard industrial classification (SIC) 1987 and no direct correspondence is available between SITC and SIC codes. However, we can convert SITC Rev.3 and US SIC 1987 to common ISIC Rev.3. The European Commission provides the correspondence table between SITC Rev.3 and ISIC Rev.3, and US SIC 1987 and ISIC Rev.3. The correspondence tables are extracted directly from the European Commission website.

Our merger data come from Thomson Financial's SDC dataset. We start with all cross-border mergers between the 100 UN ComTrade countries from 1989 to 2016. A country must have at least 1 cross-border merger per year or 28 cross-border mergers over the span of 28 years. We include deals classified as 'Completed' and 'Withdrawn' where the acquirer and target status is public, private or subsidiary. We exclude transactions where the transaction value is missing. We also exclude acquisitions of partial interest, buybacks, recapitalizations, and exchange offers. These filters yield a sample of 49,905 cross-border transactions worth \$16.710 trillion and 174,899 domestic transactions worth \$41.549 trillion across 74 countries. We present summary statistics for the merger dataset in Panel B of Table 1 and graph them in Figure 2.

The graph shows the familiar merger waves of the 1990s and 2000s and establishes that the well-studied U.S. merger waves coincide with those of the rest-of-the-world. Panel B of Table 1 summarizes the pairwise connections in the panel. The cross-border merger network is considerably sparser than the trade network. In fact, 62% of country-pairs have no recorded mergers between them. The average pairwise merger activity is 9 transactions worth \$3.1 billion. As is to be expected in the context of mergers and a sparse network, the data are skewed, with the 95th percentile of pairs having 29 mergers and the maximum being 2,968 (Canadian acquisitions in the United States), followed by 2,576 (United Kingdom acquisitions in United States, unreported). Panel B of Table 1 also reports corresponding figures for cross-border and domestic mergers. As expected, domestic mergers represent the largest portion of the merger market activity with 174,899 transactions in our sample but the share of cross-border mergers is sizeable (49,905 transactions).

We collect additional information needed for control variables in the DataStream database (for currency exchange rates), in the ICRG Political Risk Guide for investment profile and quality of institutions, from the World Bank for indicators such gross domestic product (GDP) and import tariffs, the European Commission website for EU and EURO zone entries and from the World Trade Organization (WTO) website for WTO accession years.

3. The Trade and Merger Networks

Part of our contribution is descriptive: documenting the global trade and merger networks over time. To do so, we use network visualization software (Gephi) to create figures representing snapshots of the networks at various points during our sample period.

3.1 The Trade Network over Time

We begin with a discussion of the trade network. Figure 3, subfigures A through C show the export network based on dollar value of exports in 1989, 2002 and 2016, respectively. The corresponding subfigures A through C of Figure 4 restrict the analysis to the 15 most active countries (we provide these country lists in Appendix 1). In these network representations, circle sizes (nodes) are proportional to the degree of centrality of countries and connection (edge) thicknesses are a function of the intensity of exports between the countries (the nodes). Comparing across the subfigures of Figure 3, it is clear that the trade network has become denser over time with a greater value of goods flowing through it. While many of the same countries remain the largest nodes in the network, the relative size of the next two tiers increases as more countries develop and increase their trade with the rest of the world. While we do not show it here, similar inferences can be drawn from the import network.

The number of nodes and density of the network makes it hard to see the emergence of some countries, so in Figure 4 we include only the 15 most active countries. Focusing on these countries reveals interesting insights. In 1989, exports between USA, Japan and Canada are clearly driving world trade flows. In 2002, probably as a consequence of the NAFTA agreement activation from 1994, export flows between USA, Canada and Mexico dominate the network. Japan is still strongly connected to USA but not significantly more than Mexico. Concerning European countries, France and Germany interactions are dominant (recall that Germany is not in the 1989 UN ComTrade database, explaining its absence from Figure 4, Subfigure A). The rise of China is clearly evident in Subfigure C of Figure 4 (year 2016), with

dominant connections with USA and Hong Kong. NAFTA is still clearly visible. The shift of Japan toward China also stands out.

3.2 The Merger Network over Time

Figure 5, Subfigures A through C present the visualizations of the merger network, using the same conventions (size of nodes proportional to degree of centrality and thickness of edges proportional to activity). Again, one can see the increasing density of the cross-border merger network through time. While the U.S. and Great Britain remain the largest nodes, the relative size of other countries increases over time, just as in the trade network. In comparison with the trade network visualization provided in Figure 3, the sparsity of the merger network is also clearly apparent, meaning that there are many more pairs of countries with no merger activity than there are pairs with no trade.

In the remaining sections, we compare the sample-long networks of merger and trade activity. We also use the year-by-year trade network centrality measures to explain the dynamics of merger activity around the world.

3.3 Comparing the Networks

Figures 3, 4 and 5 allow one to visually compare the networks and draw conclusions about their similarities. In Panel A of Table 2, we list the 15 most central countries in the import, export and merger networks. It is immediately clear that many countries appear on all three lists. We note that the countries appearing on the import or export lists but not appearing (or appearing in the last positions) on the mergers list tend to have barriers to FDI or poor legal development (e.g. Russia and China)². In Appendix 1 we provide the corresponding lists for years 1989, 2002 and 2016 because Figures 3, 4 and 5 highlight how

² The Heritage Foundation ranks Russia and China 144 and 153 respectively among 186 countries around the world on their economic freedom index in 2016. The economic freedom index comprises of four sub-components (1) Rule of Law (property rights, freedom from corruption); (2) Limited Government (fiscal freedom, government spending); (3) Regulatory Efficiency (business freedom, labor freedom, monetary freedom); and (4) Open Markets (trade freedom, investment freedom, financial freedom). For more details on the subcomponents, see <http://www.heritage.org/index/about>

the trade and merger networks change through time. Noteworthy in the export lists is the rise of China, which ranks number one in 2016, ahead of the United States. China's rise goes hand-in-hand with the global rise of Asiatic countries. In the 2016 top-15 countries list, Japan, South Korea, Hong Kong and Singapore appear in addition to China, accounting for one third of the list. The import lists also show the rise of China (from absence in 1989 to second in 2016). Another noteworthy fact is the appearance of India in the 2016 import list (ranked fourteenth), another sign of the changing structure of Asiatic country economies. The merger lists confirm the steady, if unsurprising, central role of the United States and the United Kingdom in cross-border activities. Maybe more unexpected is the rise of Hong Kong, from absence in 1989 to the seventh spot in 2016 (down from fourth in 2002), probably by acting as an entry to Asiatic countries (the main destination country of cross-border acquisitions from Hong Kong is China, by far).

We formally compare the three networks by computing the correlation of the centralities of countries in each network and present the results in Panel B of Table 2. For this exercise, we consider both degree and eigenvector centrality. The centralities of countries in the import and export network are extremely highly correlated (> 0.94). When comparing the import or export networks with the merger networks, we see that while far from the near perfect correlation between the trade networks, the correlations are still quite high, ranging from 0.43 to 0.60. These formal correlations serve to confirm what can be seen informally in the figures and in Panel A of Table 2. They also suggest that trade does not significantly substitute for direct investment through acquisition and preview our finding that trade channels actually complement acquisition activity by transmitting it across countries.

4. The Propagation of Merger Activity through the Trade Network

4.1 Country-level merger activity

Our primary empirical tests are designed to establish the degree to which merger activity in separate countries propagates along trade links. Our independent variable of interest, *Connected M&A*, is

the trade-weighted merger activity in connected countries. We use information from the entire network of trade data, weighting merger activity in each country (the nodes) by the amount of trade they do with the subject country (their edges connecting them to the subject country). *Connected M&A* is therefore computed as:

$$\text{Connected } M\&A_{i,t} = \sum_{j \neq i} W_{i,j,t} \times M\&A_{j,t} \quad (1)$$

where i and j are subject and connected country respectively, t is the year, $W_{i,j,t}$ is a weighting term based on trade flows between i and j at year t and $M\&A_{j,t}$ is the measure of M&A intensity in country j and year t (either count based or value based, depending on the weighting scheme adopted to compute the dependent variable³). For each country j and at each time period t , four *Connected M&A* variables can be computed, depending on the trade flows used to compute $W_{i,j,t}$:

- Subject (i) Imports from Connected (j): $W_{i,j,t}$ is the percentage of country i 's imports that come from country j ;
- Connected (j) Imports from Subject (i): $W_{i,j,t}$ is the percentage of country j 's imports that come from country i ;
- Subject (i) Exports to Connected (j): $W_{i,j,t}$ is the percentage country i 's exports that go to country j ;
- Connected (j) Exports to Subject (i): $W_{i,j,t}$ is the percentage of country j 's exports that go to country i .

Because the *Connected M&A* variables display strong right skewness, a consequence of the relative sparsity of the merger network (see Panel B of Table 1), we winsorize them at 5% in the right tail.

³ We have re-estimated everything after removing cross-border M&A transactions between the subject country i and the connected country j when computing Connected M&A variable. Our results are unaffected.

Using *Connected M&A*, we study the probability that a given country i will be in *High M&A State* in year t , defined as the country's merger activity (the number or the dollar value of merger transactions) being in the highest quartile of all values for that country over the sample period in the year under consideration (as we discuss in Section 4.7, our inferences are unchanged if we detrend merger activity first)⁴. The *High M&A State* is computed for cross-border mergers and for domestic mergers separately. Our main specification also includes the eigenvector or degree centrality of the subject country in year t ($Centrality_{i,t}$), interactions between centrality and aggregate worldwide merger activity ($M&A\ Activity_t$), the lagged value of the dependent variable ($High\ M&A\ State_{i,t-1}$) to account explicitly for country-level merger waves, and a set of country-level time-varying control variables ($\mathbf{Controls}_{i,t}$).⁵ This leads to the following regression equation:

$$High\ M&A\ State_{i,t} = \alpha_i + \beta\ High\ M&A\ State_{i,t-1} + \gamma\ Connected\ M&A_{i,t} + \delta\ Centrality_{i,t} + \theta\ (Centrality_{i,t} \times M&A\ Activity_t) + \vartheta'\mathbf{Controls}_{i,t} + \varepsilon_{i,t} \quad (2)$$

Bold type face is used to indicate vectors. Because our data form a panel and all of our specifications include country fixed-effects (and standard errors are clustered at the country level), we use the least square dummy variable estimator. All specifications also include year fixed-effects⁶. Our primary

⁴ Angrist and Pischke (2009) Section 3.4.2 discusses the use of linear models with limited dependent variables. The authors show that as long as we are concerned with marginal effects, there is no clear benefit in using non-linear models such as probit or logit ones but that these non-linear specifications come along with more restrictive assumptions. Whether using linear or non-linear models, marginal effects can be interpreted as changes in the probability from switching from one state of the dependent variable to the other one.

⁵ Time-varying country level control variables include GDP, GDP Growth, GDP Per Capita, Investment Profile, Quality of Institutions and exchange rate based variables. Exchange rate based variables are computed similarly to *Connected M&A*, using exchange rates expressed as one subject currency unit in connected currency units and the same weighting scheme as *Connected M&A*. The *Connected Exchange Rate Growth* variable is the weighted average of the end-of-year to end-of-year relative change in the exchange rate and the *Connected Exchange Rate Volatility* is the corresponding standard deviation of the monthly exchange rates over a period of 36 months.

⁶ We investigate the robustness of our results using (1) a specification without the lagged value of the dependent variable that allows us to implement the Wooldridge (2010) test for strict exogeneity, as advised in Grieser and Hadlock (2018) and (2) the Arellano-Bond estimator for dynamic panel models. Results for the case of cross-border mergers analyses at the country level are reported in Internet Appendix. We obtain qualitatively similar results, losing statistical significance for the coefficient of the measure of trade-weighted M&A activity only in two specifications, with the Arellano-Bond estimator. The Wooldridge (2010) tests of strict exogeneity do not reject the null hypothesis of strict exogeneity at the usual level of statistical confidence. Residuals of the Arellano-Bond

empirical tests are designed to establish the degree to which cross-border and domestic merger activity in connected countries propagate along trade links.

The first set of results is presented in Table 3 where we report estimates of Equation (2) over the sample period using the number of M&A transactions as measure of M&A intensity and reporting estimates for cross-border mergers in Panel A and for domestic mergers in Panel B. Starting with Panel A, the results support our complements hypothesis: all measures of trade-weighted M&A activity load positively for explaining a High M&A State whether using degree centrality or eigenvector centrality to characterize the subject's position in the trade network. The effects are strongest (both in terms of coefficient values and statistical significance) for Subject Imports from Connected and Subject Exports to Connected. For example, a change from the 25th to 75th percentile of the Subject Imports (Exports) weighted merger activity increases the probability of a Subject High M&A State by more than 19% (15%). These variables are defined such that they are large when the subject country imports or exports a substantial portion of its total imports or exports to countries that are undergoing merger waves. Thus, they capture times when countries that are important to the subject country are undergoing substantial merger activity. The other two trade-weighted variables capture when the connected countries import or export a large portion of their total imports or exports from the subject country. Thus, they capture times when the subject country is important to the connected countries that are undergoing variation in merger activity, but not necessarily vice-versa. A 25th to 75th percentile change in the Connected-based M&A variables (columns 2 and 4), would result in a 7% to 8% increase in High Merger State likelihood for the Subject country.

Our specification controls for the lagged value of the cross-border M&A State variable, which also loads positively, a result confirming the presence of merger waves in international data (Makaew, 2012). The coefficients on the interactions between centrality measures and aggregate M&A activity are

estimators do not display statistically significant serial correlation. We also tested a specification without year fixed-effects and including additional annual control variables such as a World stock index. Results are unchanged, but the inclusion of year fixed-effects is our preferred approach because it absorbs all such variables.

positive and significant in 7 out of the 8 specifications. This means that countries that are more central in the overall global trade network are more likely to be undergoing cross-border merger waves when there is a global merger wave. This result is consistent with the findings in Ahern and Harford (2014), who show that aggregate merger waves in the U.S. coincide with high merger activity in the most central industries in the economy. They explain how once a shock causes merger activity in a central industry, it can quickly cause merger activity in many connected industries, creating an aggregate merger wave. The same mechanism appears to be at work at the international level.

Finally, the importance of trade connections for propagating merger waves is robust to changes in exchange rate growth, their volatility, to both time-varying and time-invariant country characteristics, such as the quality of financial institutions and GDP growth, the latter having a positive effect on cross-border merger activity on its own. Our country fixed-effects absorb time-invariant country characteristics and our year fixed-effects absorb shocks affecting the cross-section of countries in a given year.

In Panel B, we replicate the analysis using domestic mergers to compute the *High M&A State* dependent variable. Results are similar to the results obtained using cross-border mergers. Taking into account the importance of domestic mergers in overall merger activity, this emphasizes the economic importance of the results uncovered for cross-border mergers. Notably, it shows that purely domestic merger activity is, through trade relationships, substantially impacted by merger activity in other countries.

While we choose number of transactions as our measure of activity to establish the breadth of the effect, we replicate the analysis using value of transactions to compute the *High M&A State* dependent variable. The results, presented in the Internet Appendix, are qualitatively the same. Further, we replicate the Table 3 analysis using total merger activity (the sum of cross-border and domestic activity) and again find that our inferences are unchanged.

4.2 Industry-level activity

In this section, we refine the unit of observation to the country-industry-year level. In doing so, we more precisely measure our proposed channel while also providing the opportunity to rule out aggregation effects and many other alternative country-level explanations. Panel A of Table 4 replicates Panel A of Table 3 (cross-border mergers analysis) at the country-industry-year level and Panel B replicates Panel B of Table 3 (domestic mergers analysis). The importance of connected countries' industry-specific M&A activity in predicting a High M&A State is confirmed for both cross-border and domestic mergers (*Connected M&A* variables load positively and statistically significantly in almost all specifications). These results are strongly consistent with results obtained at the country level (Table 3) and support the economic linkage interpretation of the results, while providing evidence that our country-level results are driven by the aggregation of industry-level effects.⁷

We also observe in Table 4 (Panels A and B) that interactions between centrality measures (whether degree of centrality or eigenvector centrality) and aggregate M&A activity are no longer statistically significant. We infer that the amplification effect of country centrality in the diffusion of aggregate M&A activity is too disaggregated at the country-industry level to remain significant.

4.3 Trade Shocks

Having established the baseline impact of trade on propagating merger activity across countries, we now turn to the effect of shocks to trade relationships by examining the effect of import tariff cuts, Euro adoption, entry in the EU and in the EEA, and the decision to join the WTO. Our goal is to confirm the causal nature of the relation between cross-border merger activity and trade flows. While these various trade-related shocks are at least partially endogenous in the sense that a country's government chooses to make these changes, they are still informative for our purposes. First, the process leading up to each change is lengthy and so the government is not timing the effective date of the change to coincide with

⁷ We replicate Panels A and B when the dependent variable is based on value of transactions and report the results in Internet Appendix. The results are comparable.

some underlying merger process. Further, the motivations for making these changes is broad-based, reflecting a deepening economic relationship between the subject country and the countries already in the trading bloc. As our purpose is to establish that these economic connections, which we use trade flows to identify, allow and explain how merger activity in one nation propagates to others, studying the change in the strength of the effect after each of these self-imposed shocks is particularly informative. Finally, promoting mergers is probably not the most prominent objective of countries taking decisions such as adopting the Euro or joining the EU and EEA. In this sense, these shocks are largely exogenous with respect to M&A activity.

For each shock to trade relationships, we modify our main specification to include the shock and an interaction between the shock and our trade-weighted M&A variable. We present the results in Table 5, based only on weighting the trade connections using Subject Imports from Connected, for parsimony. Recall, this weighting scheme gives larger weights to countries that are important to the subject country because it imports a substantial fraction of its total imports from them. Columns 1 to 5 are dedicated to import tariff cuts, Euro adoption, EU and EEA entries and WTO accession respectively. In each column, we report results for cross-border mergers.

We collect import tariff cuts from the World Bank Indicators and identify large tariff cuts as tariff cuts that are five times as high as the average tariff cuts for the country under consideration during our analysis period. Results reported in column 1 of Table 5 indicate that, in themselves, tariff cuts reduce the likelihood of a High Merger State for the subject country, but increase the effect of the connected countries' trade-weighted merger activity on its own merger activity. The results are highly statistically significant.

Columns 2 to 5 focus on entry in the Euro zone, EU, EEA and WTO respectively. In each case, we take accessions into account starting from one year prior to the first country in our sample joining the zone and continuing to a year after the last country joining each zone (e.g. for WTO accession, the sample period starts from beginning of 1994 as the WTO is created in 1995, and continues up to the end of 2016

because Kazakhstan joined the WTO in 2015). As for import tariff cuts, adopting the Euro (column 2) reduces the likelihood of a High Merger State for the subject country, but increases the effect of the connected countries' trade-weighted merger activity on its own merger activity. Entries in the EU and EEA (columns 3 and 4 respectively) generate comparable negative effects on the likelihood of a High Merger State for the subject country but again demonstrate a positive effect on the connected countries' trade-weighted merger activity. A more general reduction in trade barriers occurs when a country joins the WTO, which is what we study in column 5. The results are qualitatively similar to what we find in the other shocks.

We replicate these analyses when the dependent variable is based on value of transactions and using Eigenvector centrality measures (results are reported in Internet Appendix). The results remain highly statistically and economically significant.

We conclude from the import tariff cuts, Euro, EU, EEA and WTO experiments that merger activity in a country's trading partners propagates along those trade links and the effect becomes stronger after it joins a free-trade zone with its major trading partners, especially when cross-border merger activity is used as the measure of M&A intensity.

4.4 The Interaction of Trade and Global Merger Waves

It is clear from the foregoing analysis that trade connections are an important conduit that transmits merger activity from country to country. This transmission helps us understand how merger activity clusters and aggregates to produce the global merger waves observed in Figure 2. A natural question, which we address in this section, is whether trade connections are as important outside a global wave as inside a wave. It is an empirical question as to which direction the comparison goes. While trade connections clearly have a role in starting waves, once the wave starts, activity could progress along non-traditional lines. Further, it could be the case that links are most important outside of merger waves

because non-wave cross-border mergers will only happen along established trade links. Alternatively, it can be the case that the importance of trade connections in starting the wave continues through the wave, so that trade connections are critical to understanding which mergers happen during aggregate waves, but not as important in the one-off mergers that happen outside of the waves.

To answer the question, we divide our full sample period into two subsamples based on whether the year was part of a wave or not. The wave sample contains the years 1989, 1995-2001, 2004-2008, and 2014-2015. The non-wave sample contains all the other years. We present the analysis in Table 6.

Panel A of Table 6 presents the results based only on the periods containing aggregate waves for the case of cross-border mergers (results are the same if we use domestic mergers to identify high states), again using the number of transactions as a measure of M&A activity intensity. It is clear that trade connections are highly significant, both statistically and economically. Interactions between centrality and aggregate M&A activity are significant in all eight specifications, meaning that the Subject country's centrality plays a significant role in determining whether a Subject country will undergo a merge wave when there is an aggregate merger wave. An increase in the *Connected M&A: Subject Imports from Connected* variable from its 25th to its 75th percentile value typically increases the probability of being in a high M&A state by more than 21%. Note that we continue to control for the country's lagged merger wave state, so the influence of trade connections is incremental to the existence of a merger wave.

Panel B of Table 6 presents corresponding results (cross-border mergers using number of transactions as the measure of M&A activity) for the subperiods that do not contain an aggregate merger wave. The results differ from those for the aggregate wave periods: the trade connection variables load significantly only when *Connected Imports/Exports from Subject* and none of the trade connection variables load significantly when the dependent variable is based on value of transactions (see Internet Appendix). Only the results highlighting the importance of centrality for the effect of aggregate M&A activity are maintained when adopting the Subject point of view to establish connection strength (Columns 1, 3, 5 and 7). Comparing Panels A and B, we conclude that trade connections actively transmit and grow

merger activity into aggregate global merger waves; an individual country's likelihood of entering a high merger state in a period of heightened global merger activity is strongly influenced by whether that global merger activity is affecting its trading partners. Nonetheless, it takes a large amount of merger activity in the subject country's trading partners to generate a wave in that country. Thus, in periods without a global merger wave, an individual country's likelihood of experiencing high merger activity is relatively unaffected by trade conduits because local factors outweigh the smaller effects being transmitted through the trade network.

4.5 Placebo Tests

It is natural to be concerned that something other than trade flows could be driving the results, even given our trade shock evidence. To address this concern, we create a world with the same merger activity, but with reshuffled trade connections. Specifically, we replicate our country-level merger activity analyses (Table 3) after randomly shuffling the trade flows used to compute the *Connected M&A* variables, keeping everything else the same as in the real data. Panel A of Table 7 replicates the corresponding panel of Table 3 (cross-border waves based on the number of transactions) and Panel B of Table 7, the corresponding panel of Table 3 (domestic waves based on the number of transactions). The results are clear: none of *Connected M&A* variables coefficients are statistically significant. We obtain similar results using value of transactions in place of number of transactions (results reported in the Internet Appendix). Thus, we conclude that trade flows capture the true conduit by which merger activity is transmitted around the world.

4.6 Controlling for Market Valuation, Geographical Distance and Culture

Results reported in Panels A and B of Table 3 show that *Connected M&A* variables play a role in explaining both cross-border and domestic M&A waves. While this finding highlights the economic importance of the mechanism under investigation (domestic M&A accounts for roughly 75% of overall M&A activity), it also might suggest that some latent factors, related to economic integration and

correlated with *Connected M&A*, are driving our results. Our empirical strategy makes it difficult, if not impossible, to exclude all possibility of any such latent factors. However, our country-level analyses include country and year fixed effects and, for country-industry level analyses, the fixed effects are expanded at the country-industry level. These fixed effects already absorb any time constant and country (country-industry) global latent factors. Yet, the latent factor could still vary across time and country in the same way as does trade. In this kind of analysis, it is impossible to exclude with certainty, an omitted variable that varies in the same way as the independent variable of interest. Nonetheless, we can reduce the scope for such a variable by introducing further controls. In this section, we explicitly control for stock market valuation differentials, as well as geographical and cultural distance between connected and subject countries.

We compute *Connected Stock Market Valuation*, *Connected Geographical Distance* and *Connected Culture Distance* as we do *Connected M&A* in Equation (1), replacing the M&A activity measure by the absolute value of the difference between the equally-weighted Market-to-Book ratio of the subject and connected countries, the geographical distance between the capital of the subject and the connected countries capitals and the absolute value of difference of trust level (see Guiso et al., 2006) between the subject and connected countries. Market-to-Book ratios are computed using data collected in the Worldscope database, geographical distances are computed using data collected from www.mapsofworld.com and trust levels are calculated from the World Value Survey, as in Ahern et al. (2015).

Results are displayed in Table 8 for cross-border waves using number of M&A transactions as measure of M&A intensity. All *Connected M&A* remains positive and significant, despite the simultaneous inclusion of our three new control variables, in addition to country characteristics and country and year fixed effects and despite losing almost one third of our sample (from 1,511 observations in Panel A of Table 3 to 1,117 observations in Table 8). *Connected Geographical Distance* has a positive and significant coefficient in Columns 1, 2, 4 and 5. The *Connected Culture Distance*

coefficient is positive and significant in Columns 7 and 8. We obtain similar results using the value of M&A transactions as measure of M&A intensity (see Internet Appendix). We conclude from these results that our *Connected M&A* variables go beyond being simple proxies of economic integration, as this should be adequately spanned by our additional control variables.

4.7 Additional Robustness Checks

In Table 4, we present country-industry based evidence. An important proportion of trade flows (30%) are originating from crude materials and it is probable that merger activity in these crude materials industries respond to specific determinants. We therefore confirm the robustness of our results by excluding them from our sample and focusing on manufacturing industries (ISIC codes between 15 and 37). Results are reported in the Internet Appendix and confirm the results from Table 4, with two notable exceptions:

- For cross-border mergers, coefficients on interactions between eigenvector centrality and aggregate M&A activity are now positive and statistically significant;
- For domestic mergers, coefficients of *Connected M&A* variables, while still positive, lose their statistical significance in three specifications out of the eight tested.

These results emphasize that the dynamic of trade flows and merger activity interactions may vary from industry to industry, and in particular, the degree to which domestic merger activity is influenced by activity in the trade network varies across industries. Improving our understanding of the role of these industry specific-factors represents a promising avenue for future research.

An additional robustness check that we implement is related to the global rise of the M&A market activity (see Figure 2). We may suspect that our *High M&A State* dependent variable is impacted by this trend and consequently, clusters in the second part the 1989 to 2016 period. We investigate this issue by computing the *High M&A State* on the residuals of a regression of the M&A activity measure on a linear

time trend at the country level. In this way, by construction, *High M&A State* is unaffected by the global rise in M&A activity. Our results are unaffected (see Internet Appendix).

Given the large role the US has in both trade and M&A, one might be concerned that we are simply explaining US activity. To check whether it is the case, we replicate Table 3 country level analyses after exclusion of the U.S. from our sample. Our inferences are unchanged (see Internet Appendix). This is also the case if we exclude The Netherlands and Singapore, two countries acting mainly as shipping hubs or gateways between other countries, and therefore potentially affecting the interpretation of our results (see Internet Appendix). Note that, in both cases, excluded countries are still taken into account for the Connected M&A variables computation in order to keep constant the structure of the trade flows network and to test precisely if it is the M&A activities in these countries that play a prominent role.

Finally, as our results show that correlated cross-border activity also strongly predicts domestic merger activity, we investigate whether this reveals the presence of omitted factors driving both the cross-border and domestic M&A markets. We introduce the high cross-border M&A state variable as an additional covariate in the high domestic M&A state regression Equation (2). While high domestic M&A state is endogenous to high cross-border M&A state in presence of omitted factors, it plays the role of a proxy control variable (see Angrist and Pischke, p. 66 and 67). Adding this proxy variable as an additional control variable does not fully fix the endogenous omitted variable bias but does help to check the robustness of the results, as shown by the authors. We do it only for Connected M&A variables Partner point-of-view, because the high domestic M&A state variable is clearly strongly co-linear with the Connected M&A variables Subject point-of-view. The results, presented in the Internet Appendix, confirm the positive relation between the high domestic M&A state variable and the Connected M&A ones.

4.8 Predicting cross-border activity at the country-pair level

Our tests so far have used the global trade network to help understand when a subject country or country-industry will undergo a merger wave. In this section, we engage in complementary analysis of the

degree to which trade flows and network centrality help to predict a subject country's cross-border merger activity. Specifically, we employ fixed-effects panel regressions where the dependent variables and independent variables are as follows:

- the dependent variable is the proportion of country i 's mergers that happen with country j (relative to all of i 's cross-border mergers). We distinguish the inbound case (the acquirer is from the connected country and the target from the subject country) from the outbound case (the acquirer is from the subject country and the target from the connected country);
- the independent variables of interest are *Subject Imports from Connected* (lagged by one year), the centrality of the Subject Country (also lagged by one year), and an interaction between the two variables. We control for the same set of country factors as we do in our previous tests (GDP, GDP Growth, GDP Per Capita, Investment Profile and Quality of Institutions of both the acquirer and target countries, and exchange rate growth and exchange rate volatility between acquirer and target countries).

Table 9 presents the results. In panel A, we focus on the inbound merger activity and, in Panel B, on the outbound activity. In each case, we report results for the entire sample period using the full panel of all pairwise country combinations, so the dependent variable is country-pair-year. Note that all five specifications include country-pair fixed-effects, which will absorb all of the time-invariant factors like language similarity, culture proximity, geographical proximity, etc. that will affect cross-border merger activity between the two countries. In Column 1, we add only our trade flow variable. In Columns 2 to 5, we report specifications with the addition of centrality measures and their interaction with the trade flow variable. Our trade network variable is strongly and consistently positively significant, demonstrating that within country-pair variation in the strength of trade flows between the two countries predicts variation in each country's inbound and outbound cross-border merger activity. Not only is this statistically highly significant but the economic effect is sizeable: using column 2 specifications in each panel, an increase in lagged imports between a given country-pair from the 25th to 75th percentile value predicts a 13% (25%)

increase in the proportion of the inbound (outbound) subject country's mergers with the connected country with respect to the sample average.

Centrality, whether measured as degree or eigenvector, is positive and highly significant for inbound merger activity (Panel A) and negative and significant in the full models (Panel B, specifications 3 and 5, which include acquirer, target and country-pair time variant characteristics: more central countries absorb proportionally more mergers but originate fewer ones. This likely reflects the fact that more central countries have more active domestic M&A markets. However, the interaction of centrality and trade flows is positive and significant both for inbound and outbound merger activity, such that the cross-border merger activity of central countries is more sensitive to the strength of the country's trade connections. This last result highlights the importance of trade flows' intensity in the diffusion of cross-border M&A activity.

Panels A and B of Table 9 provide evidence that lagged trade flows and network centrality are driving cross-border merger activity. But does lagged cross-border merger activity itself predict trade flow intensity? To investigate this issue, we implement a Granger causality test (Granger, 1969). The Granger causality test rests on a panel vector auto-regression composed of two equations (one for modelling the dynamic of merger activity and the second, the dynamic of trade-flows) at the country-pair level (see Greene, 2012). Cross-border merger activity and trade flows intensity are measured as for inbound and outbound merger analyses. Table 10 reports the results for a specification with two lags. We obtain similar results with one lag and three lags and with the inclusion of acquirer and target control variables⁸ Cross-border merger activity and trade flows are clearly auto-correlated, as auto-regressive coefficients are highly significant at both lags and in both equations. This is consistent with the existence of M&A waves and business cycles. The Granger causality Wald test clearly supports the conclusion that trade flows *Granger cause* merger activity and but not the reverse.

⁸ The inclusion of country specific control variable raises numerical convergence problems.

5. Conclusion

Markets around the world have become increasingly integrated and both trade and cross-border merger activity have increased. In this paper, we try to further our understanding of the drivers of merger activity by measuring whether and how the intensity of trade relationships transmits merger activity across borders. To do so, we take a network approach, which, in the context of gravity models, allows us to account for all the sources of gravity in the economic system simultaneously, rather than pair-by-pair.

We find that both the trade and merger networks have become increasingly dense over the past 26 years. Accounting for a number of country characteristics, we show that merger activity in countries connected to the subject country through trade strongly explains merger activity in the subject country, even controlling for lagged merger activity in the subject country. Further, the effects vary by the centrality of the subject country. The economic importance of the results is emphasized by the fact that they hold for both cross-border mergers and domestic mergers.

Our additional analyses highlight variation that points to a causal channel for trade; import tariff cuts, Euro adoption, entry into the EU and EEA or the WTO strengthens the effect of trade-weighted merger activity for cross-border mergers. We further find that trade-based effects are strongest during periods that include global merger waves. Finally, our country-pair level analysis demonstrates that, controlling for proximity, language, culture, etc., variation over time in trade intensity between two countries strongly predicts the proportion of their overall merger activity that will be with each other. This result holds for inbound mergers (mergers initiated by the connected country) and outbound merges (mergers initiated by the subject country). A Ganger causality test moreover confirms that, while trade flows predict merger activity, the reverse is not true.

Overall, our results establish how the network of trade flows serves as a channel through which merger activity propagates not only across borders, but also domestically, eventually aggregating to a

global merger wave. They also emphasize how the influence of external activity on domestic merger activity will continue to grow as trade connections grow.

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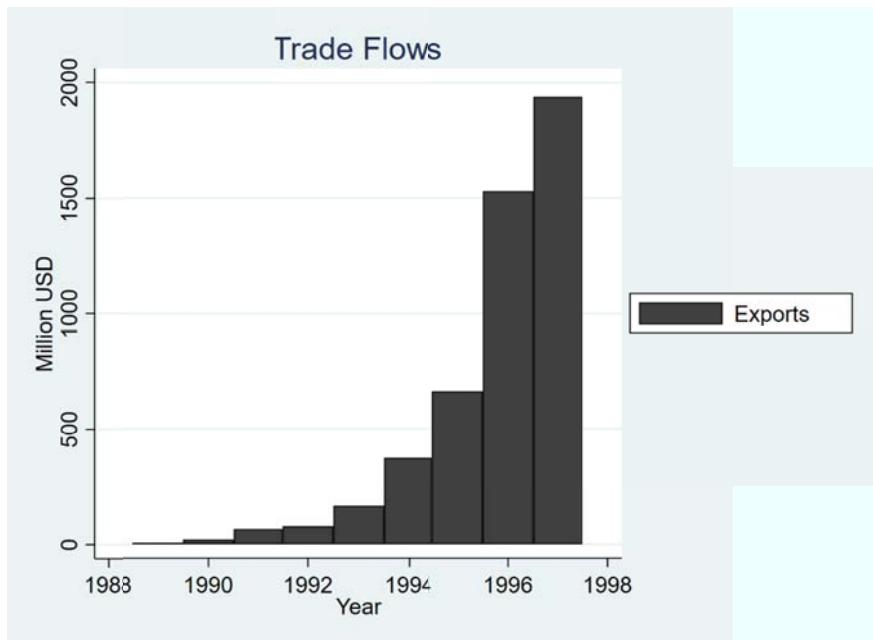
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Figure 1 – Cisco M&A activities and Exports trade flows:

The figure displays Cisco export sales over the 1989 to 1997 period. Corresponding Cisco M&A activities (Subfigure A), split between domestic transactions and cross-border ones are reported in Subfigure B.

Subfigure A – Cisco Exports



Subfigure B – Cisco M&A activities

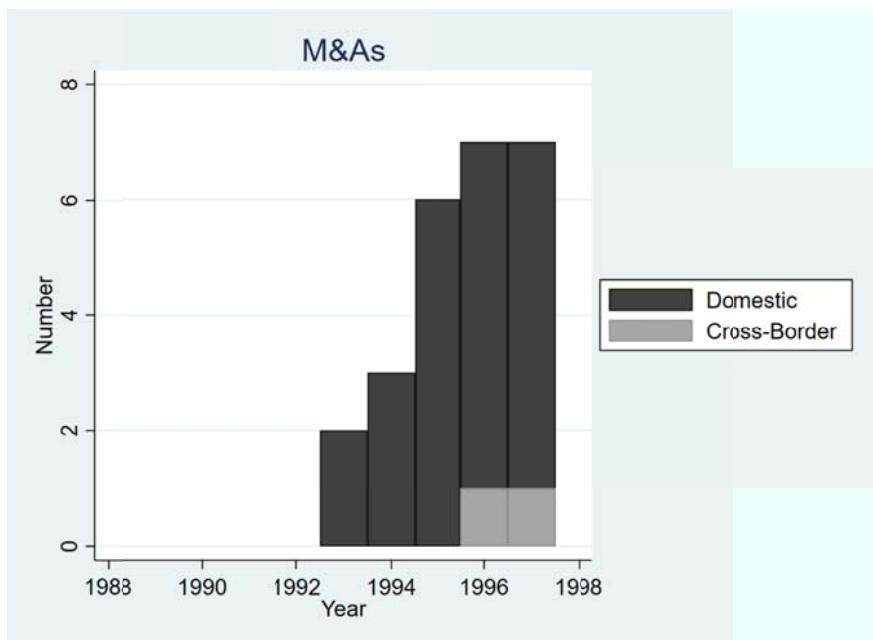


Figure 2 – Cross-border Mergers:

The figure shows the cross-border mergers and acquisitions across 74 countries for period starting from 1989 to 2016.
(Source: SDC Database)

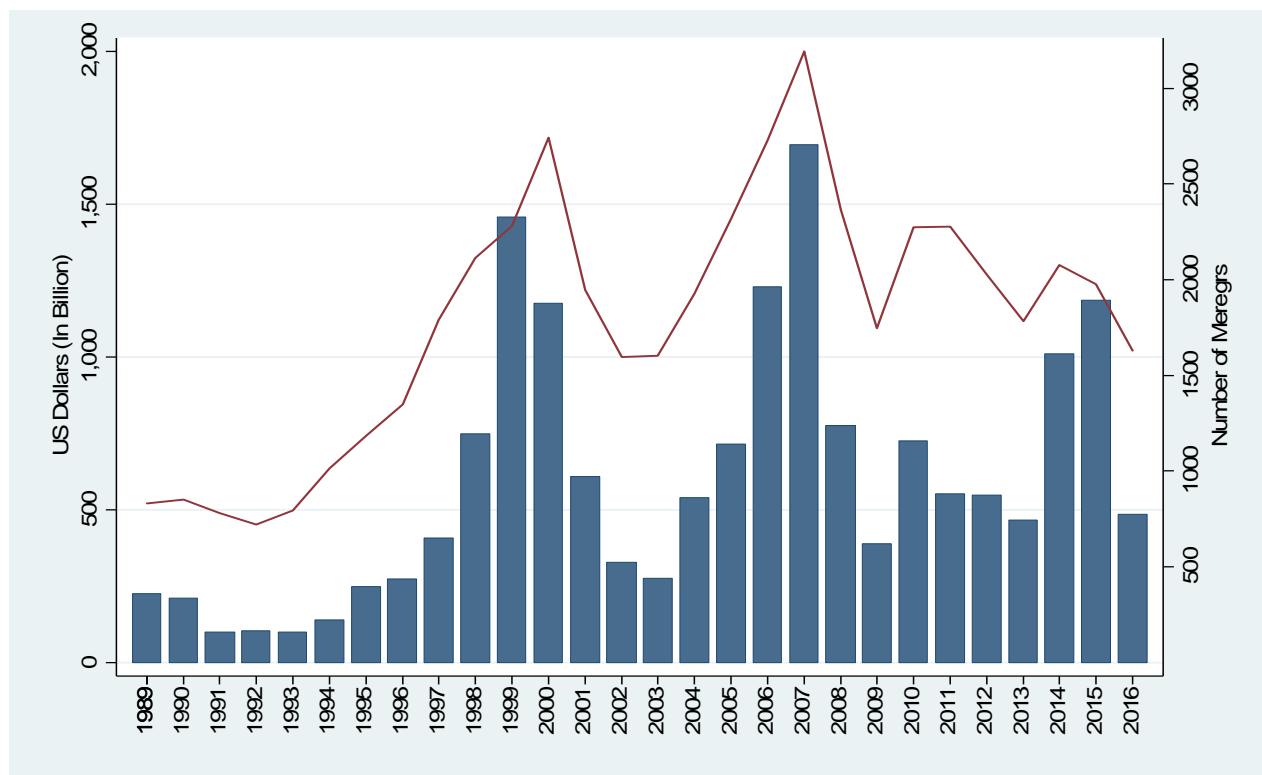
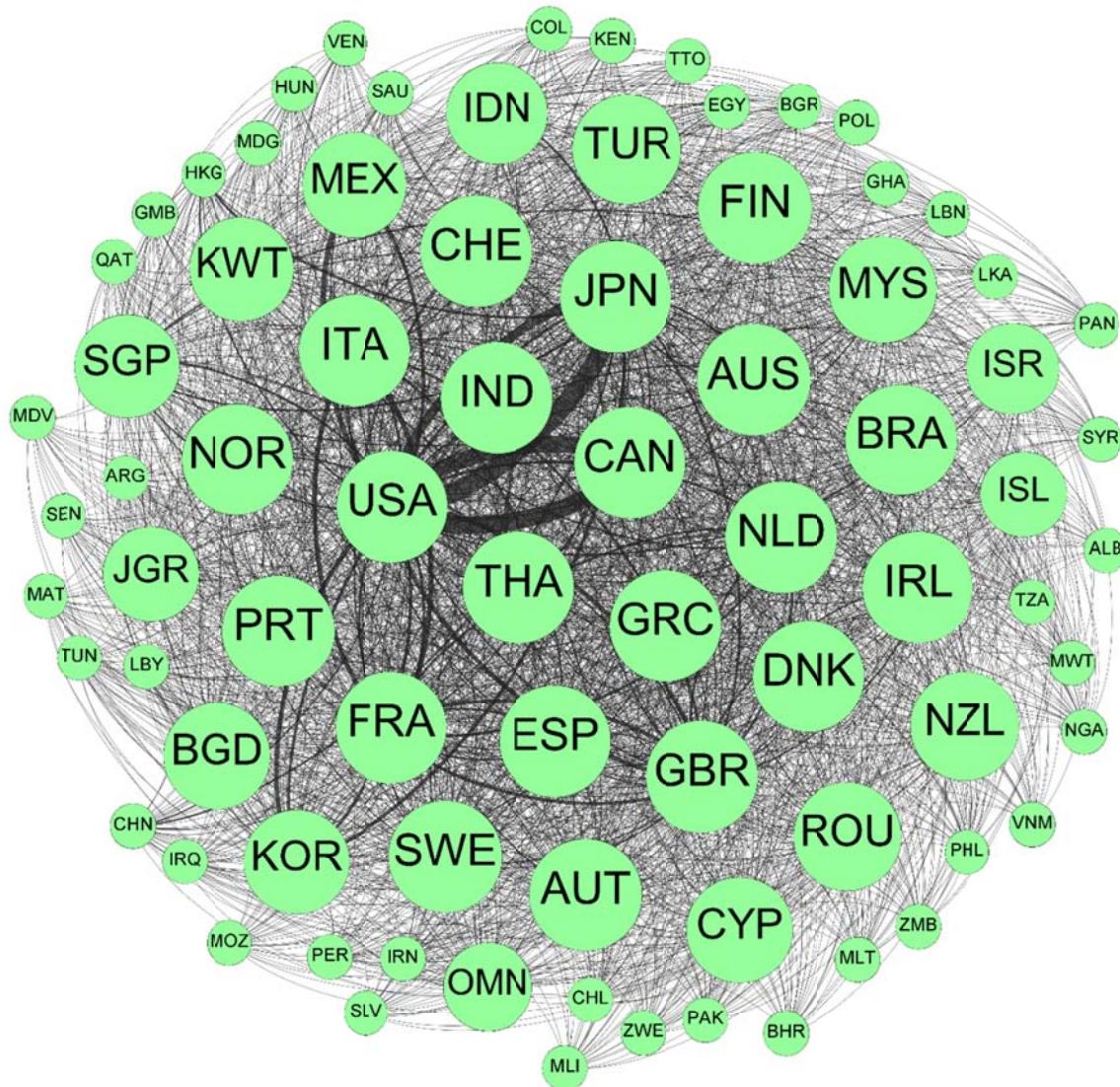


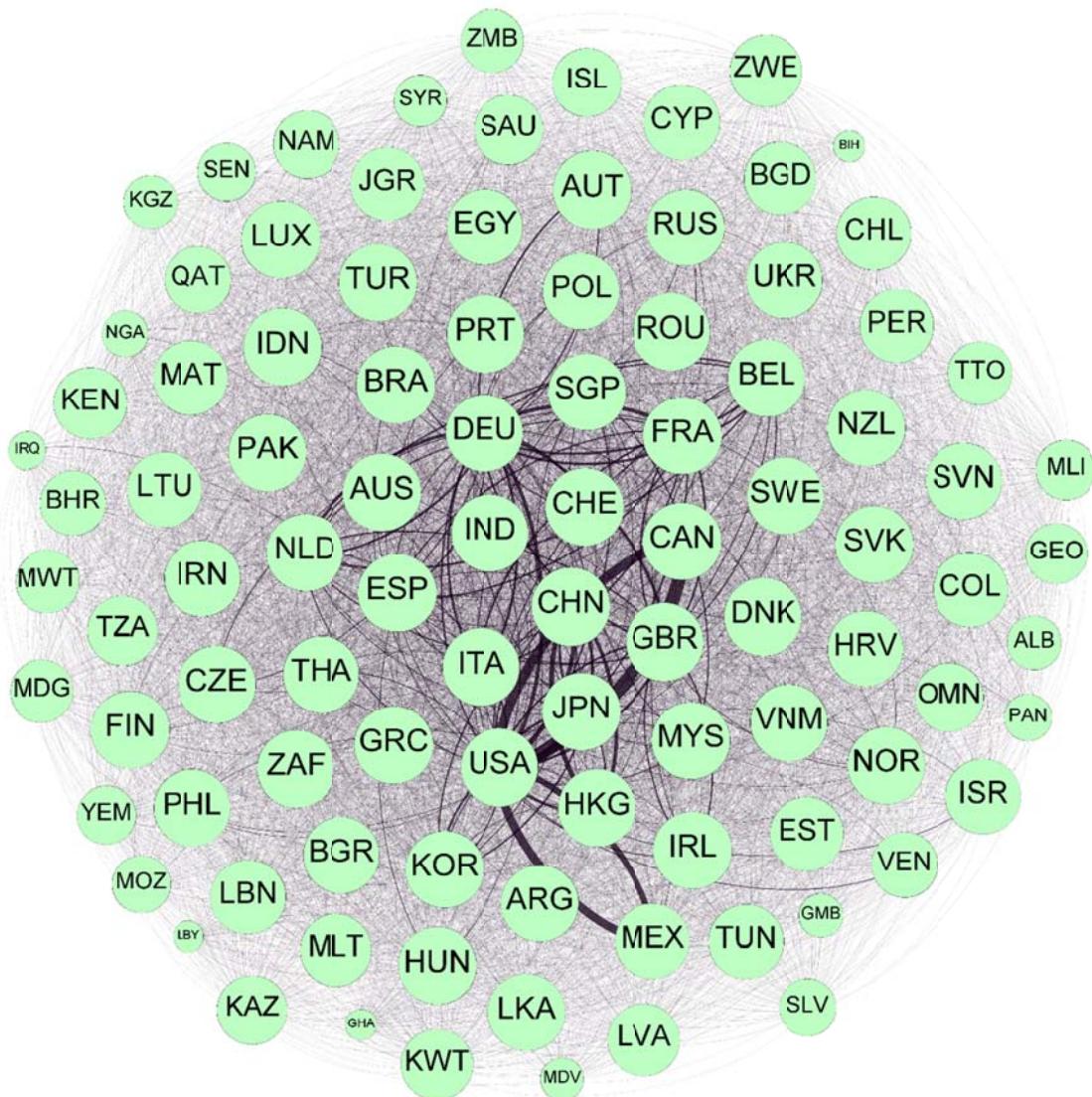
Figure 3 – Exports Network:

Subfigures A to C show the exports network based on \$ value in years 1989, 2002 and 2016, respectively. The size of the nodes represents the degree of centrality and thickness of edges presents the \$ value of exports between partner countries. Degree centrality is a country's number of intercountry connections.

Subfigure A - Exports Network based on \$ Value (1989)



Subfigure B - Exports Network based on \$ Value (2002)



Subfigure C - Exports Network based on \$ Value (2016)

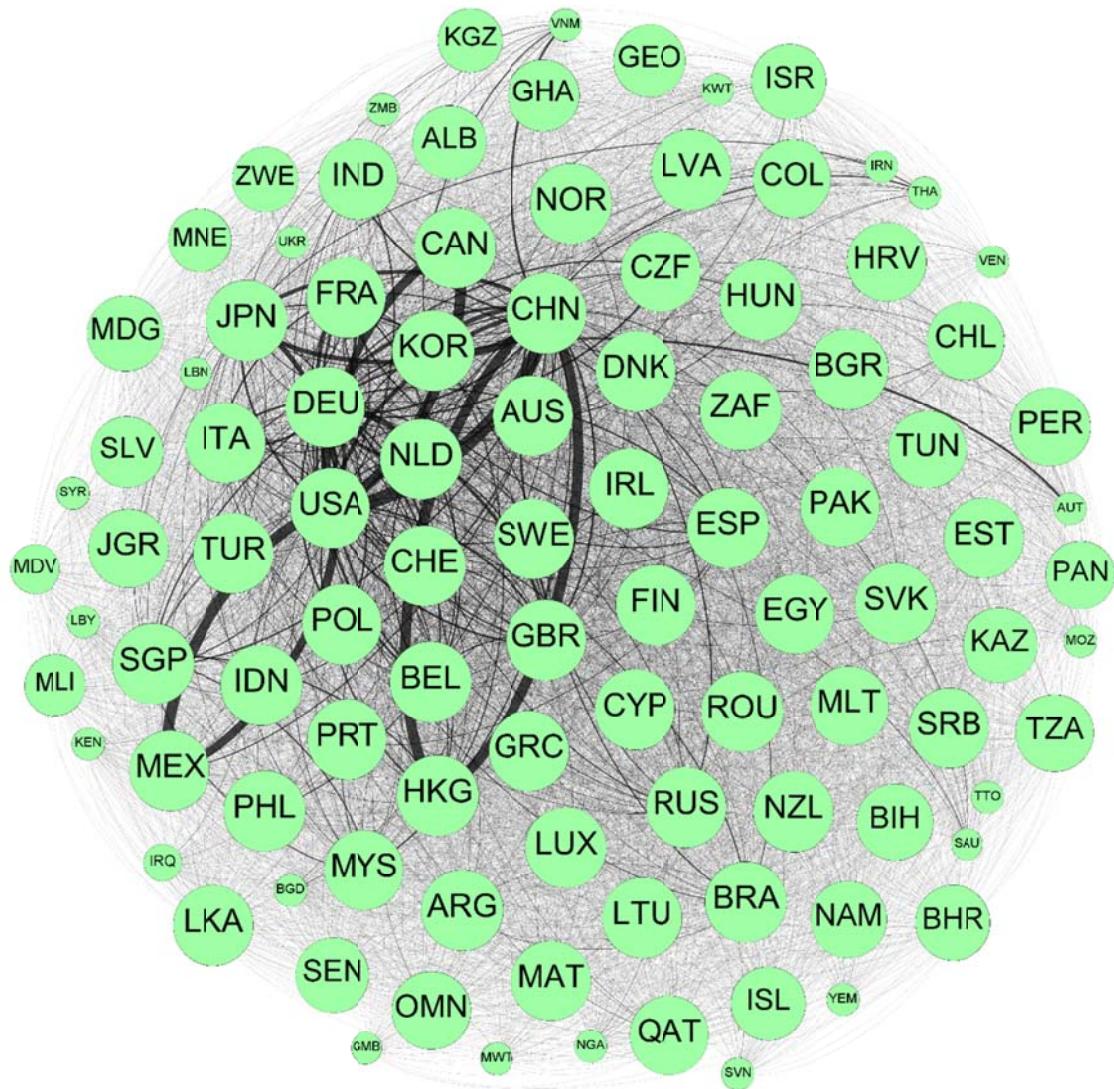
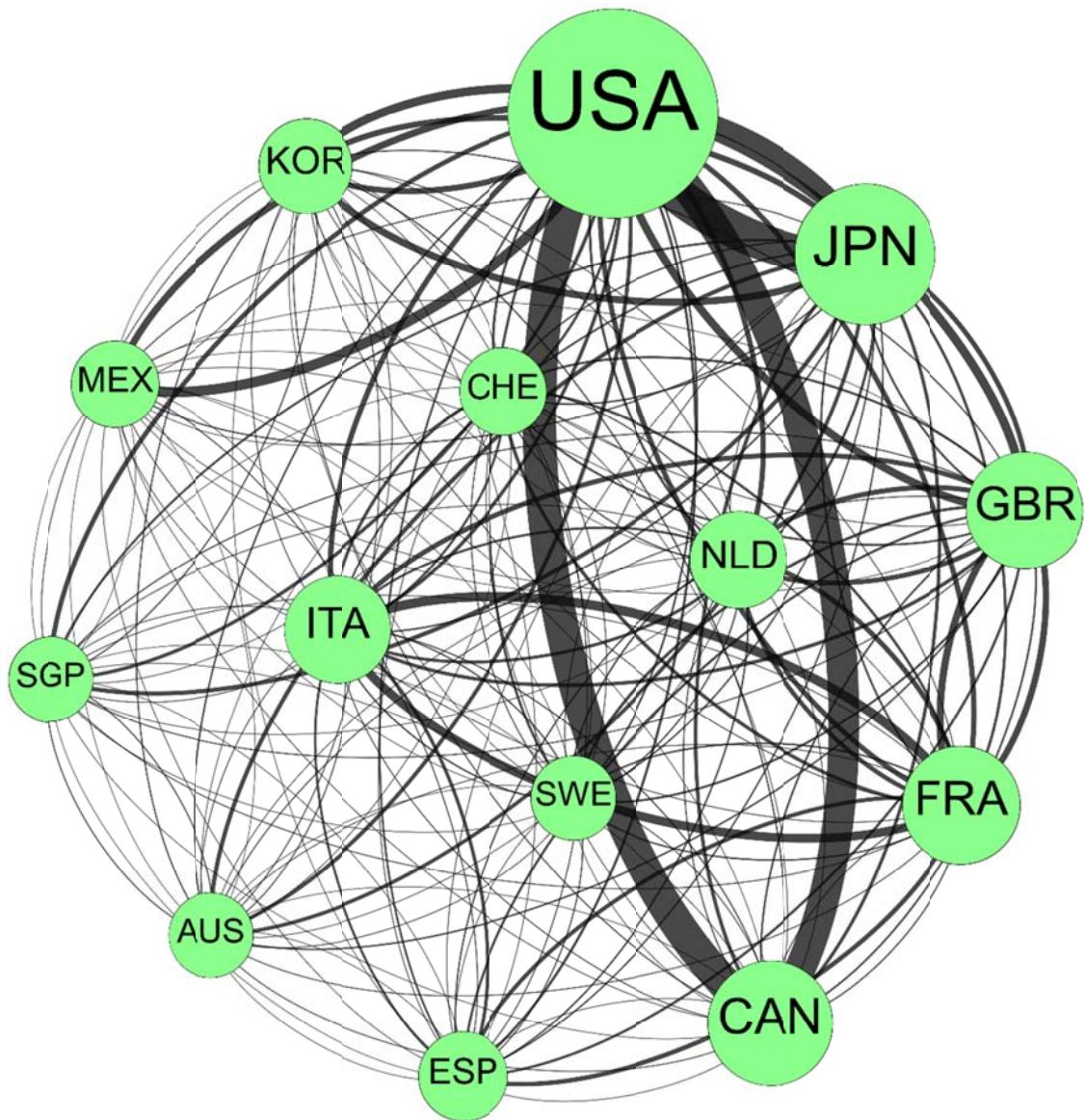


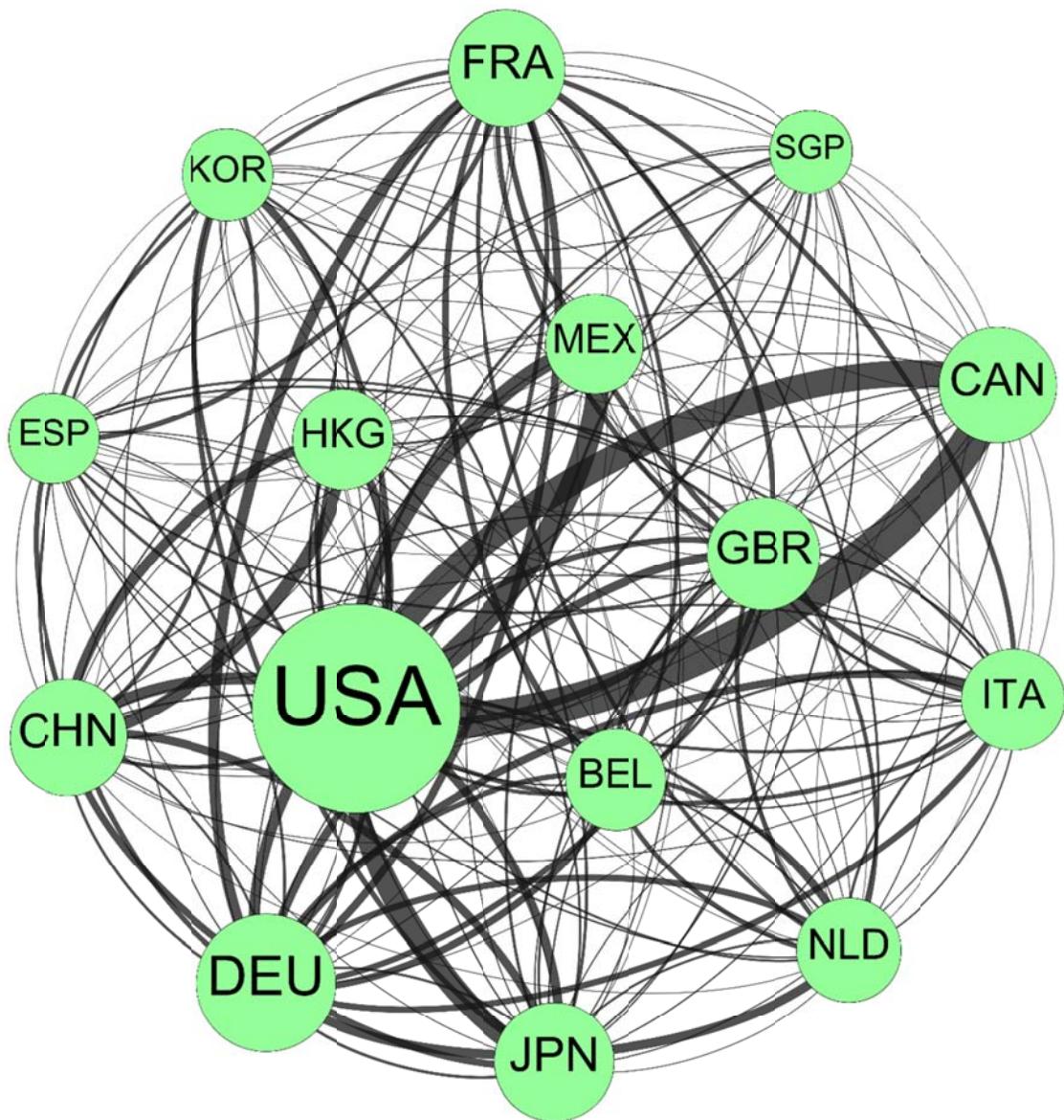
Figure 4 – Exports Network of Top 15 Central Countries:

Subfigures A to C show the exports network of top 15 most central countries based on \$ value in years 1989, 2002 and 2016, respectively. The size of the nodes represents the degree of centrality and thickness of edges presents the \$ value of exports between partner countries. Degree centrality is a country's number of intercountry connections.

Subfigure A - Exports Network based on \$ Value (1989)



Subfigure B - Exports Network based on \$ Value (2002)



Subfigure C - Exports Network based on \$ Value (2016)

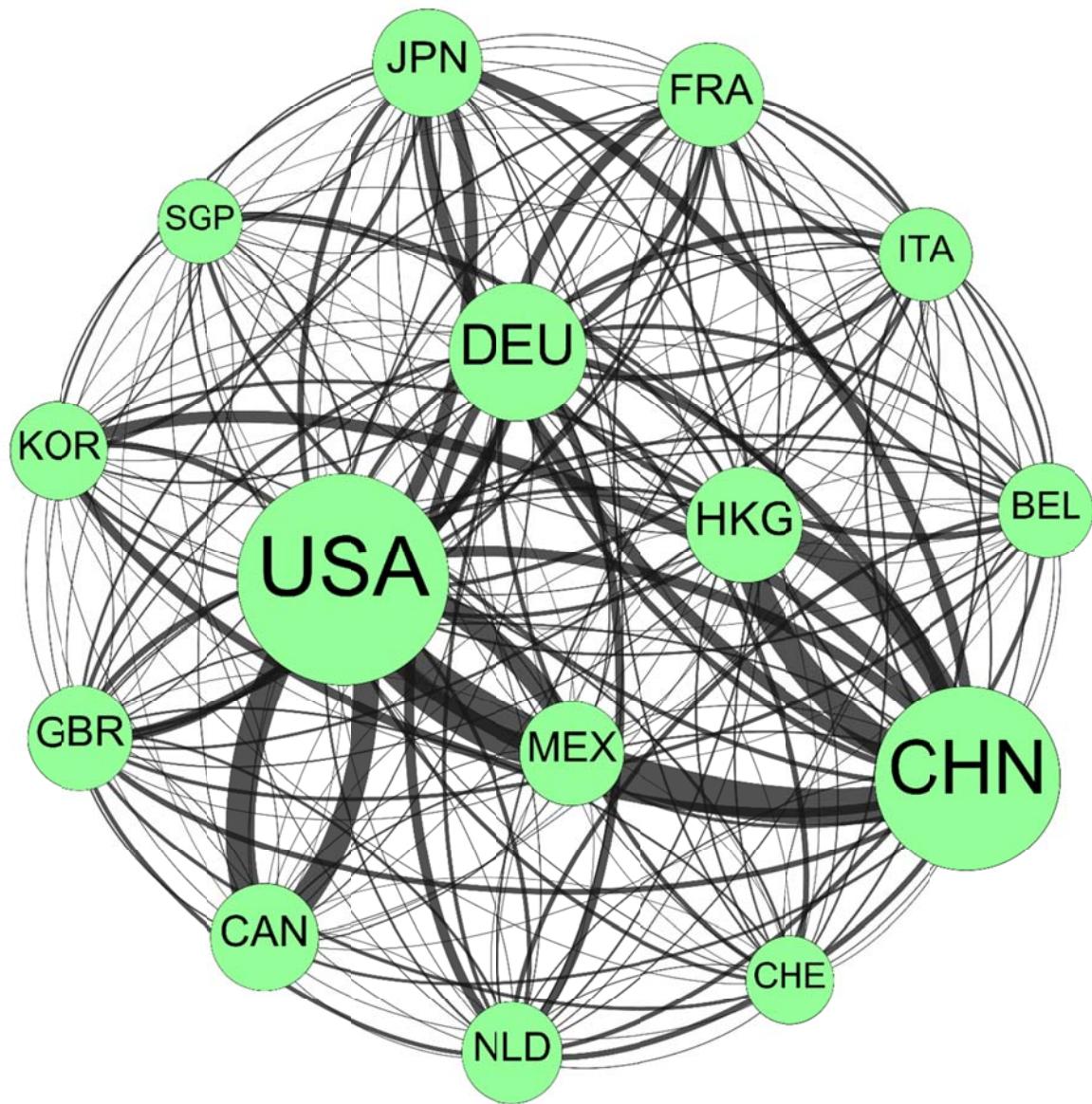
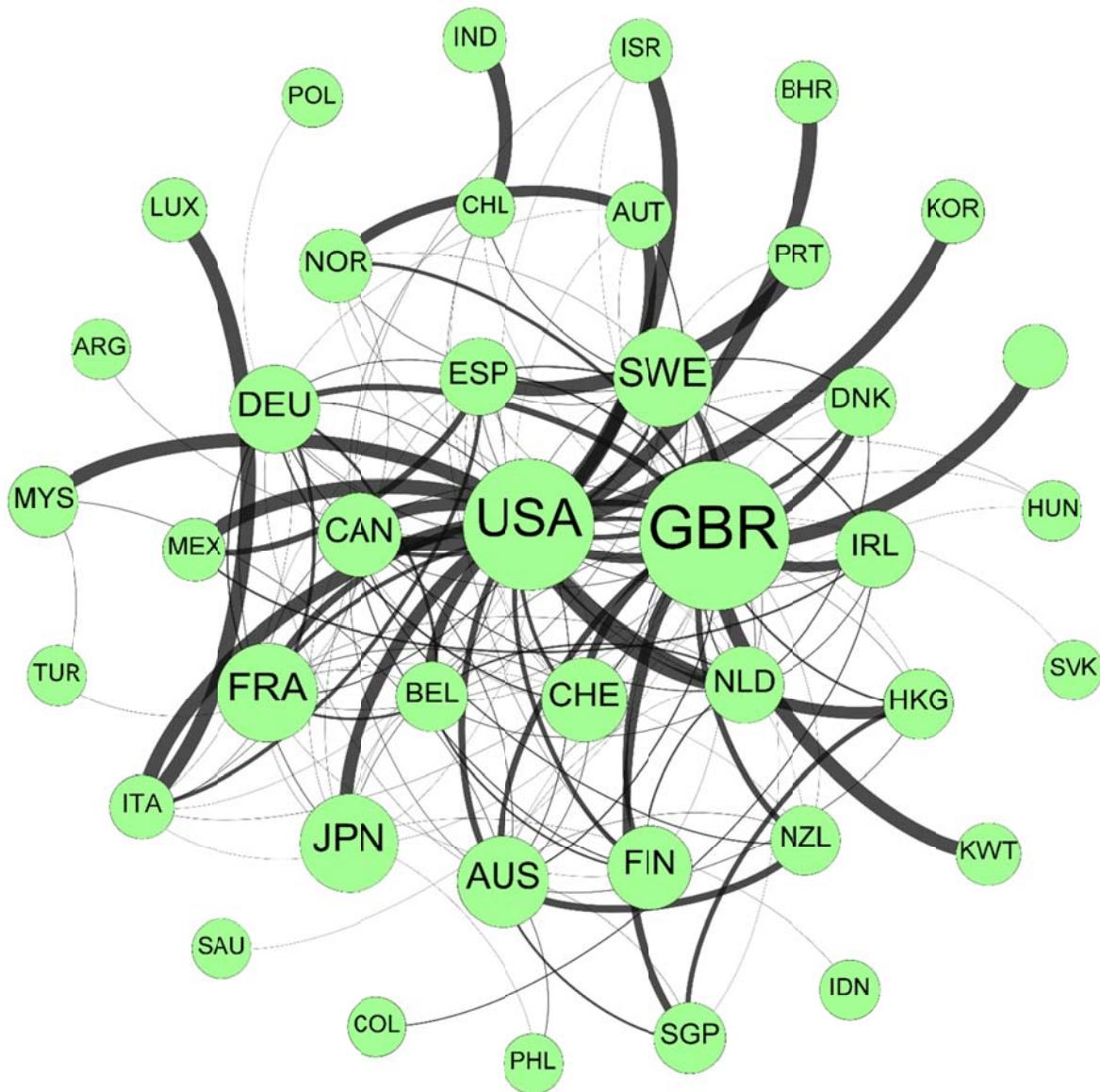


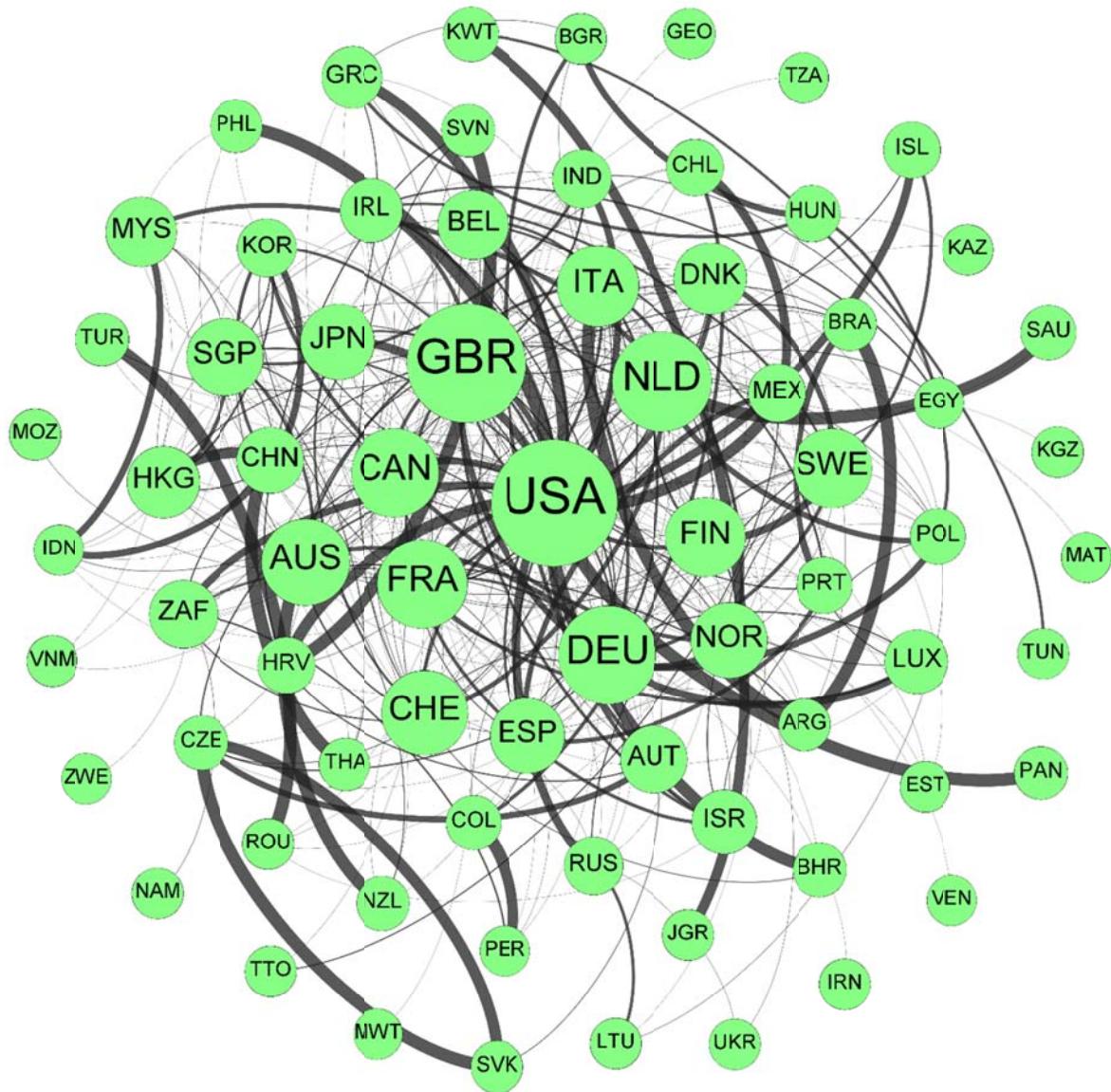
Figure 5 - Merger Network:

Subfigures A to C show the merger network based on \$ value in years 1989, 2002 and 2016, respectively. The size of the nodes represents the degree of centrality and thickness of edges presents the \$ value of mergers between partner countries. Degree centrality is a country's number of intercountry connections.

Subfigure A – Merger Network (1989)



Subfigure B – Merger Network (2002)



Subfigure C – Merger Network (2016)

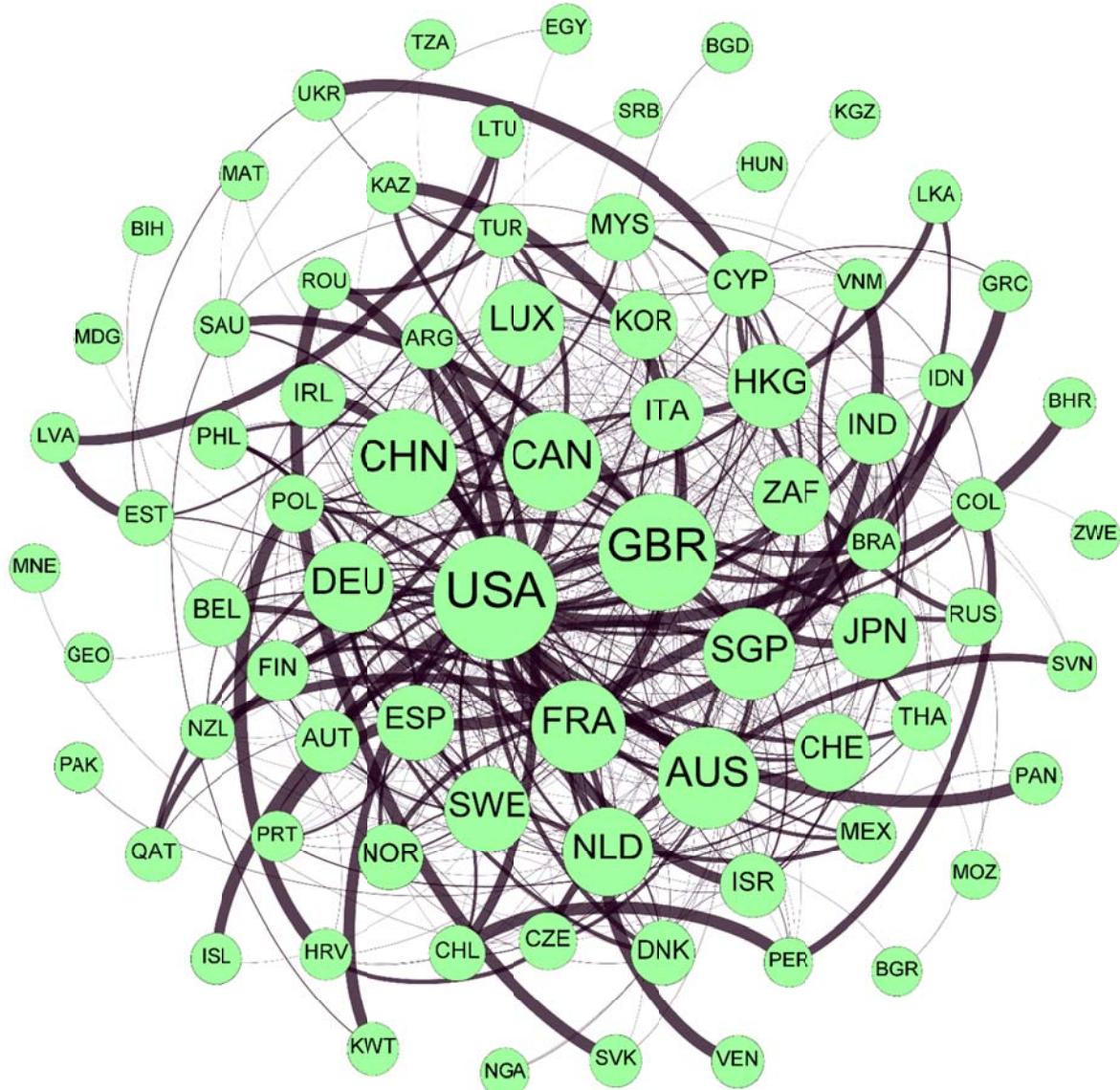


Table 1 - Summary Statistics:

This table presents the summary statistics of the sample between 1989 and 2016.

Panel A - International Trade

This table presents summary statistics of the International Trade (Imports and Exports). The trade data is from ComTrade Database. Intercountry pairs include all combinations of the intercountry pairs. Intercountry pairs >1% are those observations where either Imports % or Export % is greater than 1%. Imports % is the percentage of country j's products that are purchased by country i. Export % is the percentage of country i's products that are purchased by country j. All numbers are in percentages.

	Imports %		Exports %	
	Intercountry Pairs	Intercountry Pairs>1%	Intercountry Pairs	Intercountry Pairs>1%
Mean	1.13	4.87	1.18	5.48
Median	0.11	2.67	0.11	2.70
5th Percentile	0.00	1.09	0.00	1.09
95th Percentile	5.52	16.32	5.48	19.66
<u>Frequency Percentages</u>				
0% to 1%	79.32	-	80.90	-
1% to 2%	7.72	37.33	7.05	36.89
2% to 3%	3.64	17.60	3.34	17.47
3% to 4%	2.24	10.81	1.92	10.07
4% to 5%	1.50	7.27	1.31	6.88
>5%	5.58	27.00	5.48	28.69

Panel B - Cross-Border Mergers

This table presents summary statistics of the sample of mergers over the period 1989 to 2016. Merger data are from SDC. Reported in brackets are 2016 millions of U.S. dollars.

	Cross-Border Pairs	Country Level	
		Cross-Border	Domestic
Number of Observations	5402	74	74
Total Mergers	49905	49905	174,899
	[\$16,710,453]	[\$16,710,453]	[\$41,548,499]
Mean	9	674	2364
	[\$3,087]	[\$225,817]	[\$561,466]
Median	0	109	332
	[\$0]	[\$25,090]	[\$42,903]
5th Percentile	0	5	20
	[\$0]	[\$135]	[\$761]
95th Percentile	29	2117	10371
	[\$7,057]	[\$1,306,241]	[\$1,451,998]
Maximum	2968	10440	67001
	[\$971,953]	[\$3,360,558]	[\$24,327,962]
Frequency Percentages			
None	61.51	-	-
1	10.57	-	-
2 to 5	12.62	5.41	-
6 to 20	8.98	17.57	5.41
21 to 50	3.05	14.86	18.92
>50	3.26	62.16	75.68

Table 2: Networks Centrality

Panel A lists the most central countries in the imports-exports and merger networks (based on Degree Centrality). Panel B describes the correlation between country characteristics across networks (either Degree Centrality or Eigenvector Centrality). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. In panel A, * indicates a merger country also in top 15 Imports/Exports countries and in Panel B, statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A - The Most Central Countries in the Imports-Exports and Merger Networks:

Rank	Import Network	Export Network	Merger Network
1	United States	United States	*United States
2	Germany	Germany	*United Kingdom
3	China	China	*France
4	Japan	Japan	*Germany
5	United Kingdom	France	*Netherlands
6	France	United Kingdom	*Canada
7	Italy	Italy	Switzerland
8	Belgium	Belgium	Australia
9	Hong Kong	Canada	*Japan
10	Canada	Netherlands	*Spain
11	Netherlands	Hong Kong	*Hong Kong
12	South Korea	South Korea	*Belgium
13	Spain	Russia	*China
14	Mexico	Singapore	Sweden
15	Singapore	Mexico	*Italy

Panel B - Correlation between Country Characteristics across Networks

	Degree Centrality: Imports Network	Degree Centrality: Exports Network	Eigenvector Centrality: Imports Network	Eigenvector Centrality: Exports Network
Degree Centrality: Exports Network	***0.936 0.000			
Degree Centrality: Mergers Network	***0.604 0.000	***0.487 0.000		
Eigenvector Centrality: Exports Network			***0.946 0.000	
Eigenvector Centrality: Mergers Network			***0.429 0.000	***0.452 0.000

Table 3: The Propagation of Merger Activity through the Trade Network – Country Level

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the country's cross-border/domestic merger activity being in the highest quartile of all values for that country over the sample period in the year under consideration, and is based on the number of M&A transactions. The independent variables are trade-weighted connected M&As (defined in text). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity defined, as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A and B present the results of cross-border and domestic merger waves, respectively. Standard errors are corrected for heteroscedasticity and clustered at country level (p-value in parentheses). Inclusion of fixed effects is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – Cross-border waves based on the number of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.220 0.000	***0.228 0.000	***0.229 0.000	***0.234 0.000	***0.224 0.000	***0.233 0.000	***0.219 0.000	***0.226 0.000
Connected M&A: Subject Imports from Connected	***9.174 0.000				***9.731 0.000			
Connected M&A: Connected Imports from Subject		*1.981 0.060				***2.551 0.010		
Connected M&A: Subject Exports to Connected			***8.053 0.000				***7.711 0.000	
Connected M&A: Connected Exports to Subject				***2.531 0.000				***2.207 0.010
Degree Centrality	-0.049 0.560	0.020 0.840	-0.077 0.110	-0.033 0.540				
Degree Centrality x M&A Activity	***2.626 0.000	**1.850 0.030	***2.210 0.000	*1.368 0.060				
Eigenvector Centrality					-1.078 0.560	-0.520 0.790	0.494 0.790	2.115 0.290
Eigenvector Centrality x M&A Activity					***59.027 0.000	27.182 0.300	***77.699 0.000	*48.005 0.070
Connected Exchange Rate Growth: Trade Weighted	***0.065 0.000	***0.059 0.000	***0.076 0.010	**0.067 0.020	***0.065 0.000	***0.056 0.000	***0.076 0.010	**0.068 0.020
Connected Exchange Rate Volatility: Trade Weighted	0.000 0.970	0.000 0.910	0.000 0.590	0.000 0.730	0.000 0.530	0.000 0.560	0.000 0.770	0.000 0.840
Investment Profile	-0.003 0.740	0.002 0.850	-0.003 0.750	0.002 0.850	0.001 0.940	0.006 0.610	-0.006 0.530	-0.002 0.860
Quality of Institutions	0.025 0.120	0.021 0.240	0.018 0.270	0.017 0.360	0.021 0.160	0.019 0.280	0.018 0.280	0.015 0.390
GDP	0.282 0.170	**0.399 0.030	0.282 0.220	***0.474 0.010	0.238 0.260	**0.398 0.030	0.229 0.310	**0.422 0.020
GDP Growth	***0.011 0.010	***0.011 0.010	***0.012 0.000	***0.011 0.000	***0.011 0.010	***0.012 0.000	***0.011 0.010	***0.010 0.010
Per Capita GDP	-0.128 0.540	-0.253 0.180	-0.067 0.770	-0.286 0.120	-0.079 0.700	-0.211 0.250	-0.101 0.660	*-0.323 0.090

Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1511	1511	1513	1513	1511	1511	1513	1513
Adjusted R ²	0.261	0.253	0.265	0.257	0.256	0.242	0.261	0.247
F statistic	131.404	126.366	77.182	42.838	130.336	134.583	71.771	41.528
<i>Panel B – Domestic waves based on number of transactions</i>								
	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.266 0.000	***0.262 0.000	***0.266 0.000	***0.263 0.000	***0.262 0.000	***0.260 0.000	***0.263 0.000	***0.260 0.000
Connected M&A: Subject Imports from Connected	**5.330 0.040				**6.083 0.020			
Connected M&A: Connected Imports from Subject		***2.586 0.010				***2.711 0.000		
Connected M&A: Subject Exports to Connected			*4.720 0.060				*4.45 0.070	
Connected M&A: Connected Exports to Subject				***3.069 0.000				***2.824 0.000
Degree Centrality	-0.045 0.620	0.010 0.910	*-0.112 0.070	-0.053 0.390				
Degree Centrality x M&A Activity	***3.990 0.000	*2.481 0.080	***3.612 0.000	**2.161 0.050				
Eigenvector Centrality					0.308 0.890	1.344 0.560	-2.616 0.260	-1.039 0.650
Eigenvector Centrality x M&A Activity					***104.043 0.000	58.522 0.130	***128.330 0.000	**81.207 0.030
Connected Exchange Rate Growth: Trade Weighted	***-0.052 0.000	***-0.064 0.000	***-0.050 0.000	***-0.064 0.000	***-0.052 0.000	***-0.064 0.000	***-0.050 0.000	***-0.064 0.000
Connected Exchange Rate Volatility: Trade Weighted	0.001 0.140	0.001 0.230	0.001 0.430	0.001 0.280	0.000 0.410	0.000 0.460	0.001 0.310	0.001 0.220
Investment Profile	0.012 0.220	0.016 0.110	0.014 0.160	0.016 0.130	*0.019 0.060	**0.022 0.030	0.011 0.270	0.013 0.210
Quality of Institutions	0.005 0.760	0.005 0.740	0.000 0.990	0.001 0.940	0.001 0.960	0.002 0.900	0.001 0.960	0.001 0.930
GDP	***0.393 0.010	***0.477 0.000	***0.419 0.010	***0.559 0.000	**0.315 0.040	***0.433 0.000	***0.388 0.010	***0.533 0.000
GDP Growth	**0.007 0.050	**0.007 0.050	**0.008 0.020	**0.007 0.040	**0.008 0.030	**0.007 0.040	**0.007 0.030	**0.007 0.050
Per Capita GDP	-0.238 0.110	**-0.328 0.020	-0.184 0.240	**-0.359 0.020	-0.168 0.260	*-0.276 0.060	-0.197 0.200	***-0.367 0.010
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1511	1511	1513	1513	1511	1511	1513	1513
Adjusted R ²	0.21	0.197	0.211	0.202	0.21	0.196	0.211	0.201
F statistic	38.513	29.318	40.894	25.788	43.712	36.597	42.836	32.976

Table 4: The Propagation of Merger Activity through the Trade Network – Industry Level

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the industry-country's cross-border/domestic merger activity being in the highest quartile of all values for that industry-country over the sample period in the year under consideration, and is based on the number of M&A transactions. The independent variables are trade-weighted connected M&As (defined in text). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity, defined as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A and B present the results of cross-border and domestic merger waves, respectively. Standard errors are corrected for heteroscedasticity and clustered at country-industry level (p-value in parentheses). Inclusion of fixed effects and controls is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – Cross-border waves based on the number of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.061 0.000	***0.061 0.000	***0.058 0.000	***0.059 0.000	***0.062 0.000	***0.061 0.000	***0.060 0.000	***0.062 0.000
Connected M&A: Subject Imports from Connected	***1.239 0.000				***1.245 0.000			
Connected M&A: Connected Imports from Subject		***0.532 0.000				***0.545 0.000		
Connected M&A: Subject Exports to Connected			***1.469 0.000				***1.621 0.000	
Connected M&A: Connected Exports to Subject				***0.545 0.000				***0.624 0.000
Degree Centrality	***0.103 0.010	***0.106 0.010	***0.103 0.000	***0.121 0.000				
Degree Centrality x M&A Activity	0.003 0.990	-0.154 0.720	0.467 0.240	0.236 0.560				
Eigenvector Centrality					0.060 0.210	0.068 0.160	0.048 0.330	0.068 0.170
Eigenvector Centrality x M&A Activity					0.817 0.380	0.592 0.520	-0.408 0.660	-0.638 0.490
Year Fixed Effects	Yes							
Country x Industry Fixed Effects	Yes							
Observations	13018	13018	12871	12871	13018	13018	12871	12871
Adjusted R ²	0.113	0.112	0.111	0.11	0.113	0.112	0.11	0.109
F statistic	9.721	9.732	10.467	10.267	9.371	9.589	9.495	9.445

Panel B – Domestic Waves based on the number of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.097 0.000	***0.095 0.000	***0.091 0.000	***0.093 0.000	***0.095 0.000	***0.094 0.000	***0.095 0.000	***0.097 0.000
Connected M&A: Subject Imports from Connected	**0.598 0.050				*0.558 0.070			
Connected M&A: Connected Imports from Subject		***0.485 0.000				***0.475 0.000		
Connected M&A: Subject Exports to Connected			***1.420 0.000				***1.549 0.000	
Connected M&A: Connected Exports to Subject				**0.307 0.030				***0.371 0.010
Degree Centrality	0.042 0.340	0.045 0.310	***0.120 0.000	***0.137 0.000				
Degree Centrality x M&A Activity	0.056 0.930	-0.159 0.810	0.240 0.700	0.082 0.900				
Eigenvector Centrality					***0.181 0.000	***0.190 0.000	0.080 0.190	0.097 0.120
Eigenvector Centrality x M&A Activity						-0.636 0.640	-0.959 0.480	0.172 0.900
Year Fixed Effects	Yes							
Country x Industry Fixed Effects	Yes							
Observations	13018	13018	12871	12871	13018	13018	12871	12871
Adjusted R ²	0.089	0.089	0.091	0.09	0.089	0.088	0.09	0.089
F statistic	7.595	7.911	9.283	9.027	8.032	8.422	8.293	7.952

Table 5 - Trade Shocks:

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the country's cross-border merger activity being in the highest quartile of all values for that country over the sample period in the year under consideration, and is based on the number of M&A transactions. The variables of interest are Shock and interaction of Shock with trade-weighted connected M&As (defined in text), whereas the country under consideration experiences significant tariff cuts, adopts the Euro as its currency, joins the European Union (EU), European Economic Area (EEA) or the World Trade Organization (WTO). Column 1 presents the results when the shock variable is based on the countries experiencing major tariff cuts, column 2 presents the results when the countries adopt the Euro as their currency and columns 3–5 present the results when the countries are joining the EU, EEA and WTO respectively. Degree centrality is a country's number of intercountry connections. M&A Activity is the aggregate worldwide M&A activity, defined as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Standard errors are corrected for heteroscedasticity and clustered at country level (p-value in parentheses). Inclusion of controls and fixed effects is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

	Tariff Cuts	Euro	EU	EEA	WTO
	1	2	3	4	5
Lagged High M&A State	***0.223 0.000	*0.069 0.100	0.050 0.260	**0.086 0.030	***0.187 0.000
Connected M&A: Subject Imports from Connected	**8.688 0.030	***27.469 0.000	**14.193 0.020	*13.21 0.070	1.600 0.730
Shock	***-0.967 0.000	***-0.645 0.010	**-0.231 0.050	**-0.440 0.020	**-0.373 0.020
Connected M&A x Shock	***24.622 0.000	***27.161 0.000	**9.555 0.050	**13.331 0.030	**7.263 0.030
Degree Centrality	-0.061 0.640	0.041 0.770	-0.069 0.620	-0.025 0.830	-0.061 0.550
Degree Centrality x M&A Activity	***2.452 0.000	*1.680 0.060	***2.949 0.000	**1.925 0.020	***3.085 0.000
Country Characteristics	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	1041	910	978	1133	1322
Adjusted R ²	0.261	0.181	0.271	0.198	0.214
F statistic	140.806	323.797	138.0901	233.04	172.879

Table 6 - The Interaction of Trade and Global Merger Waves:

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the country's cross-border merger activity being in the highest quartile of all values for that country over the sample period in the year under consideration, and is based on the number of M&A transactions. The independent variables are trade-weighted connected M&As (defined in text). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity, defined as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A presents the results for in-wave periods (1989, 1995-2001, 2004-2008, 2014-2015) and Panel B presents the results for out-wave periods (1990-1994, 2002, 2003, 2009-2013, 2016). Standard errors are corrected for heteroscedasticity and clustered at country level (p-value in parentheses). Inclusion of controls and fixed effects is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – In-wave Periods

	1	2	3	4	5	6	7	8
Lagged High M&A State	0.040 0.370	0.039 0.370	0.041 0.330	0.041 0.340	0.040 0.360	0.038 0.370	0.032 0.460	0.034 0.420
Connected M&A: Subject Imports from Connected	***11.496 0.000				***11.711 0.000			
Connected M&A: Connected Imports from Subject		*2.638 0.060				**2.982 0.030		
Connected M&A: Subject Exports to Connected			***8.988 0.010				***8.876 0.010	
Connected M&A: Connected Exports to Subject				***3.708 0.000				***3.141 0.000
Degree Centrality	*-0.252 0.070	-0.156 0.320	-0.178 0.160	-0.129 0.340				
Degree Centrality x M&A Activity	***3.93 0.000	**3.089 0.020	***2.842 0.000	*1.755 0.090				
Eigenvector Centrality					-9.106 0.120	-7.457 0.200	-3.299 0.610	0.642 0.920
Eigenvector Centrality x M&A Activity					***181.859 0.000	***116.662 0.080	***217.729 0.000	**144.74 0.050
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	813	813	812	812	813	813	812	812
Adjusted R ²	0.202	0.189	0.202	0.187	0.201	0.180	0.200	0.179
F statistic	385.963	399.112	38.221	23.582	287.939	319.446	38.126	25.018

Panel B – Out-of-wave Periods

	1	2	3	4	5	6	7	8
Lagged High M&A State	-0.008	-0.013	-0.016	-0.024	-0.009	-0.014	-0.016	-0.021
	0.860	0.760	0.740	0.600	0.840	0.750	0.720	0.640
Connected M&A: Subject Imports from Connected	2.814				3.614			
	0.490				0.370			
Connected M&A: Connected Imports from Subject		*3.062				*2.977		
		0.060				0.060		
Connected M&A: Subject Exports to Connected			2.968				3.733	
			0.360				0.250	
Connected M&A: Connected Exports to Subject				***3.734				***3.552
				0.000				0.010
Degree Centrality	-0.056	-0.039	-0.010	0.050				
	0.680	0.780	0.910	0.580				
Degree Centrality x M&A Activity	**3.266	1.555	***3.245	1.199				
	0.020	0.420	0.010	0.440				
Eigenvector Centrality					-2.481	-0.795	-8.416	-5.085
					0.680	0.900	0.200	0.470
Eigenvector Centrality x M&A Activity					***184.158	85.986	***254.034	116.983
					0.010	0.400	0.000	0.290
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	696	696	699	699	696	696	699	699
Adjusted R ²	0.135	0.128	0.133	0.132	0.137	0.128	0.133	0.128
F statistic	31.43	24.114	30.687	19.712	37.413	27.635	35.553	21.218

Table 7 – Placebo Tests

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the country's cross-border/domestic merger activity being in the highest quartile of all values for that country over the sample period in the year under consideration, and is based on the number of M&A transactions. The independent variables are scrambled trade-weighted connected M&As. Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity defined, as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A and B present the results of cross-border and domestic merger waves, respectively. Standard errors are corrected for heteroscedasticity and clustered at country level (p-value in parentheses). Inclusion of fixed effects is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – Cross-border waves based on the number of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.232 0.000	***0.232 0.000	***0.243 0.000	***0.243 0.000	***0.240 0.000	***0.240 0.000	***0.232 0.000	***0.232 0.000
Connected M&A: Subject Imports from Connected	-0.077 0.170				-0.075 0.190			
Connected M&A: Connected Imports from Subject		-0.002 0.970				-0.008 0.910		
Connected M&A: Subject Exports to Connected			0.020 0.400				0.016 0.520	
Connected M&A: Connected Exports to Subject				-0.018 0.540				-0.015 0.620
Degree Centrality	0.026 0.790	0.025 0.800	-0.059 0.260	-0.059 0.260				
Degree Centrality x M&A Activity	***2.624 0.000	***2.636 0.000	***2.204 0.000	***2.213 0.000				
Eigenvector Centrality					-0.974 0.620	-0.976 0.620	1.791 0.350	1.821 0.350
Eigenvector Centrality x M&A Activity					***56.522 0.010	***57.050 0.010	***73.119 0.000	***73.191 0.000
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1511	1511	1513	1513	1511	1511	1513	1513
Adjusted R ²	0.254	0.253	0.256	0.256	0.242	0.242	0.247	0.246
F statistic	132.194	128.82	92.238	99.834	140.242	137.966	69.817	73.719

Panel B – Domestic waves based on the number of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.269 0.000	***0.269 0.000	***0.271 0.000	***0.271 0.000	***0.267 0.000	***0.267 0.000	***0.266 0.000	***0.267 0.000
Connected M&A: Subject Imports from Connected	-0.034 0.630				-0.027 0.700			
Connected M&A: Connected Imports from Subject		0.049 0.440				0.048 0.460		
Connected M&A: Subject Exports to Connected			0.025 0.380				0.023 0.420	
Connected M&A: Connected Exports to Subject				-0.014 0.620				-0.011 0.700
Degree Centrality	-0.001 0.990	-0.002 0.980	*-0.101 0.090	*-0.101 0.090				
Degree Centrality x M&A Activity	***4.002 0.000	***4.052 0.000	***3.637 0.000	***3.642 0.000				
Eigenvector Centrality					0.317 0.880	0.284 0.900	-1.969 0.370	-1.901 0.400
Eigenvector Centrality x M&A Activity					***104.109 0.000	***105.540 0.000	***127.783 0.000	***127.503 0.000
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1511	1511	1513	1513	1511	1511	1513	1513
Adjusted R ²	0.195	0.196	0.198	0.197	0.194	0.195	0.198	0.196
F statistic	36.381	38.651	32.975	33.065	39.439	41.403	35.32	35.866

Table 8 – Controlling for Market Valuation, Geographical Distance and Culture

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the country's cross-border/domestic merger activity being in the highest quartile of all values for that country over the sample period in the year under consideration, and is based on the number of M&A transactions. The independent variables are trade-weighted connected M&As (defined in text). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity defined, as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Standard errors are corrected for heteroscedasticity and clustered at country level (p-value in parentheses). Inclusion of fixed effects is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.224 0.000	***0.235 0.000	***0.235 0.000	***0.244 0.000	***0.225 0.000	***0.237 0.000	***0.225 0.000	***0.235 0.000
Connected M&A: Subject Imports from Connected	***9.901 0.010				***10.227 0.010			
Connected M&A: Connected Imports from Subject		**2.242 0.050				**2.326 0.050		
Connected M&A: Subject Exports to Connected			***7.691 0.010				***7.230 0.010	
Connected M&A: Connected Exports to Subject				**2.094 0.020				*1.697 0.060
Degree Centrality	-0.136 0.290	-0.078 0.580	-0.047 0.470	-0.017 0.810				
Degree Centrality x M&A Activity	***2.76 0.010	1.791 0.130	**2.228 0.020	1.530 0.150				
Eigenvector Centrality					-0.126 0.960	-0.122 0.960	2.642 0.260	3.972 0.130
Eigenvector Centrality x M&A Activity					**71.167 0.020	40.951 0.260	**73.037 0.020	50.532 0.170
Connected Stock Market Valuation: Trade Weighted	-0.010 0.640	0.001 0.960	0.007 0.710	0.014 0.460	-0.011 0.600	0.001 0.980	0.005 0.780	0.012 0.510
Connected Geographical Distance: Trade Weighted	***0.238 0.000	**0.211 0.020	0.120 0.110	0.082 0.240	***0.187 0.010	**0.182 0.020	0.054 0.480	0.017 0.800
Connected Culture Distance: Trade Weighted	0.036 0.670	-0.031 0.670	0.167 0.110	0.071 0.480	0.085 0.310	-0.003 0.960	***0.269 0.010	**0.197 0.050
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1117	1117	1119	1119	1117	1117	1119	1119
Adjusted R ²	0.291	0.28	0.29	0.283	0.286	0.27	0.288	0.275
F statistic	123	133.633	51.205	48.18	123.374	133.669	70.169	73.001

Table 9 - Cross-border activity at the country-pair level:

This table presents the coefficient estimates of OLS estimation of Fixed Effects Panel Regressions. The dependent variable is Country-pair Merger Activity, defined as either proportion of country j 's merger with country i , relative to all of j 's cross-border mergers (*for inbound*) or proportion of country i 's merger with country j , relative to all of i 's cross-border mergers (*for outbound*). The independent variable is 'Subject Imports from Connected', defined as country i 's imports from country j , relative to all of i 's imports. Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity, defined as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A presents the results of inbound merger activity and Panel B presents the results of outbound merger activity. Standard errors are corrected for heteroscedasticity and clustered at country-pair level (p-value in parentheses). Inclusion of controls and fixed effects is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – Inbound Merger Activity

	1	2	4	3	5
Subject Imports from Connected	***0.141 0.000	***0.068 0.001	***0.064 0.003	***0.060 0.004	**0.052 0.020
Degree Centrality		***0.028 0.000		***0.024 0.000	
Degree Centrality * Subject Imports from Connected		***0.732 0.000		***0.733 0.000	
Eigenvector Centrality			***0.071 0.000		***0.043 0.000
Eigenvector Centrality * Subject Imports from Connected			**1.337 0.027		**1.336 0.025
Acquirer Country Characteristics	No	No	No	Yes	Yes
Target Country Characteristics	No	No	No	Yes	Yes
Country-Pair Time Variant Characteristics	No	No	No	Yes	Yes
Country-Pair Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Number of Observations	124496	124496	124496	124496	124496
Adjusted R ²	0.010	0.074	0.043	0.076	0.048

Panel B – Outbound Merger Activity

	1	2	3	4	5
Subject Imports from Connected	***0.363 0.000	***0.307 0.000	***0.267 0.000	***0.279 0.000	***0.237 0.000
Degree Centrality		-0.001 0.422		***-0.010 0.000	
Degree Centrality * Subject Imports from Connected		**0.527 0.011		**0.509 0.011	
Eigenvector Centrality			-0.002 0.395		***-0.026 0.000
Eigenvector Centrality * Subject Imports from Connected			***1.684 0.000		***1.677 0.000
Acquirer Country Characteristics	No	No	No	Yes	Yes
Target Country Characteristics	No	No	No	Yes	Yes
Country-Pair Time Variant Characteristics	No	No	No	Yes	Yes
Country-Pair Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Number of Observations	124496	124496	124496	124496	124496
Adjusted R ²	0.070	0.078	0.083	0.084	0.089

Table 9: Granger Causality Test

The table presents the results of a Granger causality test (Granger, 1969) between merger activity and trade flows. The Granger causality test rests on a panel vector auto-regression composed of two equations (one for modelling the dynamic of merger activity and the second, the dynamic of trade-flows) at the country-pair level. Cross-border merger activity and trade flows intensity are measured as for inbound and outbound merger analyses. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively. The Wald statistics test the null hypothesis of absence of causal relation from imports to mergers (left Column) and from mergers to imports (right Column).

<i>Response of</i>	<i>Response to</i>	
	<i>Mergers_t</i>	<i>Imports_t</i>
Mergers _{t-1}	***0.301 0.000	0.000 0.695
Mergers _{t-2}	***0.021 0.000	0.000 0.580
Imports _{t-1}	***1.512 0.000	***0.941 0.000
Imports _{t-2}	-0.243 0.186	***0.044 0.338
Wald Test (<i>Prob>Chi2</i>)		
Response of <i>Imports</i> to <i>Mergers</i>	***19.973	
Response of <i>Mergers</i> to <i>Imports</i>		0.307
Number of Observations	10723	
Number of Country-pairs	1899	

Internet Appendix

This internet appendix presents additional results to accompany the paper “International Trade and the Propagation of Mergers Waves”.

The contents are as follows:

Internet Appendix A presents most central countries in the imports-exports and merger networks in years 1989, 2002 and 2016 respectively, and the correlation between industry-country characteristics across networks.

Internet Appendix B presents the baseline results from Table 3 in the paper, with Arellano-Bond Estimation Method.

Internet Appendix C presents the results of Wooldridge (2010)’s Strict Exogeneity Test.

Internet Appendix D presents the baseline results from Table 3 – 8 in the paper, with dependent variable based on value of transactions.

Internet Appendix E presents the results of industry level analyses and restricting to manufacturing industries only.

Internet Appendix F presents the baseline results after detrending the dependent variables.

Internet Appendix G presents the baseline results after excluding US from the sample.

Internet Appendix H presents the baseline results after excluding Gateway Countries (Netherlands and Singapore).

Appendix A - Networks Centrality

Panels A to C list the most central countries in the imports-exports and merger networks (based on Degree Centrality) in years 1989, 2002 and 2016, respectively. Panel D describes the correlation between country characteristics across networks (either Degree Centrality or Eigenvector Centrality). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. In panels A to C, * indicates a merger country also in top 15 Imports/Exports countries and in Panel D, statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A - The Most Central Countries in the Imports-Exports and Merger Networks in Year 1989:

Rank	Import Network	Export Network	Merger Network
1	United States	United States	*United Kingdom
2	Japan	Japan	*United States
3	United Kingdom	France	*France
4	France	Canada	*Japan
5	Canada	United Kingdom	*Australia
6	Italy	Italy	Germany
7	Netherlands	South Korea	*Switzerland
8	Spain	Netherlands	*Canada
9	South Korea	Sweden	Luxembourg
10	Singapore	Singapore	*Netherlands
11	Sweden	Switzerland	Finland
12	Switzerland	Spain	*Sweden
13	Australia	Brazil	New Zealand
14	Thailand	Australia	*Mexico
15	Mexico	Malaysia	*Italy

Panel B - The Most Central Countries in the Imports-Exports and Merger Networks in Year 2002:

Rank	Import Network	Export Network	Merger Network
1	United States	United States	*United Kingdom
2	Germany	Germany	*United States
3	United Kingdom	Japan	*Germany
4	Japan	China	*Hong Kong
5	France	France	*France
6	China	United Kingdom	Switzerland
7	Italy	Canada	Sweden
8	Canada	Italy	*Canada
9	Belgium	Netherlands	*Netherlands
10	Hong Kong	Belgium	*Mexico
11	Netherlands	Hong Kong	Norway
12	Mexico	Mexico	Australia
13	Spain	South Korea	*Italy
14	South Korea	Spain	*Spain
15	Singapore	Singapore	Luxembourg

Panel C - The Most Central Countries in the Imports-Exports and Merger Networks in Year 2016:

Rank	Import Network	Export Network	Merger Network
1	United States	China	*United States
2	China	United States	*China
3	Germany	Germany	*Canada
4	United Kingdom	Japan	*Japan
5	Japan	Hong Kong	*Germany
6	France	France	*France
7	Hong Kong	South Korea	*Hong Kong
8	Canada	Italy	*United Kingdom
9	Italy	Netherlands	Ireland
10	Netherlands	United Kingdom	Luxembourg
11	South Korea	Belgium	*Netherlands
12	Mexico	Canada	*Switzerland
13	Belgium	Mexico	*Singapore
14	India	Singapore	South Africa
15	Spain	Switzerland	Australia

Panel D - Correlation between Industry-Country Characteristics across Networks

	Degree Centrality: Imports Network	Degree Centrality: Exports Network	Eigenvector Centrality: Imports Network	Eigenvector Centrality: Exports Network
Degree Centrality: Exports Network	***0.707 0.000			
Degree Centrality: Mergers Network	****0.158 0.000	***0.157 0.000		
Eigenvector Centrality: Exports Network			***0.853 0.000	
Eigenvector Centrality: Mergers Network			***0.087 0.000	***0.076 0.000

Appendix B: The Propagation of Merger Activity through the Trade Network – Arellano-Bond Estimation

This table presents the coefficient estimates of Arellano-Bond estimator. The dependent variable is High M&A State, defined as the industry-country's cross-border/domestic merger activity being in the highest quartile of all values for that industry-country over the sample period in the year under consideration, and is based on the number of M&A transactions. The independent variables are trade-weighted connected M&As (defined in text). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity, defined as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A and B present the results of cross-border merger waves, when the dependent variable is based on the number of M&A transactions and on the value of M&A transactions, respectively. Standard errors are corrected for heteroscedasticity and clustered at country-industry level (p-value in parentheses). Inclusion of fixed effects and controls is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – Cross-border waves based on the number of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.207 0.000	***0.224 0.000	***0.217 0.000	***0.217 0.000	***0.211 0.000	***0.231 0.000	***0.205 0.000	***0.207 0.000
Connected M&A: Subject Imports from Connected	***16.549 0.000				***16.937 0.000			
Connected M&A: Connected Imports from Subject		2.700 0.200				3.005 0.180		
Connected M&A: Subject Exports to Connected			***17.289 0.000				***17.227 0.000	
Connected M&A: Connected Exports to Subject				**3.624 0.030				**3.359 0.030
Degree Centrality	-0.071 0.590	0.176 0.300	-0.081 0.280	0.015 0.880				
Degree Centrality x M&A Activity	***3.382 0.000	**2.168 0.030	***2.988 0.000	*1.694 0.080				
Eigenvector Centrality					1.129 0.730	2.874 0.360	2.574 0.410	*5.766 0.080
Eigenvector Centrality x M&A Activity					***75.716 0.010	37.187 0.270	***98.448 0.000	*55.973 0.090
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1255	1255	1261	1261	1255	1255	1261	1261
Wald Chi ²	1836.24	2090.32	1879.69	2068.53	1535.14	1734.58	1571.27	1904.67

Panel B – Cross-border waves based on the value of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.215 0.000	***0.228 0.000	***0.222 0.000	***0.218 0.000	***0.218 0.000	***0.236 0.000	***0.210 0.000	***0.208 0.000
Connected M&A: Subject Imports from Connected	***15.494 0.000				***16.05 0.000			
Connected M&A: Connected Imports from Subject		*2.925 0.070				**3.350 0.050		
Connected M&A: Subject Exports to Connected			***16.761 0.000				***16.476 0.000	
Connected M&A: Connected Exports to Subject				***4.265 0.000				***3.991 0.010
Degree Centrality	-0.066 0.610	0.190 0.270	-0.073 0.340	0.034 0.750				
Degree Centrality x M&A Activity	***3.367 0.000	1.576 0.120	***3.009 0.000	1.419 0.150				
Eigenvector Centrality					1.600 0.630	2.855 0.370	2.529 0.430	*5.851 0.080
Eigenvector Centrality x M&A Activity					***77.840 0.010	20.741 0.540	***98.515 0.000	46.792 0.170
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1255	1255	1261	1261	1255	1255	1261	1261
Wald Chi ²	2338.23	2192.62	2329.50	2007.09	2397.86	1669.24	1814.29	1972.44

Appendix C: The Propagation of Merger Activity through the Trade Network – Wooldridge (2010)'s Strict Exogeneity Test

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the industry-country's cross-border/domestic merger activity being in the highest quartile of all values for that industry-country over the sample period in the year under consideration, and is based on the number of M&A transactions. The independent variables are trade-weighted connected M&As (defined in text). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity, defined as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A and B present the results of cross-border merger waves, when the dependent variable is based on the number of M&A transactions and on the value of M&A transactions, respectively. Standard errors are corrected for heteroscedasticity and clustered at country-industry level (p-value in parentheses). Inclusion of fixed effects and controls is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – Cross-border waves based on the number of transactions

	1	2	3	4
Connected M&A: Subject Imports from Connected (<i>Contemp.</i>)	***12.242 0.000			
Connected M&A: Subject Imports from Connected (<i>Lead</i>)	3.185 0.280			
Connected M&A: Connected Imports from Subject (<i>Contemp.</i>)		*2.161 0.090		
Connected M&A: Connected Imports from Subject (<i>Lead</i>)		1.953 0.200		
Connected M&A: Subject Exports to Connected (<i>Contemp.</i>)			***10.009 0.000	
Connected M&A: Subject Exports to Connected (<i>Lead</i>)			3.289 0.280	
Connected M&A: Connected Exports to Subject (<i>Contemp.</i>)				**2.818 0.050
Connected M&A: Connected Exports to Subject (<i>Lead</i>)				1.497 0.330
Year Fixed Effects	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Observations	1579	1579	1581	1581
Adjusted R ²	0.220	0.200	0.210	0.200
F statistic	69.830	24.700	66.200	24.220

Panel B – Cross-border waves based on the value of transactions

	1	2	3	4
Connected M&A: Subject Imports from Connected (<i>Contemp.</i>)	***9.707 0.010			
Connected M&A: Subject Imports from Connected (<i>Lead</i>)	3.179 0.270			
Connected M&A: Connected Imports from Subject (<i>Contemp.</i>)		**2.768 0.030		
Connected M&A: Connected Imports from Subject (<i>Lead</i>)		0.899 0.570		
Connected M&A: Subject Exports to Connected (<i>Contemp.</i>)			***7.879 0.000	
Connected M&A: Subject Exports to Connected (<i>Lead</i>)			*3.473 0.090	
Connected M&A: Connected Exports to Subject (<i>Contemp.</i>)				***3.226 0.010
Connected M&A: Connected Exports to Subject (<i>Lead</i>)				0.758 0.580
Year Fixed Effects	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Observations	1579	1579	1581	1581
Adjusted R ²	0.210	0.190	0.210	0.200
F statistic	29.770	18.580	32.390	19.930

Appendix D.1: The Propagation of Merger Activity through the Trade Network – Country Level

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the country's cross-border/domestic merger activity being in the highest quartile of all values for that country over the sample period in the year under consideration, and is based on the value of M&A transactions. The independent variables are trade-weighted connected M&As (defined in text). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity defined, as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A and B present the results of cross-border and domestic merger waves, respectively. Standard errors are corrected for heteroscedasticity and clustered at country level (p-value in parentheses). Inclusion of fixed effects is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – Cross-border waves based on the value of transactions

	1	2	3	4	5	6	7	8	
Lagged High M&A State	***0.176 0.000	***0.184 0.000	***0.188 0.000	***0.192 0.000	***0.180 0.000	***0.188 0.000	***0.176 0.000	***0.181 0.000	
Connected M&A: Subject Imports from Connected	***8.791 0.000				***8.871 0.000				
Connected M&A: Connected Imports from Subject		**1.896 0.040				***2.444 0.010			
Connected M&A: Subject Exports to Connected			***6.656 0.010				**6.037 0.020		
Connected M&A: Connected Exports to Subject				***2.601 0.000				**2.100 0.020	
Degree Centrality	-0.128 0.120	-0.055 0.560	-0.090 0.140	-0.045 0.490					
Degree Centrality x M&A Activity	***2.544 0.000	*1.643 0.090	***1.788 0.010	0.828 0.350					
Eigenvector Centrality					-1.479 0.430	-0.788 0.700	0.813 0.680	2.359 0.280	
Eigenvector Centrality x M&A Activity						**53.311 0.020	17.107 0.570	***69.535 0.000	39.412 0.220
Country Characteristics	Yes								
Year Fixed Effects	Yes								
Country Fixed Effects	Yes								
Observations	1511	1511	1513	1513	1511	1511	1513	1513	
Adjusted R ²	0.246	0.237	0.251	0.242	0.158	0.126	0.142	0.126	
F statistic	188.762	195.053	78.478	51.500	182.010	196.015	62.929	52.056	

Panel B – Domestic waves based on value of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.184 0.000	***0.180 0.000	***0.182 0.000	***0.179 0.000	***0.186 0.000	***0.181 0.000	***0.180 0.000	***0.178 0.000
Connected M&A: Subject Imports from Connected	2.138 0.380				2.841 0.240			
Connected M&A: Connected Imports from Subject		**2.119 0.020				***2.447 0.010		
Connected M&A: Subject Exports to Connected			2.186 0.360				2.137 0.380	
Connected M&A: Connected Exports to Subject				***2.417 0.010				**2.117 0.030
Degree Centrality	-0.063 0.370	-0.030 0.700	-0.083 0.110	-0.036 0.510				
Degree Centrality x M&A Activity	***4.077 0.000	**2.635 0.030	***3.243 0.000	*1.990 0.070				
Eigenvector Centrality					-1.667 0.430	-0.552 0.810	-4.087 0.050	-2.951 0.150
Eigenvector Centrality x M&A Activity					***99.536 0.000	51.961 0.140	***130.232 0.000	***91.799 0.010
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1511	1511	1513	1513	1511	1511	1513	1513
Adjusted R ²	0.184	0.175	0.18	0.173	0.227	0.183	0.222	0.194
F statistic	62.376	60.63	39.727	32.217	54.037	54.232	48.229	39.197

Appendix D.2: The Propagation of Merger Activity through the Trade Network – Industry Level

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the industry-country's cross-border/domestic merger activity being in the highest quartile of all values for that industry-country over the sample period in the year under consideration, and is based on the number of M&A transactions. The independent variables are trade-weighted connected M&As (defined in text). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity, defined as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A and B present the results of cross-border and domestic merger waves, respectively. Standard errors are corrected for heteroscedasticity and clustered at country-industry level (p-value in parentheses). Inclusion of fixed effects and controls is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – Cross-border waves based on the value of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.033 0.000	***0.033 0.000	***0.033 0.000	***0.035 0.000	***0.034 0.000	***0.033 0.000	***0.036 0.000	***0.038 0.000
Connected M&A: Subject Imports from Connected	***0.865 0.000				***0.863 0.000			
Connected M&A: Connected Imports from Subject		***0.509 0.000				***0.531 0.000		
Connected M&A: Subject Exports to Connected			***1.481 0.000				***1.592 0.000	
Connected M&A: Connected Exports to Subject				***0.369 0.000				***0.458 0.000
Degree Centrality	**0.081 0.050	**0.084 0.040	**0.064 0.050	**0.082 0.020				
Degree Centrality x M&A Activity	0.419 0.340	0.223 0.610	***0.973 0.010	**0.795 0.040				
Eigenvector Centrality					0.058 0.210	0.067 0.140	0.024 0.600	0.044 0.350
Eigenvector Centrality x M&A Activity					0.829 0.340	0.532 0.540	0.211 0.810	0.030 0.970
Country Characteristics	Yes							
Year Fixed Effects	Yes							
Country x Industry Fixed Effects	Yes							
Observations	13018	13018	12871	12871	13018	13018	12871	12871
Adjusted R ²	0.109	0.108	0.108	0.105	0.03	0.03	0.028	0.026
F statistic	10.203	10.63	12.272	11.653	9.688	10.313	10.437	9.838

Panel B – Domestic Waves based on the value of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.035 0.000	***0.033 0.000	***0.035 0.000	***0.035 0.000	***0.035 0.000	***0.033 0.000	***0.039 0.000	***0.040 0.000
Connected M&A: Subject Imports from Connected	***0.852 0.000				***0.837 0.000			
Connected M&A: Connected Imports from Subject		***0.573 0.000				***0.592 0.000		
Connected M&A: Subject Exports to Connected			***1.003 0.000				***1.138 0.000	
Connected M&A: Connected Exports to Subject				***0.420 0.000				***0.500 0.000
Degree Centrality	0.041 0.350	0.047 0.280	***0.105 0.010	***0.117 0.000				
Degree Centrality x M&A Activity	0.955 0.130	0.637 0.320	0.931 0.130	0.720 0.250				
Eigenvector Centrality					0.063 0.260	0.077 0.170	0.030 0.610	0.047 0.420
Eigenvector Centrality x M&A Activity					1.164 0.360	0.705 0.580	1.124 0.380	0.873 0.500
Country Characteristics	Yes							
Year Fixed Effects	Yes							
Country x Industry Fixed Effects	Yes							
Observations	13018	13018	12871	12871	13018	13018	12871	12871
Adjusted R ²	0.036	0.036	0.036	0.035	0.045	0.045	0.044	0.044
F statistic	8.939	9.413	8.615	9.044	8.377	9.044	7.122	7.621

Appendix D.3 - Trade Shocks:

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the country's cross-border merger activity being in the highest quartile of all values for that country over the sample period in the year under consideration. The variables of interest are Shock and interaction of Shock with trade-weighted connected M&As (defined in text), whereas the country under consideration experiences significant tariff cuts, adopts the Euro as its currency, joins the European Union (EU), European Economic Area (EEA) or the World Trade Organization (WTO). In all Panels, column 1 presents the results when the shock variable is based on the countries experiencing major tariff cuts, column 2 presents the results when the countries adopt the Euro as their currency and columns 3–5 present the results when the countries are joining the EU, EEA and WTO respectively. Degree centrality is a country's number of intercountry connections. M&A Activity is the aggregate worldwide M&A activity, defined as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A presents the results when the dependent variable is based on the value of M&A transactions. Panel B and C present the results with Eigenvector Centrality, and when the dependent variable is based on the number of M&A transactions and the value of M&A transactions, respectively. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. Standard errors are corrected for heteroscedasticity and clustered at country level (p-value in parentheses). Inclusion of controls and fixed effects is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – Cross-border waves based on the value of transactions

	Tariff Cuts		Euro	EU	EEA	WTO
	1	2	3	4	5	
Lagged High M&A State	***0.181 0.000	-0.015 0.720	-0.004 0.930	0.034 0.400	***0.156 0.000	
Connected M&A: Subject Imports from Connected	**7.649 0.030	***24.938 0.000	*9.797 0.080	*11.348 0.060	1.678 0.690	
Shock	***-0.861 0.000	**-0.467 0.020	-0.116 0.300	**-0.358 0.020	***-0.423 0.000	
Connected M&A x Shock	***22.930 0.000	***23.512 0.000	***9.196 0.030	***12.397 0.010	***7.352 0.010	
Degree Centrality	*-0.183 0.090	-0.078 0.640	0.007 0.950	-0.072 0.590	-0.133 0.170	
Degree Centrality x M&A Activity	***2.445 0.010	**2.245 0.050	***2.769 0.000	***2.620 0.000	***3.522 0.000	
Country Characteristics	Yes	Yes	Yes	Yes	Yes	
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	
Observations	1041	910	978	1133	1322	
Adjusted R ²	0.246	0.180	0.306	0.214	0.216	
F statistic	124.034	506.431	322.2703	584.376	229.53	

Panel B – Cross-border waves based on the number of transactions

	Tariff Cuts	Euro	EU	EEA	WTO
	1	2	3	4	5
Lagged High M&A State	***0.223 0.000	0.068 0.110	0.054 0.220	**0.087 0.030	***0.191 0.000
Connected M&A: Subject Imports from Connected	**8.993 0.020	***29.126 0.000	**14.351 0.020	*13.538 0.070	1.331 0.770
Tariff Shock	***-0.958 0.000	***-0.657 0.010	**-0.270 0.020	**-0.487 0.020	***-0.413 0.010
Connected M&A x Tariff Shock	***24.864 0.000	***27.767 0.000	**10.990 0.020	**14.427 0.020	**8.136 0.020
Eigenvector Centrality	2.009 0.410	4.646 0.420	-6.189 0.150	1.565 0.660	-2.201 0.380
Eigenvector Centrality x M&A Activity	**56.209 0.020	69.730 0.130	***115.002 0.000	*58.067 0.080	***86.318 0.010
Country Characteristics	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	1041	910	978	1133	1322
Adjusted R ²	0.256	0.175	0.255	0.186	0.214
F statistic	143.692	311.76	139.2145	233.7	163.083

Panel C – Cross-border waves based on the value of transactions

	Tariff Cuts	Euro	EU	EEA	WTO
	1	2	3	4	5
Lagged High M&A State	***0.181 0.000	-0.020 0.640	0.002 0.960	0.032 0.430	***0.158 0.000
Connected M&A: Subject Imports from Connected	**7.240 0.040	***27.941 0.000	*9.532 0.090	*12.216 0.040	1.237 0.770
Tariff Shock	***-0.855 0.000	***-0.461 0.010	-0.167 0.120	**-0.412 0.010	***-0.471 0.000
Connected M&A x Tariff Shock	***23.351 0.000	***23.541 0.000	***10.819 0.010	***13.506 0.000	***8.219 0.000
Eigenvector Centrality	2.097 0.360	3.293 0.560	-1.420 0.720	1.638 0.660	-2.417 0.330
Eigenvector Centrality x M&A Activity	*46.624 0.100	**102.099 0.050	***94.018 0.010	**82.726 0.020	***96.618 0.000
Country Characteristics	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	1041	910	978	1133	1322
Adjusted R ²	0.158	0.076	0.178	0.116	0.125
F statistic	120.133	551.485	317.3061	588.978	203.23

Appendix D.4 - The Interaction of Trade and Global Merger Waves:

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the country's cross-border merger activity being in the highest quartile of all values for that country over the sample period in the year under consideration, and is based on the value of M&A transactions. The independent variables are trade-weighted connected M&As (defined in text). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity, defined as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A presents the results for in-wave periods (1989, 1995-2001, 2004-2008, 2014-2015) and Panel B presents the results for out-wave periods (1990-1994, 2002, 2003, 2009-2013, 2016). Standard errors are corrected for heteroscedasticity and clustered at country level (p-value in parentheses). Inclusion of controls and fixed effects is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – In-wave Periods

	1	2	3	4	5	6	7	8
Lagged High M&A State	-0.020 0.640	-0.018 0.670	-0.020 0.630	-0.014 0.730	-0.014 0.720	-0.016 0.700	-0.034 0.410	-0.026 0.520
Connected M&A: Subject Imports from Connected	***9.167 0.010				***9.674 0.010			
Connected M&A: Connected Imports from Subject		1.944 0.140				**2.920 0.030		
Connected M&A: Subject Exports to Connected			***7.398 0.010				**7.080 0.020	
Connected M&A: Connected Exports to Subject				***2.890 0.000				**2.161 0.030
Degree Centrality	*-0.209 0.100	-0.120 0.370	-0.171 0.060	-0.124 0.190				
Degree Centrality x M&A Activity	***4.140 0.000	***3.298 0.010	***2.691 0.010	1.663 0.150				
Eigenvector Centrality					*-9.691 0.080	-7.625 0.180	-2.599 0.680	1.367 0.830
Eigenvector Centrality x M&A Activity					***157.635 0.010	77.293 0.290	***217.697 0.000	**155.004 0.040
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	813	813	812	812	813	813	812	812
Adjusted R ²	0.222	0.208	0.220	0.205	0.126	0.092	0.109	0.092
F statistic	683.089	830.035	50.721	32.108	446.851	642.375	37.279	33.37

Panel B – Out-of-wave Periods

	1	2	3	4	5	6	7	8
Lagged High M&A State	0.004 0.940	0.000 0.990	0.003 0.950	-0.004 0.940	0.004 0.930	0.000 0.990	0.003 0.960	-0.002 0.960
Connected M&A: Subject Imports from Connected	2.031 0.600			2.090 0.580				
Connected M&A: Connected Imports from Subject		2.548 0.190			2.269 0.210			
Connected M&A: Subject Exports to Connected			0.781 0.790				1.492 0.620	
Connected M&A: Connected Exports to Subject				2.404 0.110				2.327 0.150
Degree Centrality	-0.153 0.240	-0.134 0.290	-0.021 0.790	0.015 0.860				
Degree Centrality x M&A Activity	**3.472 0.050	1.856 0.500	**3.271 0.030	1.888 0.360				
Eigenvector Centrality					-3.695 0.560	-2.118 0.760	-8.556 0.140	-6.601 0.290
Eigenvector Centrality x M&A Activity					**182.852 0.030	100.451 0.450	**236.621 0.020	146.429 0.280
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	696	696	699	699	696	696	699	699
Adjusted R ²	0.153	0.151	0.148	0.149	0.125	0.100	0.108	0.099
F statistic	33.064	28.137	32.443	29.373	32.815	29.658	32.073	26.405

Appendix D.5 – Placebo Tests

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the country's cross-border/domestic merger activity being in the highest quartile of all values for that country over the sample period in the year under consideration, and is based on the value of M&A transactions. The independent variables are scrambled trade-weighted connected M&As. Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity defined, as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A and B present the results of cross-border and domestic merger waves, respectively. Standard errors are corrected for heteroscedasticity and clustered at country level (p-value in parentheses). Inclusion of fixed effects is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – Cross-border waves based on the value of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.188 0.000	***0.187 0.000	***0.199 0.000	***0.200 0.000	***0.193 0.000	***0.193 0.000	***0.184 0.000	***0.185 0.000
Connected M&A: Subject Imports from Connected	0.012 0.840				0.013 0.820			
Connected M&A: Connected Imports from Subject		-0.015 0.800				-0.020 0.740		
Connected M&A: Subject Exports to Connected			0.042 0.140				0.038 0.190	
Connected M&A: Connected Exports to Subject				-0.027 0.400				-0.023 0.460
Degree Centrality	-0.054 0.570	-0.053 0.580	-0.075 0.240	-0.075 0.240				
Degree Centrality x M&A Activity	***2.511 0.000	***2.497 0.000	***1.751 0.010	**1.759 0.020				
Eigenvector Centrality					-1.307 0.510	-1.295 0.510	1.929 0.360	2.029 0.340
Eigenvector Centrality x M&A Activity					**49.536 0.040	**49.089 0.040	***65.672 0.010	***65.534 0.010
Country Characteristics	Yes	Yes						
Year Fixed Effects	Yes	Yes						
Country Fixed Effects	Yes	Yes						
Observations	1511	1511	1513	1513	1511	1511	1513	1513
Adjusted R ²	0.237	0.237	0.243	0.242	0.128	0.126	0.126	0.124
F statistic	180.059	184.591	83.548	102.968	179.183	183.689	65.209	75.634

Panel B – Domestic waves based on the value of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.185 0.000	***0.185 0.000	***0.183 0.000	***0.181 0.000	***0.187 0.000	***0.188 0.000	***0.180 0.000	***0.178 0.000
Connected M&A: Subject Imports from Connected	0.095 0.190				0.100 0.170			
Connected M&A: Connected Imports from Subject		0.054 0.430				0.053 0.440		
Connected M&A: Subject Exports to Connected			0.015 0.630				0.014 0.630	
Connected M&A: Connected Exports to Subject				***-0.066 0.010				**-0.065 0.020
Degree Centrality	-0.046 0.520	-0.048 0.500	-0.079 0.130	-0.081 0.120				
Degree Centrality x M&A Activity	***4.078 0.000	***4.129 0.000	***3.249 0.000	***3.317 0.000				
Eigenvector Centrality					-1.634 0.440	-1.679 0.440	*-3.729 0.060	**-3.819 0.050
Eigenvector Centrality x M&A Activity					***99.798 0.000	***100.441 0.000	***130.035 0.000	***131.326 0.000
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1511	1511	1513	1513	1511	1511	1513	1513
Adjusted R ²	0.179	0.177	0.172	0.172	0.190	0.183	0.189	0.188
F statistic	60.92	60.805	37.758	37.804	52.197	52.101	42.966	44.432

Appendix D.6 – Controlling for Market Valuation, Geographical Distance and Culture

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the country's cross-border/domestic merger activity being in the highest quartile of all values for that country over the sample period in the year under consideration, and is based on the value of M&A transactions. The independent variables are trade-weighted connected M&As (defined in text). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity defined, as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Standard errors are corrected for heteroscedasticity and clustered at country level (p-value in parentheses). Inclusion of fixed effects is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.150 0.000	***0.163 0.000	***0.162 0.000	***0.169 0.000	***0.153 0.000	***0.165 0.000	***0.149 0.000	***0.156 0.000
Connected M&A: Subject Imports from Connected	***10.217 0.000				***10.270 0.000			
Connected M&A: Connected Imports from Subject		**1.948 0.050				**2.255 0.030		
Connected M&A: Subject Exports to Connected			**6.840 0.030				**5.914 0.050	
Connected M&A: Connected Exports to Subject				**2.151 0.020				*1.554 0.090
Degree Centrality	-0.153 0.180	-0.076 0.560	-0.002 0.970	0.029 0.670				
Degree Centrality x M&A Activity	**2.565 0.030	1.505 0.270	1.393 0.180	0.574 0.630				
Eigenvector Centrality					-0.644 0.780	-0.254 0.920	3.761 0.110	*5.162 0.070
Eigenvector Centrality x M&A Activity						56.913 0.110	20.755 0.610	54.146 0.120
Connected Market Valuation Differences: Trade Weighted	0.012 0.540	0.025 0.210	*0.030 0.100	0.037 0.040	0.011 0.570	0.024 0.230	*0.029 0.090	**0.036 0.030
Connected Geographical Distance: Trade Weighted	***0.203 0.010	**0.168 0.040	0.079 0.260	0.048 0.460	**0.159 0.030	**0.147 0.050	0.016 0.810	-0.013 0.830
Connected Culture Distance: Trade Weighted	-0.006 0.920	-0.073 0.270	**0.179 0.050	0.081 0.380	0.031 0.630	-0.059 0.330	***0.277 0.000	**0.211 0.020
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1117	1117	1119	1119	1117	1117	1119	1119
Adjusted R ²	0.261	0.244	0.262	0.25	0.173	0.144	0.154	0.142
F statistic	328.788	305.917	92.474	65.462	336.039	355.73	99.094	93.47

Appendix E: The Propagation of Merger Activity through the Trade Network – Manufacturing Industries

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the industry-country's cross-border/domestic merger activity being in the highest quartile of all values for that industry-country over the sample period in the year under consideration. The independent variables are trade-weighted connected M&As (defined in text). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity, defined as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A and C present the results of cross-border and domestic merger waves, respectively, when the dependent variable is based on the number of M&A transactions, and Panel B and D present the results cross-border and domestic merger waves, respectively, when the dependent variable is based on the value of M&A transactions. Standard errors are corrected for heteroscedasticity and clustered at country-industry level (p-value in parentheses). Inclusion of fixed effects and controls is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – Cross-border waves based on the number of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.063 0.000	***0.062 0.000	***0.058 0.000	***0.060 0.000	***0.064 0.000	***0.063 0.000	***0.063 0.000	***0.064 0.000
Connected M&A: Subject Imports from Connected	***0.912 0.010				***0.923 0.010			
Connected M&A: Connected Imports from Subject		***0.473 0.000				***0.516 0.000		
Connected M&A: Subject Exports to Connected			***1.43 0.000				***1.707 0.000	
Connected M&A: Connected Exports to Subject				***0.459 0.000				***0.610 0.000
Degree Centrality	**0.105 0.030	**0.105 0.030	***0.107 0.010	***0.119 0.000				
Degree Centrality x M&A Activity	*0.859 0.090	0.690 0.170	***1.163 0.010	**1.003 0.030				
Eigenvector Centrality					-0.015 0.840	-0.017 0.820	-0.006 0.930	0.007 0.920
Eigenvector Centrality x M&A Activity					**3.615 0.020	**3.416 0.020	1.974 0.150	1.928 0.160
Country Characteristics	Yes							
Year Fixed Effects	Yes							
Country x Industry Fixed Effects	Yes							
Observations	9486	9486	9485	9485	9486	9486	9485	9485
Adjusted R ²	0.269	0.27	0.274	0.273	0.268	0.269	0.269	0.269
F statistic	7.502	7.566	8.056	7.971	6.752	6.977	6.567	6.54

Panel B – Cross-border waves based on the value of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	0.019 0.130	0.018 0.150	0.016 0.200	0.018 0.150	*0.021 0.100	0.020 0.120	0.020 0.110	*0.022 0.080
Connected M&A: Subject Imports from Connected	**0.652 0.050				**0.647 0.050			
Connected M&A: Connected Imports from Subject		***0.519 0.000				***0.569 0.000		
Connected M&A: Subject Exports to Connected			***1.406 0.000				***1.618 0.000	
Connected M&A: Connected Exports to Subject				***0.398 0.000				***0.543 0.000
Degree Centrality	*0.083 0.090	*0.083 0.090	**0.075 0.040	**0.087 0.020				
Degree Centrality x M&A Activity	**1.171 0.030	*0.923 0.080	***1.403 0.000	***1.262 0.010				
Eigenvector Centrality					0.016 0.820	0.020 0.770	-0.019 0.800	-0.004 0.950
Eigenvector Centrality x M&A Activity					**3.083 0.030	*2.678 0.060	2.090 0.120	2.037 0.130
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country x Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9486	9486	9485	9485	9486	9486	9485	9485
Adjusted R ²	0.26	0.261	0.263	0.262	0.258	0.26	0.259	0.258
F statistic	9.704	10.19	10.699	10.665	8.59	9.305	8.175	8.175

Panel C – Domestic Waves based on the number of transactions

	1	2	3	4	5	6	7	8	
Lagged High M&A State	***0.101 0.000	***0.100 0.000	***0.096 0.000	***0.097 0.000	***0.101 0.000	***0.100 0.000	***0.101 0.000	***0.103 0.000	
Connected M&A: Subject Imports from Connected	-0.059 0.880				-0.081 0.830				
Connected M&A: Connected Imports from Subject		**0.336 0.030				**0.350 0.020			
Connected M&A: Subject Exports to Connected			***1.340 0.000				***1.598 0.000		
Connected M&A: Connected Exports to Subject				0.245 0.130				**0.378 0.020	
Degree Centrality	0.035 0.510	0.034 0.520	**0.104 0.020	***0.115 0.010					
Degree Centrality x M&A Activity	**1.562 0.040	*1.342 0.080	*1.320 0.060	*1.244 0.080					
Eigenvector Centrality					0.098 0.310	0.105 0.280	-0.087 0.340	-0.077 0.400	
Eigenvector Centrality x M&A Activity						3.118 0.160	2.670 0.230	**4.363 0.040	**4.473 0.030
Country Characteristics	Yes								
Year Fixed Effects	Yes								
Country x Industry Fixed Effects	Yes								
Observations	9486	9486	9485	9485	9486	9486	9485	9485	
Adjusted R ²	0.235	0.235	0.241	0.24	0.236	0.236	0.237	0.236	
F statistic	6.249	6.495	7.636	7.558	6.001	6.344	6.26	6.096	

Panel D – Domestic waves based on the value of transactions

	1	2	3	4	5	6	7	8	
Lagged High M&A State	***0.034 0.010	**0.032 0.020	**0.032 0.020	**0.031 0.020	***0.036 0.010	***0.034 0.010	***0.039 0.000	***0.038 0.000	
Connected M&A: Subject Imports from Connected	0.479 0.160				0.467 0.170				
Connected M&A: Connected Imports from Subject		***0.492 0.000				***0.545 0.000			
Connected M&A: Subject Exports to Connected			***1.160 0.000				***1.392 0.000		
Connected M&A: Connected Exports to Subject				***0.434 0.000				***0.570 0.000	
Degree Centrality	0.021 0.690	0.024 0.640	**0.088 0.040	**0.098 0.020					
Degree Centrality x M&A Activity	***2.260 0.000	***1.903 0.010	***1.813 0.010	**1.621 0.020					
Eigenvector Centrality					-0.009 0.920	0.002 0.980	-0.092 0.290	-0.077 0.380	
Eigenvector Centrality x M&A Activity						**4.249 0.040	*3.625 0.080	**4.592 0.030	**4.444 0.030
Country Characteristics	Yes								
Year Fixed Effects	Yes								
Country x Industry Fixed Effects	Yes								
Observations	9486	9486	9485	9485	9486	9486	9485	9485	
Adjusted R ²	0.173	0.174	0.176	0.176	0.172	0.173	0.171	0.171	
F statistic	7.911	8.392	7.317	7.564	6.916	7.596	5.528	5.766	

Appendix F: Detrending Dependent Variable

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the country's cross-border/domestic merger activity being in the highest quartile of all values for that country over the sample period in the year under consideration. The country's cross-border/domestic merger activity is residuals obtained after regressing the M&A activity on a linear time trend. The independent variables are trade-weighted connected M&As (defined in text). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity defined, as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A and C present the results of cross-border and domestic merger waves, respectively, when the dependent variable is based on the number of M&A transactions, and Panel B and D present the results cross-border and domestic merger waves, respectively, when the dependent variable is based on the value of M&A transactions. Standard errors are corrected for heteroscedasticity and clustered at country level (p-value in parentheses). Inclusion of fixed effects is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – Cross-border waves based on the number of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.185 0.000	***0.193 0.000	***0.194 0.000	***0.199 0.000	***0.189 0.000	***0.199 0.000	***0.190 0.000	***0.197 0.000
Connected M&A: Subject Imports from Connected	***9.365 0.000				***10.223 0.000			
Connected M&A: Connected Imports from Subject		**2.159 0.030				***2.800 0.000		
Connected M&A: Subject Exports to Connected			***7.677 0.000				***7.455 0.000	
Connected M&A: Connected Exports to Subject				2.396 0.010				**2.151 0.020
Degree Centrality	0.042 0.610	0.111 0.220	-0.013 0.800	0.028 0.590				
Degree Centrality x M&A Activity	***1.910 0.010	1.067 0.190	***1.687 0.010	0.889 0.200				
Eigenvector Centrality					-0.075 0.970	0.524 0.800	0.911 0.650	2.483 0.210
Eigenvector Centrality x M&A Activity					*43.044 0.060	8.285 0.750	***58.936 0.010	30.080 0.210
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1511	1511	1513	1513	1511	1511	1513	1513
Adjusted R ²	0.161	0.158	0.164	0.159	0.157	0.149	0.166	0.155
F statistic	108.268	100.695	46.842	44.055	99.073	97.034	37.309	35.476

Panel B – Cross-border waves based on the value of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.179 0.000	***0.188 0.000	***0.188 0.000	***0.191 0.000	***0.185 0.000	***0.193 0.000	***0.177 0.000	***0.182 0.000
Connected M&A: Subject Imports from Connected	***9.292 0.000				***9.937 0.000			
Connected M&A: Connected Imports from Subject		***1.867 0.080				***2.903 0.000		
Connected M&A: Subject Exports to Connected			***7.494 0.000				***6.985 0.010	
Connected M&A: Connected Exports to Subject				***2.990 0.000				**2.424 0.020
Degree Centrality	-0.005 0.950	0.070 0.480	-0.048 0.390	0.004 0.950				
Degree Centrality x M&A Activity	***2.133 0.000	1.246 0.190	**1.355 0.040	0.254 0.760				
Eigenvector Centrality					-1.392 0.510	-0.578 0.800	0.981 0.640	2.764 0.200
Eigenvector Centrality x M&A Activity					*37.805 0.100	-4.904 0.870	***61.710 0.010	26.987 0.360
Country Characteristics	Yes	Yes						
Year Fixed Effects	Yes	Yes						
Country Fixed Effects	Yes	Yes						
Observations	1511	1511	1513	1513	1511	1511	1513	1513
Adjusted R ²	0.172	0.170	0.175	0.172	0.064	0.057	0.063	0.058
F statistic	166.853	157.641	48.722	39.502	164.312	163.383	50.510	42.348

Panel C – Domestic waves based on number of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.257 0.000	***0.256 0.000	***0.261 0.000	***0.257 0.000	***0.255 0.000	***0.255 0.000	***0.256 0.000	***0.255 0.000
Connected M&A: Subject Imports from Connected	**5.183 0.040				**5.971 0.020			
Connected M&A: Connected Imports from Subject		1.693 0.160				*1.960 0.080		
Connected M&A: Subject Exports to Connected			**4.945 0.040				*4.688 0.060	
Connected M&A: Connected Exports to Subject				**2.450 0.030				*2.065 0.070
Degree Centrality	-0.018 0.840	0.033 0.710	-0.078 0.210	-0.028 0.660				
Degree Centrality x M&A Activity	***3.471 0.000	***2.486 0.050	***2.766 0.000	1.610 0.130				
Eigenvector Centrality					0.188 0.940	0.941 0.700	-2.165 0.380	-0.766 0.740
Eigenvector Centrality x M&A Activity					***86.204 0.000	53.202 0.140	***112.727 0.000	**77.969 0.030
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1511	1511	1513	1513	1511	1511	1513	1513
Adjusted R ²	0.128	0.125	0.130	0.125	0.130	0.125	0.134	0.127
F statistic	309.307	278.353	42.801	46.796	306.537	282.487	48.828	48.164

Panel D – Domestic waves based on value of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.211 0.000	***0.205 0.000	***0.206 0.000	***0.196 0.000	***0.218 0.000	***0.209 0.000	***0.204 0.000	***0.196 0.000
Connected M&A: Subject Imports from Connected	1.815 0.450				3.100 0.200			
Connected M&A: Connected Imports from Subject		**2.704 0.020				***3.274 0.000		
Connected M&A: Subject Exports to Connected			2.492 0.310				2.339 0.360	
Connected M&A: Connected Exports to Subject				***3.390 0.000				***3.025 0.010
Degree Centrality	0.047 0.580	0.084 0.330	-0.065 0.340	0.001 0.990				
Degree Centrality x M&A Activity	***3.704 0.010	1.864 0.250	***3.424 0.000	1.674 0.200				
Eigenvector Centrality					-2.136 0.420	-0.659 0.810	-3.630 0.180	-2.139 0.390
Eigenvector Centrality x M&A Activity					***93.648 0.010	30.213 0.480	***139.693 0.000	**85.246 0.050
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1511	1511	1513	1513	1511	1511	1513	1513
Adjusted R ²	0.119	0.121	0.110	0.114	0.103	0.098	0.109	0.101
F statistic	52.598	57.322	35.105	42.724	47.795	51.215	43.845	47.026

Appendix G: Excluding US

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the country's cross-border/domestic merger activity being in the highest quartile of all values for that country over the sample period in the year under consideration, and is based on the value of M&A transactions. The independent variables are trade-weighted connected M&As (defined in text). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity defined, as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A and C present the results of cross-border and domestic merger waves, respectively, when the dependent variable is based on the number of M&A transactions, and Panel B and D present the results cross-border and domestic merger waves, respectively, when the dependent variable is based on the value of M&A transactions. Standard errors are corrected for heteroscedasticity and clustered at country level (p-value in parentheses). Inclusion of fixed effects is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – Cross-border waves based on the number of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.213 0.000	***0.224 0.000	***0.224 0.000	***0.230 0.000	***0.217 0.000	***0.229 0.000	***0.213 0.000	***0.222 0.000
Connected M&A: Subject Imports from Connected	***10.249 0.000				***10.770 0.000			
Connected M&A: Connected Imports from Subject		*2.194 0.060				***2.886 0.010		
Connected M&A: Subject Exports to Connected			***8.585 0.000				***8.220 0.000	
Connected M&A: Connected Exports to Subject				***2.813 0.010				**2.402 0.020
Degree Centrality	-0.062 0.470	0.018 0.860	*-0.086 0.070	-0.038 0.490				
Degree Centrality x M&A Activity	***2.789 0.000	**1.909 0.050	***2.284 0.000	*1.391 0.080				
Eigenvector Centrality					-1.230 0.510	-0.632 0.750	0.491 0.790	2.109 0.300
Eigenvector Centrality x M&A Activity					***59.812 0.000	24.808 0.370	***79.043 0.000	*48.313 0.080
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1484	1484	1486	1486	1484	1484	1486	1486
Adjusted R ²	0.260	0.250	0.262	0.253	0.256	0.239	0.259	0.243
F statistic	129.429	125.000	117.927	90.918	131.967	134.095	114.814	89.474

Panel B – Cross-border waves based on the value of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.174 0.000	***0.183 0.000	***0.187 0.000	***0.191 0.000	***0.177 0.000	***0.186 0.000	***0.175 0.000	***0.181 0.000
Connected M&A: Subject Imports from Connected	***9.529 0.000				***9.577 0.000			
Connected M&A: Connected Imports from Subject		**2.474 0.020				***3.125 0.000		
Connected M&A: Subject Exports to Connected			***6.937 0.010				***6.296 0.010	
Connected M&A: Connected Exports to Subject				***3.001 0.000				**2.406 0.020
Degree Centrality	-0.134 0.110	-0.053 0.580	-0.094 0.130	-0.044 0.520				
Degree Centrality x M&A Activity	***2.557 0.000	1.439 0.190	**1.763 0.020	0.708 0.450				
Eigenvector Centrality					-1.503 0.420	-0.770 0.700	0.887 0.660	2.423 0.270
Eigenvector Centrality x M&A Activity					**51.396 0.040	9.120 0.770	***68.174 0.010	35.736 0.280
Country Characteristics	Yes	Yes						
Year Fixed Effects	Yes	Yes						
Country Fixed Effects	Yes	Yes						
Observations	1484	1484	1486	1486	1484	1484	1486	1486
Adjusted R ²	0.245	0.235	0.249	0.239	0.158	0.126	0.142	0.126
F statistic	191.332	193.332	301.526	262.692	184.319	193.504	315.687	252.611

Panel C – Domestic waves based on number of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.255 0.000	***0.254 0.000	***0.256 0.000	***0.255 0.000	***0.252 0.000	***0.253 0.000	***0.252 0.000	***0.253 0.000
Connected M&A: Subject Imports from Connected	***6.334 0.010				***7.092 0.010			
Connected M&A: Connected Imports from Subject		**2.446 0.020				***2.685 0.010		
Connected M&A: Subject Exports to Connected			**5.306 0.030				**4.998 0.040	
Connected M&A: Connected Exports to Subject				***3.313 0.000				***3.015 0.010
Degree Centrality	-0.072 0.420	-0.007 0.940	**-0.134 0.020	-0.071 0.250				
Degree Centrality x M&A Activity	***4.595 0.000	**3.157 0.030	***3.948 0.000	**2.447 0.040				
Eigenvector Centrality					-0.202 0.920	0.758 0.740	-2.854 0.230	-1.295 0.580
Eigenvector Centrality x M&A Activity					***111.989 0.000	*68.590 0.090	***135.897 0.000	**88.131 0.030
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1484	1484	1486	1486	1484	1484	1486	1486
Adjusted R ²	0.212	0.196	0.212	0.201	0.213	0.195	0.212	0.199
F statistic	39.032	30.24	38.078	25.564	40.974	36.552	42.065	31.618

Panel D – Domestic waves based on value of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.175 0.000	***0.172 0.000	***0.174 0.000	***0.172 0.000	***0.177 0.000	***0.173 0.000	***0.171 0.000	***0.170 0.000
Connected M&A: Subject Imports from Connected	2.904 0.220				3.633 0.130			
Connected M&A: Connected Imports from Subject		**2.276 0.040				***2.693 0.010		
Connected M&A: Subject Exports to Connected			2.589 0.280				2.497 0.300	
Connected M&A: Connected Exports to Subject				***2.717 0.010				**2.365 0.030
Degree Centrality	-0.069 0.350	-0.026 0.750	*-0.089 0.090	-0.036 0.520				
Degree Centrality x M&A Activity	***4.177 0.000	***2.678 0.060	***3.211 0.000	1.851 0.130				
Eigenvector Centrality					-1.736 0.420	-0.657 0.780	*-3.921 0.060	-2.751 0.180
Eigenvector Centrality x M&A Activity					***97.615 0.000	49.099 0.200	***128.327 0.000	**87.488 0.020
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1484	1484	1486	1486	1484	1484	1486	1486
Adjusted R ²	0.184	0.172	0.179	0.171	0.230	0.184	0.223	0.196
F statistic	68.782	58.767	41.111	33.482	54.594	52.105	51.672	40.023

Appendix G: Excluding Gateway Countries (Netherlands and Singapore)

This table presents the coefficient estimates of the Least Square Dummy Variable estimator. The dependent variable is High M&A State, defined as the country's cross-border/domestic merger activity being in the highest quartile of all values for that country over the sample period in the year under consideration, and is based on the value of M&A transactions. The independent variables are trade-weighted connected M&As (defined in text). Degree centrality is a country's number of intercountry connections. Eigenvector centrality score is assigned to a country considering centrality scores of connected countries. M&A Activity is the aggregate worldwide M&A activity defined, as the dollar transaction value of all mergers in year t divided by the total value of all mergers between 1989 and 2016. Panel A and C present the results of cross-border and domestic merger waves, respectively, when the dependent variable is based on the number of M&A transactions, and Panel B and D present the results cross-border and domestic merger waves, respectively, when the dependent variable is based on the value of M&A transactions. Standard errors are corrected for heteroscedasticity and clustered at country level (p-value in parentheses). Inclusion of fixed effects is indicated at the end. Statistical significance at 10%, 5%, and 1% is indicated by *, **, and ***, respectively.

Panel A – Cross-border waves based on the number of transactions

	1	2	3	4	5	6	7	8	
Lagged High M&A State	***0.217 0.000	***0.225 0.000	***0.228 0.000	***0.231 0.000	***0.222 0.000	***0.231 0.000	***0.217 0.000	***0.222 0.000	
Connected M&A: Subject Imports from Connected	***9.014 0.000				***9.663 0.000				
Connected M&A: Connected Imports from Subject		*1.764 0.090				**2.379 0.020			
Connected M&A: Subject Exports to Connected			***7.838 0.000				***7.460 0.010		
Connected M&A: Connected Exports to Subject				***2.673 0.000				***2.336 0.010	
Degree Centrality	-0.028 0.740	0.043 0.660	-0.070 0.150	-0.024 0.650					
Degree Centrality x M&A Activity	***2.525 0.000	**1.82 0.040	***2.113 0.000	*1.274 0.080					
Eigenvector Centrality					-1.050 0.600	-0.462 0.830	0.621 0.740	2.222 0.280	
Eigenvector Centrality x M&A Activity						***58.553 0.010	27.810 0.310	***78.311 0.000	*48.358 0.080
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Observations	1457	1457	1459	1459	1457	1457	1459	1459	
Adjusted R ²	0.254	0.246	0.256	0.248	0.249	0.234	0.253	0.24	
F statistic	140.701	130.076	69.105	36.523	141.018	139.444	62.458	34.907	

Panel B – Cross-border waves based on the value of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.174 0.000	***0.182 0.000	***0.187 0.000	***0.189 0.000	***0.177 0.000	***0.185 0.000	***0.174 0.000	***0.178 0.000
Connected M&A: Subject Imports from Connected	***8.534 0.000				***8.734 0.000			
Connected M&A: Connected Imports from Subject		*1.674 0.070				***2.257 0.010		
Connected M&A: Subject Exports to Connected			**6.359 0.020				**5.693 0.030	
Connected M&A: Connected Exports to Subject				***2.749 0.000				**2.223 0.020
Degree Centrality	-0.100 0.230	-0.027 0.780	-0.080 0.190	-0.034 0.610				
Degree Centrality x M&A Activity	***2.404 0.000	1.600 0.110	**1.655 0.020	0.694 0.440				
Eigenvector Centrality					-1.315 0.510	-0.613 0.780	1.033 0.610	2.541 0.250
Eigenvector Centrality x M&A Activity					**51.651 0.040	17.025 0.590	***69.113 0.010	38.512 0.250
Country Characteristics	Yes	Yes						
Year Fixed Effects	Yes	Yes						
Country Fixed Effects	Yes	Yes						
Observations	1457	1457	1459	1459	1457	1457	1459	1459
Adjusted R ²	0.238	0.229	0.242	0.233	0.153	0.122	0.138	0.122
F statistic	185.343	183.529	81.117	45.143	180.626	189.919	60.026	45.287

Panel C – Domestic waves based on number of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.269 0.000	***0.265 0.000	***0.270 0.000	***0.265 0.000	***0.265 0.000	***0.263 0.000	***0.266 0.000	***0.263 0.000
Connected M&A: Subject Imports from Connected	**5.034 0.050				**5.819 0.030			
Connected M&A: Connected Imports from Subject		***2.743 0.010				***2.852 0.000		
Connected M&A: Subject Exports to Connected			*4.474 0.070				*4.175 0.090	
Connected M&A: Connected Exports to Subject				***3.273 0.000				***3.016 0.000
Degree Centrality	-0.027 0.770	0.029 0.750	*-0.100 0.100	-0.039 0.520				
Degree Centrality x M&A Activity	***3.743 0.000	2.104 0.130	***3.381 0.000	*1.908 0.090				
Eigenvector Centrality					0.739 0.740	1.902 0.430	-2.475 0.300	-0.895 0.710
Eigenvector Centrality x M&A Activity					***102.396 0.000	52.579 0.190	***127.621 0.000	**79.215 0.040
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1457	1457	1459	1459	1457	1457	1459	1459
Adjusted R ²	0.207	0.194	0.208	0.199	0.208	0.193	0.208	0.198
F statistic	37.251	26.214	40.235	22.857	43.31	32.683	39.501	28.786

Panel D – Domestic waves based on value of transactions

	1	2	3	4	5	6	7	8
Lagged High M&A State	***0.185 0.000	***0.181 0.000	***0.185 0.000	***0.180 0.000	***0.187 0.000	***0.182 0.000	***0.182 0.000	***0.178 0.000
Connected M&A: Subject Imports from Connected	1.622 0.500				2.438 0.320			
Connected M&A: Connected Imports from Subject		**2.181 0.020				***2.512 0.010		
Connected M&A: Subject Exports to Connected			1.775 0.460				1.692 0.480	
Connected M&A: Connected Exports to Subject				***2.714 0.000				***2.404 0.010
Degree Centrality	-0.040 0.580	-0.009 0.910	-0.073 0.160	-0.021 0.690				
Degree Centrality x M&A Activity	***3.930 0.000	**2.422 0.050	***3.088 0.000	1.744 0.120				
Eigenvector Centrality					-1.300 0.560	-0.093 0.970	*-4.012 0.060	-2.860 0.180
Eigenvector Centrality x M&A Activity					***99.989 0.000	49.325 0.180	***132.714 0.000	***90.322 0.010
Country Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1457	1457	1459	1459	1457	1457	1459	1459
Adjusted R ²	0.180	0.171	0.175	0.169	0.223	0.179	0.218	0.190
F statistic	58.611	55.490	37.786	32.748	49.903	49.605	43.429	40.453