

Article

Winners and Losers from Trade Agreements: Stock Market Reactions to TPP and TTIP

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Abstract

Which companies gain and which companies lose from trade agreements? In contrast to a view that sees the largest companies as the main beneficiaries of trade agreements, we argue that medium-sized companies gain the most from them. Moreover, we examine whether more capital-intensive and more diversified companies benefit more than other firms. Our empirical test relies on a dataset with daily firm-level stock price data for close to 4,000 US companies over the period 2009-2016. Concretely, we assess how the shares of different types of firms reacted to news on the (lack of) progress of the negotiations aimed at concluding the Transpacific Partnership (TPP) and Transatlantic Trade and Investment Partnership (TTIP). We find support for the view that medium-sized and diversified companies win the most from trade agreements. Besides speaking to the literature on the distributional effects of trade agreements, the article contributes to recent research on the role of firms in international political economy and the stock market consequences of political events. It also presents a novel approach to measuring progress and stagnation in international trade negotiations using computational text analysis.

Keywords

Distributional effects; stock markets; TPP; Trade agreements; TTIP

Issue

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1. Introduction

Developed countries currently witness a backlash to globalization. After many years in which they have moved towards ever more liberal trade and economic relations, we now see at least a partial reversal of these policies. In Europe, Brexit and strong opposition to the Transatlantic Trade and Investment Partnership (TTIP), a potential trade agreement between

38 the United States and the European Union (EU) that did not materialize, epitomize this globalization backlash (Dür et al.
39 2020). In the United States, the election of Donald Trump as president and the decision to withdraw from the Transpacific
40 Partnership Agreement (TPP) are cited as examples of this reaction to globalization.

41 Many researchers and observers use the distributional consequences of trade policy choices to explain this development
42 (Rodrik, 2018; Saval, 2017). The deep trade agreements that countries conclude, the argument goes, mainly benefit the
43 already wealthy, while hurting the relatively less well-off. As a result, the latter increasingly turn against globalization in
44 general and trade agreements in particular. But what are the actual distributive consequences of trade policy choices?
45 We contribute to answering this question by focusing on which companies gain or lose from trade agreements.

46 Building on the so-called “new new trade theory” (Ciuriak et al., 2015; Melitz & Redding, 2014), we present three
47 expectations on the relationship between firm characteristics and trade agreements. The first argument deals with
48 differences in company sizes. Critics of trade agreements see the largest multinational companies as their main
49 beneficiaries. Some academic research supports this view (Baccini et al., 2017; Breinlich, 2014). Others take a more
50 benign view. Illustratively, supporters of TTIP predicted that this agreement would mainly benefit small and medium-
51 sized companies. The United States Trade Representative Mike Froman, for example, stated: “Among the many
52 beneficiaries of TTIP, perhaps small businesses stand to gain the most” (quoted in Workman, 2014). We side with the
53 second view in arguing that the largest companies engage in international trade even given existing barriers. These
54 barriers, however, are prohibitive for slightly smaller companies. The reduction of barriers, then, mainly benefits these
55 medium-sized companies, by allowing them to become active participants in international trade. Furthermore, we expect
56 that capital-intensive and diversified companies gain more from the conclusion of trade agreements than other
57 companies.

58 We test our argument with a stock market event study that relies on daily firm-level stock price data for 3,926 US
59 companies over the period of 2009-2016. Specifically, we assess how the shares of different types of firms reacted to
60 news on the (lack of) progress of the negotiations aimed at concluding the TPP and TTIP. TPP was supposed to be a trade
61 agreement among twelve countries in the Pacific region, including the United States. It failed when the United States
62 decided to withdraw its signature from the agreement in early 2017. TTIP’s aim was to facilitate trade between the United
63 States and the EU. Formal negotiations for TTIP started in 2013, but the negotiations stalled in 2016.

64 Our study is not the first to examine the stock market impact of trade agreements. More than two decades ago,
65 Thompson (1993, 1994) analyzed how the Canada-United States Free Trade Agreement affected the market value of
66 Canadian companies. Breinlich (2014) reanalyzed the same agreement from within the framework of new trade
67 theory. Whereas these studies just focused on a single country, Rodriguez (2003) investigated the (sectoral-level) stock
68 market impact of the North American Free Trade Agreement (NAFTA) in all three participating countries. Moving to a
69 quite different context, Parinduri and Thangavelu (2013) studied the impact of the United States-Singapore free trade
70 agreement. Looking at a disintegration event, Davies and Studnicka (2018) assessed the impact of the exit of the United
71 Kingdom from the EU on stock prices. Finally, Moser and Rose (2014) studied the impact of a large number of preferential
72 trade agreements on aggregate national stock market indices.

73 We make several contributions to this state-of-the-art. First, whereas all the studies that looked at firm-level effects
74 focused on a single trade agreement, we include two agreements in our analysis. This increases the robustness of our
75 results and allows us to check for any differences depending on agreement characteristics. Second, we study both
76 “positive” (i.e. pro-integration) and “negative” (i.e. disintegration) events in a single study. Doing so allows for a much
77 better empirical test of our expectations. Third, we use automated text analysis to identify the relevant events. Most
78 previous studies either only considered a single event (mainly the signature of a trade agreement) or very few, manually
79 selected events. The approach used in these studies faces the problem that investors may already become convinced
80 that an agreement is very likely before the agreement is signed. The news effect of the signature hence may be very
81 small. By focusing on a larger number of events throughout the process of negotiations, we manage to remedy this
82 problem.

83 In making and testing our argument, the article also contributes to a broader strand of research that uses stock market
84 data to assess the impact of political events (Bechtel and Schneider, 2010; Schneider and Troeger, 2006; Wolfers and
85 Zitzewitz, 2018). Furthermore, we contribute to a growing literature on the role of firms in international political economy
86 (Jensen et al., 2015; Milner, 1988; Osgood, 2018). Finally, in terms of policy implications, our study suggests that recent

87 policies that have the potential to reduce global openness under the banner of “economic security”, such as the EU’s
88 European Economic Security Strategy (European Commission and High Representative of the Union for Foreign Affairs
89 and Security Policy, 2023), may negatively affect especially mid-sized firms that find it more difficult to adjust to new
90 circumstances than the largest firms. If such policies really favor the largest players, they may reduce rather than enhance
91 countries’ resilience to shocks.

92 **2. Argument**

93 In line with what has been called “new new trade theory” (Ciuriak et al., 2015; Melitz & Redding, 2014), recent research
94 has shown much variation in the consequences of trade liberalization or other trade policies across firms within the same
95 industry (Baccini et al., 2017; Breinlich, 2014; Melitz & Redding, 2014; Osgood, 2017). Increased trade leads to a
96 reallocation of production within the same sector from firms with relatively low productivity (which also tend to be
97 smaller companies) to firms with higher productivity (which tend to be the largest companies in a sector, see e.g., Leung
98 et al. 2008). We draw on this strand of literature when proposing a set of hypotheses on the distributional effect of trade
99 agreements at the level of firms.

100 Throughout the following discussion, we build on the assumption that investors – which tend to be of the institutional
101 type, that is, professionals investing the money of others – are aware of the effects of trade (agreements) on different
102 firms. To make informed investment decisions, they follow the news on trade negotiations. Given that most investments
103 in stock markets are undertaken by institutional investors, the assumption that they are well-informed about trade
104 negotiations is plausible. For the argument, it does not matter whether they get this information via media or through
105 another channel.

106 When the news indicates that the chances for a successful conclusion of a negotiation increase, they buy shares of
107 companies that they expect to benefit from the agreement and sell shares of companies that they expect to be hurt by
108 the agreement. If the news indicates that the chances for a successful conclusion of the negotiations decrease, the
109 investors will do just the opposite – sell the shares of the companies that would benefit from the agreement and buy the
110 shares of the companies that would lose from the agreement. Selling means that the price of the shares decreases,
111 whereas buying means that the price of the shares increases. At any time, therefore, the value of a stock internalizes all
112 the information available to investors and hence takes into account expected future changes in profitability.

113 The starting point for our argument is that, across all sectors, relatively few firms engage in international trade.
114 Illustratively, for the United States Bernard et al. (2007, p. 109) showed that less than a fifth of all firms in the
115 manufacturing sector export goods. This value is similar for other industrialized countries (World Trade Organization,
116 2008, p. 53). Better foreign market access then only benefits a subset of firms within each sector. The same applies to
117 importing: again, only a minority of companies source imports abroad and hence benefit from lower domestic trade
118 barriers. As there is much overlap across the two sets of firms - those that export and those that import - most companies
119 cannot directly benefit from trade liberalization.

120 Of course, modern trade agreements do more than just liberalize trade. They also protect foreign direct investments (FDI)
121 and intellectual property rights and even affect domestic regulations via regulatory cooperation (Dür et al., 2014). From
122 the home country perspective, the protection of FDI mostly matters for a small number of companies, as only a few
123 companies tend to produce abroad. In the host country, a larger number of companies may face increased competition
124 from foreign FDI because of a trade agreement. In an agreement between developed countries, provisions concerning
125 the protection of intellectual property rights generally do not matter much, but they can affect firms in agreements with
126 countries at lower levels of development. Regulatory cooperation can have a broader impact, but in practice regulatory
127 cooperation does not actually change domestic rules, but at most offers some form of mutual recognition.

128 Moreover, via several mechanisms trade agreements can indirectly matter for companies that neither engage in
129 international trade nor invest abroad. Companies lose from trade liberalization if they now face competition from abroad
130 for the goods they produce or the services they provide. Or they can benefit from trade liberalization if their output is
131 used as input in new exports. Trade liberalization also affects the costs of factors of production, which matter for all firms
132 in an economy. In fact, in the model put forward by Melitz and Redding (2014), the reallocation of resources across
133 companies that results from trade liberalization mainly works via an increase in the price of labor.

134 Finally, trade agreements matter for all companies via their impact on economic growth. The deep agreements that
135 currently are negotiated generally increase participating countries' gross domestic product. However, the
136 macroeconomic impact of many trade agreements is small, especially of those that are signed among minor trading
137 partners. In any case, this impact via economic growth should be relatively homogenous across firms.

138 Keeping all of this in mind, which are the firms that benefit most from a new trade agreement? An argument could be
139 made that the benefits should mainly accrue to the largest firms in an economy. As stated above, only a minority of firms
140 export their goods or services. Those that do tend to be larger and more innovative than those that do not. For example,
141 manufacturing exporters from the United States are more than twice as large in terms of employment than otherwise
142 equal firms that do not export (Bernard et al., 2007, p. 110). The most prominent explanation for this observation is that
143 firms pay a fixed entry cost when they want to export. Only for the most profitable companies is it worthwhile to pay this
144 entry cost. Just as exporting, sourcing abroad is mainly undertaken by large companies (Bernard et al., 2007). This is so
145 because the fixed costs of establishing a supply chain are relatively high, not least because the relationship-specific
146 investments for both buyers and sellers of intermediates are high (Antràs & Staiger, 2012, p. 3141). Finding a seller then
147 is a tricky task. Only for large firms, the lower variable costs of foreign suppliers outweigh the higher fixed costs of
148 establishing an international supply chain (Helpman et al., 2004). The same logic applies to foreign direct investments:
149 again, only the largest companies tend to invest abroad. What is more, these large companies also have the political clout
150 to shape the contents of trade agreements (Anderer et al., 2020; Sell, 2003). Overall, therefore, one might expect large
151 firms to benefit from trade agreements and smaller ones to lose (or at least the former to benefit more than the latter).

152 However, there also is an alternative perspective on the impact of firm size on the benefits of trade agreements.
153 Proponents of such agreements tend to argue that they mainly benefit small and medium-sized companies (European
154 Commission, 2013; Persin, 2011; Workman, 2014). The logic of this argument is straightforward: although the fixed costs
155 of exporting, importing, or investing abroad under normal trading conditions are high, the largest and most productive
156 companies can engage in all these activities even in the absence of a trade agreement. By reducing competition, barriers
157 that keep fixed costs high can even benefit them. Trade agreements not only reduce variable costs such as tariffs, but
158 also fixed costs, such as customs formalities, regulatory barriers, or risks to foreign direct investments. The reduction of
159 these fixed costs should mainly benefit the mid-sized companies that in the absence of a trade agreement are barred
160 from directly participating in international trade and investments. In the words of Workman (2014), "A TTIP agreement
161 that eliminates duplicative regulatory requirements and harmonizes equivalent standards would have an outsized
162 positive impact on SMEs [small and medium-sized enterprises]." In fact, trade liberalization might allow some firms that
163 previously only produced for the domestic market to become exporters; and others that so far only sourced their inputs
164 domestically to become importers.

165 Independent of whether this increase in exports and imports is due to trade creation or trade diversion, these firms are
166 likely to reap some gains from doing so, as firms that engage in trade have been shown to grow more rapidly (Bernard et
167 al., 2003; Kasahara et al., 2013). What is more, the productivity gains from moving from non-exporting to exporting are
168 largest for plants that were relatively less productive at the starting point (Lileeva & Trefler, 2010). Finally, also the
169 chances of survival are higher for firms that engage in trade (Wagner, 2012, pp. 256-261). A trade agreement thus creates
170 particularly large benefits for firms that manage to become exporters or importers. As we expect that especially medium-
171 sized companies change from buying and selling locally to operating internationally, the benefits should be particularly
172 visible for the latter group. Considering that in the context of a study on stock market reactions, the relatively smaller
173 companies are medium-sized (because really small companies are not listed on stock markets), our first hypothesis reads
174 as follows:

175 **H1:** The positive (negative) effect on share prices of events that make the conclusion of a trade agreement more (less)
176 likely is larger for relatively smaller companies.

177 Recent research has also shown that international trade is inherently more capital-intensive than the supply of goods to
178 the domestic market (Bernard et al., 2007; Ciuriak et al., 2015; Matsuyama, 2007). This contradicts traditional theories
179 of trade, which expected that some countries (namely capital-rich ones) export capital-intensive goods and other
180 countries (namely labor-rich ones) export labor-intensive goods. It is also in line with the observation that much
181 international trade is of an intra-industry nature, where countries exchange products within the same industry. With
182 trade inherently biased towards capital-intensive goods and services, more capital-intensive companies should reap
183 greater gains from trade agreements. We thus also expect:

184 **H2:** The positive (negative) effect on share prices of events that make the conclusion of a trade agreement more (less)
185 likely is larger, the more capital-intensive a company is.

186 Finally, we expect that the companies that will be best situated to gain from a new trade agreement are those that are
187 active across several sectors. Companies with high product diversification have a greater ability to take advantage of new
188 opportunities that open up as a result of such agreements, or to shift focus away from products where trade agreements
189 increase foreign competition. Indeed, research on multiproduct firms shows that companies that face tariff reductions
190 tend to lower the number of products they produce (Bernard et al., 2011), which in turn increases their productivity
191 (Nocke & Yeaple, 2014). Alternatively, it might be argued that companies that are more diversified in terms of the number
192 of products they produce are less dependent on trade agreements, meaning that their share prices react less to news
193 about trade agreements. As we expect the former effect to dominate, however, our third expectation reads:

194 **H3:** The positive (negative) effect on share prices of events that make the conclusion of a trade agreement more (less)
195 likely is larger, the more diversified a company is.

196 **3. Research Design**

197 We test our argument relying on the negotiations for TPP and TTIP. The former involved up to twelve countries, including
198 highly developed countries such as Japan and the United States and developing countries such as Malaysia and Vietnam.
199 The negotiations started in 2008 and continued until 2015, when a draft agreement was reached after 19 negotiation
200 rounds. A very broad agreement, covering everything from tariff reductions to the protection of intellectual property
201 rights and investments, was signed in 2016. In late 2016, the then President-elect Donald Trump announced that he
202 would withdraw the signature by the United States. The eleven remaining countries eventually moved ahead without the
203 United States. The TTIP negotiations between the United States and the EU started with the establishment of a High-
204 Level Working Group on Jobs and Growth in November 2011. Based on the report produced by this working group, formal
205 negotiations for an agreement started in early 2013. Despite many negotiation rounds, no agreement could be reached
206 on TTIP, and the negotiations were suspended when the Trump administration took over from the Obama administration
207 in early 2017.

208 Both negotiations went through many ups and downs, making it possible to assess the impact of news on their progress
209 or failure on companies' share prices. These ups and downs were not only produced by the willingness of the negotiation
210 parties to make concessions but also by the reaction of the public. Both TPP and TTIP faced considerable public opposition
211 in some countries, with this opposition contributing to their final demise. The two negotiations are also ideal for testing
212 our argument as they are sufficiently important for it to be plausible that they had a detectable impact on stock prices.
213 All trade agreements should matter at least for some companies (as otherwise they are unlikely to be signed), but an
214 event study is not able to estimate these effects if only a few companies are affected, for example, because the
215 agreement is between two countries with only weak trade links between them. For reasons of data availability, we focus
216 on companies that have their headquarters in the United States. Since the depth of the American capital market is
217 unrivalled, concentrating on the United States also has substantive benefits.

218 *3.1. Dependent Variable*

219 The dependent variable captures the abnormal returns for companies – that is the difference between their actual stock
220 price change and the one expected given previous performance or overall market movement – around a series of
221 important events characterizing the TPP and TTIP negotiations. Worldscope provides data on 3,926 companies that have
222 their headquarters in the United States and that are listed on a stock exchange (mainly NASDAQ and the New York Stock
223 Exchange). To generate a company's abnormal returns, three standard event-study methodologies exist: market-adjusted
224 models with within-sample estimation, market-adjusted models with out-of-sample estimation, and mean-adjusted
225 models (MacKinlay, 1997). In our baseline model, we rely on the market-adjusted approach with in-sample estimation,
226 but we employ the other two methodologies in robustness checks.

227 The market adjusted models are calculated with the share price as dependent variable and a broad-based stock index as
228 predictor:

229
$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \beta_{e,i} E_t + \epsilon_{i,t},$$

230 where $R_{i,t}$ is the return for a specific firm i at time t , $R_{m,t}$ is the return on the market portfolio at that same time, and
 231 E_t represents a dummy that is 1 if t falls into the estimation window and 0 otherwise. We take the S&P 500 to measure
 232 the market return, that is $R_{m,t}$. The event dummy is only relevant in the within-sample estimations, where we
 233 concatenate the estimation period ($t-120$ to $t-2$) and the event period ($t-1$ to $t+5$). Starting the estimation period at $t-120$
 234 makes sense given the double objective of having sufficient information to estimate the model and not introducing too
 235 much noise in the model. We use a 7-day event period since markets are unlikely to efficiently price in new information
 236 in a single day. The coefficient $\beta_{e,i}$ then represents the (cumulative) abnormal return measure ($CAR_{i,t}$), which is the
 237 value of the dependent variable for firm i and event T . The advantage of using this model is that we get significance levels
 238 for the event coefficient $\beta_{e,i}$, which informs us whether a company's returns during the event period were statistically
 239 significantly different from its expected returns.

240 For the out-of-sample estimation, we also use the period from 120 days before an event until two days before an event
 241 as estimation window. The α_i and β_i that we receive from this model then allow us to calculate the expected return for
 242 a firm at time t . The abnormal return for each company is the difference between the observed return at time t and the
 243 expected return at time t . We again cumulate these abnormal returns starting one day before an event and ending five
 244 days after the event.

245 **3.2. The Predictors**

246 The main explanatory variable that we are interested in captures events that indicate progress or stagnation/failure of
 247 the TPP and TTIP negotiations. Rather than manually selecting some events, we decided to rely on the automated analysis
 248 of newspaper reports. For this purpose, we retrieved newspaper reports published in the US from LexisNexis. We found
 249 2,359 newspaper articles on TPP published between 1 January 2009 and 31 December 2017 and 1,193 newspaper articles
 250 on TTIP that were published between 1 January 2013 and 31 December 2017. We then used computational text analysis
 251 to classify progress and stagnation events (more information on the exact approach is available in section A of the online
 252 appendix). Concretely, we relied on the support vector machine and random forest machine learning algorithms, as they
 253 outperformed alternative approaches after being trained on 400 manually coded texts. If these two algorithms agreed,
 254 we took the respective value; if not, we used the value of the algorithm that was certain with a probability greater than
 255 80 percent. We experimented with other probability thresholds (65, 70, 75, 85, 90, 95, 100) but the 80 percent threshold
 256 offered the best performance results in terms of recall and precision. In case both algorithms were certain with a
 257 probability greater than 80 percent and calculated different results or if both algorithms were uncertain with a probability
 258 lower than 80 percent and disagreed, we assigned a value of 0, which is our neutral category. To aggregate values for
 259 newspaper articles to values for event dates, we first weighted newspaper-article-values by their probability and then
 260 used these weighted values to calculate the average per day. Events with a time difference of seven or fewer days are
 261 treated as one event, where we calculated the weighted value across all these days and flagged the result with the
 262 minimum date.

263 We then selected all negative events, which were three, and filled up the positive events to match the distribution in the
 264 manual coding sample. We ended up with seven positive events for TTIP and TPP. See Table 1 for the respective dates.
 265 Most of these events and their coding as indicating progress or stagnation are plausible given the available evidence. In
 266 October 2015, for instance, the TPP negotiations were concluded and in February 2016 TPP was signed formally. Both
 267 events are classified as indicating progress in our sample. In September 2016, Vietnam decided to delay the ratification
 268 of TPP. This event signals stagnation in the dataset. In November 2014, the first protests on TTIP emerged and we see a
 269 stagnation event in our data. Yet, we are surprised by the progress classification of 4 December 2014, which is the date
 270 when one million signatures were reached by the anti-TTIP campaign.

271 **Table 1.** Positive and negative events.

Date	Agreement	Value
2009-11-14	TPP	1
2010-11-14	TPP	1

2011-12-09	TPP	1
2011-12-14	TPP	1
2014-12-05	TPP	1
2014-12-19	TPP	-1
2015-10-06	TPP	1
2016-02-04	TPP	1
2016-09-29	TPP	-1
2016-11-22	TPP	-1
2013-10-18	TTIP	-1
2013-11-26	TTIP	1
2014-02-21	TTIP	1
2014-11-18	TTIP	-1
2014-12-04	TTIP	1
2015-11-12	TTIP	1
2015-12-07	TTIP	1
2016-02-18	TTIP	-1
2016-11-09	TTIP	1
2016-11-17	TTIP	1

272

273 Figure AA.2 in the online appendix shows how these events affected the stock market returns of firms. For both
 274 agreements, the strongest reactions happened toward the end of the negotiation phase. Stocks of 560 firms reacted
 275 strongly to the signature of TPP on 3 February 2016. Surprisingly, the majority of companies experienced a negative effect
 276 on their stock market returns. Contrarily, in December 2014, when the US government spoke up for fast-tracking TPP,
 277 stock market returns of nearly 400 companies increased. At the end of 2015, when the European Union presented its
 278 new trade and investment policy strategy entitled “Trade for all”, stocks of 206 US companies reacted negatively. Similarly
 279 on 9 November 2016, when EU policy representatives announced a break in the TTIP negotiations, stock returns of 131
 280 dropped. At the same time, however, the stocks of 1,302 companies gained in value.

281 To answer the question of who gains and who loses from progress on trade agreements, in the following analysis we
 282 interact the progress versus stagnation dummy with several firm characteristics. H1 makes us expect that the impact of
 283 these events on firms differs depending on firms’ size. We use the (natural logarithm of) firms’ market value (from
 284 Worldscope) as a proxy for a firm’s size (*Market value*). Since our sample only includes companies listed on the stock
 285 market, the “small” firms in our sample are actually medium-sized. Illustratively, approximately 80 percent of all firms
 286 included had a market value of more than \$100 million in 2016. Nevertheless, we have considerable variation in terms of
 287 company size in our dataset, with the top 10 percent of firms having a market value of over \$12.6 billion in 2016.

288 In H2 we refer to the capital intensity of firms. Capital intensity means how much capital a company uses relative to labor
 289 in its production process. Using data from Worldscope, we measure this variable by dividing a company’s market value
 290 by its number of employees (*Capital intensity*). Finally, H3 draws attention to the extent to which the companies are
 291 diversified. To operationalize this variable, we use the number of sectors at the 4-digit level of the Standard Industry
 292 Classification (SIC) in which the companies are active (as coded in the Worldscope database) (*Diversification*). This
 293 variable ranges from 1 to 8, which is the maximum number of codes assigned by Worldscope, with the modal value being
 294 2. In 2010, Microsoft Corp. is coded 8 on this variable (including “Prepackaged Software” and “Computer Peripheral
 295 Equipment”), whereas Nvidia Corp. is coded 1 (“Semiconductors and Related Devices”) in the same year. The correlation
 296 between *Market value* and *Diversification* is 0.33. Larger firms hence are also more diversified, but the two variables are
 297 sufficiently distinct to empirically distinguish their effects.

298 3.3. Control Variables

299 In the models that we present below, we also include a dummy variable that captures whether a company had any foreign
 300 sales in the year of analysis. Data come from Worldscope, with missing values multiply imputed. For the year 2016, our
 301 data indicate that 56 percent of the firms in our sample had no foreign sales. Moreover, we include sector, year, and day
 302 of the week and in models 1 and 2 also agreement fixed effects. Doing so controls for heterogeneity across industry

303 sectors, time, day of the week (where Sunday announcements might be different to, for example, Tuesday events), and
 304 agreement. The sector fixed effects are at the top level of the Standard Industrial Classification.

305 **3.4. Estimation**

306 We estimate our model relying on ordinary least squares regression but using the method of alternating projections to
 307 get rid of multiple group effects. We also cluster standard errors by firm to account for correlations across events. Despite
 308 the control variables included in our models, we face the problem (common to all event studies) of ascertaining that the
 309 abnormal returns that we establish are really caused by the events that we single out rather than other information that
 310 investors receive. For example, also news about the presidential campaign in the United States during 2016 had an impact
 311 on the stock market returns of companies (Wolfers and Zitzewitz, 2018). We offer three responses to this concern. First,
 312 we have a relatively large number of both positive and negative events. The probability that other, random events are
 313 driving our results declines as the number of events that we study increases. Second, we are testing interactions between
 314 events and firm characteristics. Other events that matter for stock prices thus only are a concern if they also matter
 315 conditionally in the same way we hypothesize the trade negotiation news to matter. Third, in robustness checks we
 316 present models for which we re-estimate our models for randomly chosen dates. If we do not find the same associations
 317 as for our event dates, the plausibility of the conclusion that our event dates capture a real effect increases.

318 **4. Findings**

319 In Model 1 (see Table 2), which includes three interaction terms, the coefficient for the *Progress x Market value* term is
 320 negative and statistically significant (Section B in the online appendix shows that we get very similar results when we run
 321 the analysis separately for the two agreements). This is in line with H1. As our dataset excludes small companies that are
 322 not listed on the stock market, this result suggests that medium-sized companies benefit disproportionately more from
 323 progress in TTIP and TPP negotiations than large companies. Figure 1 supports this finding. The larger a company, the less
 324 it benefits from positive news on TTIP and TPP. In fact, a company with a market value of \$127 million experiences on
 325 average a 0.74 percent higher increase in its stock market value than a company with a market value of \$2,651 million.

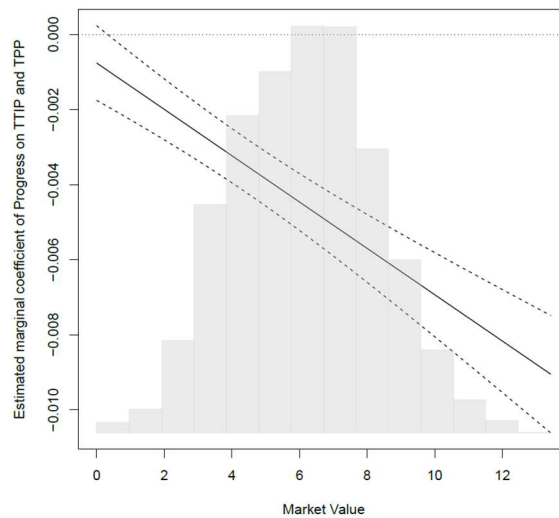
326 **Table 2.** Regression models.

	Model 1	Model 2
Market value (log)	0.0018 *** (0.0004)	0.0020 *** (0.0006)
Progress	-0.0060 * (0.0030)	-0.0070 (0.0047)
Capital intensity	-0.0041 ** (0.0015)	-0.0041 ** (0.0015)
Diversification	-0.0003 (0.0003)	-0.0003 (0.0003)
Progress x Market value (log)	-0.0025 *** (0.0004)	-0.0022 *** (0.0006)
Progress x Capital intensity	0.0012 (0.0017)	0.0010 (0.0017)
Progress x Diversification	0.0013 *** (0.0003)	0.0013 *** (0.0003)
Foreign sales of total sales (dummy)		0.0012 (0.0051)
Market value x Foreign sales		-0.0003 (0.0007)
Progress x foreign sales		0.0008 (0.0057)
Progress x market value x foreign sales		-0.0004 (0.0008)

	Model 1	Model 2
Num. obs.	49796	49796
R ² (full model)	0.0799	0.0801
R ² (proj model)	0.0099	0.0101
Adj. R ² (full model)	0.0794	0.0795
Adj. R ² (proj model)	0.0094	0.0095
Num. groups: econ_sector	10	10
Num. groups: year	6	6
Num. groups: agreement	2	2
Num. groups: weekday	5	5

327

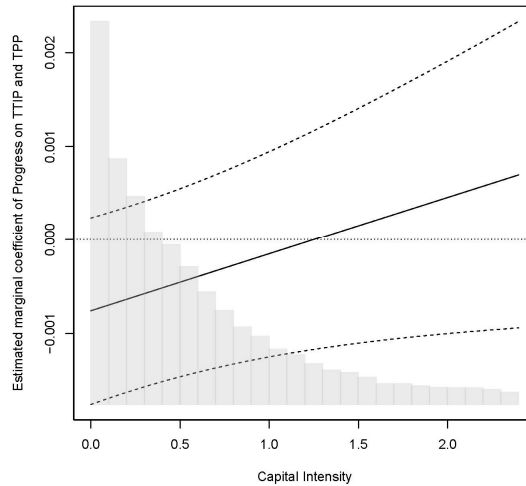
328 Notes: *** p<0.001, ** p<0.01, * p<0.05.



329

330 **Figure 1.** The interaction between *Progress* and *Market value* (based on Model 1 in Table 1)

331 Hypothesis 2 suggests that capital-intensive firms profit more from progress in trade negotiations than labor-intensive
 332 firms. In Model 1, the coefficient for the interaction between *Progress* and *Capital intensity* is positive but fails to meet
 333 the required significance level. Figure 2 shows this effect graphically. This evidence runs counter to H2. Moreover, in
 334 Model 1 we take up the expectation that news that trade negotiations are progressing well are particularly beneficial for
 335 the stock market value of diversified companies. As expected in H3, the coefficient for the interaction term is positive
 336 and statistically significant. The substantive effect, however, is quite small: With one additional operating sector a
 337 company wins 0.001 in cumulative abnormal returns.



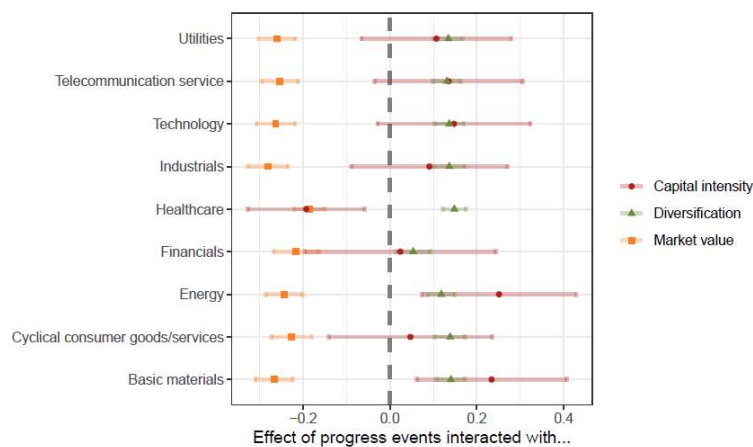
338

339 **Figure 2.** The interaction between *Progress* and *Market value* (based on Model 1 in Table 1)

340 We further explore the effect of *Market value* in Model 2, where we add a triple interaction term covering *Progress*,
 341 *Market value*, and *Foreign sales*. The expectation that we presented in the argument is that especially medium-sized
 342 companies that did not yet export benefit most from a trade agreement. This is so as moving from non-exporting to
 343 exporting status comes with the highest growth opportunities. This should be less pronounced for large companies that
 344 can afford export expansion in the absence of trade agreements. Indeed, the coefficient of *Progress x Market value*,
 345 which represents large companies with no sales, is negative and significant. Keeping *Foreign sales* constant at zero,
 346 therefore, we find that large companies lose more than medium-sized companies. In other words, size does not matter
 347 in the presence of foreign sales, but it does make a difference for firms with larger export opportunities. Medium-sized
 348 firms with no foreign sales seem to be the main winners of progress in trade agreements. This finding supports our causal
 349 argument, which puts emphasis on trade agreements allowing medium-sized companies to move from being non-
 350 participants to being participants in international trade.

351 *4.1 Sectoral effects*

352 The effects of trade agreements also likely differ across sectors. To investigate this possibility, we interacted the progress
 353 events with the sector and the three predictors discussed above. Contrary to the expectation of sectoral effects, Figure
 354 3 suggests that the differences across sectors are generally relatively small. Large companies in all sectors lose in case of
 355 progress events. Diversification is significant and positive in all industries, but less pronounced for the financial services
 356 sector. Capital intensity comes with the largest standard errors. This coefficient is highest for companies in the energy
 357 and basic materials sectors and lowest for firms in the healthcare sector.



358

359 **Figure 3:** Progress events interacted with firm characteristics by sector

360 *4.2 Robustness checks*

361 We conducted several robustness checks to see to which extent our findings are driven by specific decisions in terms of
362 operationalization (see section C of the online appendix). First, we use bootstrapped errors in addition to clustered errors
363 to ensure that the uncertainty contained in the generated dependent variable does not affect the results. Second, we
364 calculated our dependent variable using the two alternative metrics that we presented in the research design section: an
365 out-of-sample market-adjusted model and a mean-return model. Third, we varied the length of the event window for
366 which we calculate the cumulative abnormal returns. Instead of a 5-day window, we used a 3 and a 1-day window. Fourth
367 we dropped all firms that are not listed on any stock market in the United States. Fifth, we dropped the 9 November 2016
368 event, which caused significant reactions by more than 1300 firms in the sample. By dropping this event, we can make
369 sure that our results are not driven by a single, particularly strong event. For all these tests, the results are similar to
370 those presented above.

371 We also ran the models separately for the two agreements. The direction of the effects is generally the same in the two
372 models. This suggests that the same mechanisms are at work for TTIP and TPP: large non-exporters loose, medium-sized
373 firms, as well as diversified firms, gain. Yet, Figures AB.3 to AB.5 in the online appendix show that the effects are more
374 pronounced for TTIP than TPP. In general, progress in TTIP seems to generate lower stock market losses than progress in
375 TPP. This may be a consequence of the greater differences in levels of development among TPP member states. These
376 differences may lead to trade driven by comparative advantage, which tends to have greater distributional consequences
377 than the intra-industry trade resulting from a trade agreement among countries at the same level of development.

378 Lastly, we ran a placebo test with 15 randomly chosen event windows (excluding events related to TPP or TTIP), which
379 we treat as if they indicated progress in trade negotiations. For these events, we do not find support for our hypotheses.
380 The interaction between a firm's size and the event dummy is statistically significant but positive. On the randomly chosen
381 trading dates, therefore, larger firms won more than smaller firms. This result is plausible, as on average (given their
382 greater productivity), one might expect large firms to see greater stock market gains than smaller firms. In light of this
383 finding, the effects found for the event windows related to trade agreements appear even stronger, as the appropriate
384 comparison seems to be a positive effect, and not a zero effect as assumed in the interpretation above. The interactions
385 between the random event dummy and *Capital intensity* and *Diversification*, respectively, are not statistically significant.
386 These results make it more plausible that our results above are really related to the TPP and TTIP negotiations.

387 **5. Conclusions**

388 Discussions over trade agreements circle around the question of their distributional consequences: Who gains and who
389 loses from them? Do large companies gain more than small ones? Are diversified firms better off than firms with a narrow
390 product range? To answer these questions, we have assessed how the stock prices of United States companies reacted
391 to news on the progress and stagnation of two major trade negotiations. A dataset on 3,926 companies and their
392 characteristics has allowed us to investigate factors that explain varying reactions to news on the progress or stagnation
393 of trade talks. Our empirical analysis has focused on negotiations over TPP and TTIP. These are ideal cases to study, as
394 plenty of ups and downs characterize the negotiations over both agreements.

395 The central finding is much variation in the effects of the negotiations on the stock prices of companies even when
396 controlling for the sector in which they are active. Our analysis suggests that especially medium-sized companies (that
397 did not yet engage in exports) were expected to gain from the two agreements. The effects that we find for capital
398 intensity and product diversification are relatively small.

399 Overall, the findings of this article support the increasingly dominant view that sectoral models of trade policymaking are
400 no longer sufficient to explain the impact of trade agreements. This should matter for analyses of trade preferences, both
401 of firms and individuals. With respect to firms, our results indicate that trade agreements may broaden the set of winners
402 as compared to a situation in which trade is already quite liberal, but some important barriers to trade remain, to also
403 include medium-sized companies. At the individual level, because of trade agreements' heterogeneous effects across
404 firms, citizens should not only differ in their preferences towards trade agreements depending on their skill levels or the

405 sector in which they are employed, but also depending on the firm by which they are employed. The distributional effects
406 of trade agreements for firms and individuals, therefore, are complex.

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411 **Conflict of Interests**

412 The authors declare no conflict of interests.

413 **Supplementary Material**

414 Supplementary material for this article is available online in the format provided by the author (unedited).

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