

**LEGAL, FINANCIAL AND STRATEGIC FORCES IN
CROSS-BORDER DELIVERY TERMS**

Abstract

Drawing on three-dimensional (HS6 product-destination-year) data on delivery terms in exports from Turkey, this study comprehensively explores the determinants of INCOTERMS clauses in three dimensions: legal, financial, and strategic. We show that a larger share of foreign sales occurs on high seller risk responsibility delivery terms when the export destination has better regulations, easier customs clearance, and high financing costs. Our findings also suggest the influence of bargaining power and experience on delivery terms. That is, the share of exports transacted on high supplier responsibility terms decreases with the number of export destinations served but increases with the number of products shipped to a particular export market in the past.

Keywords: INCOTERMS, delivery terms in exports, international logistics, customs

1. INTRODUCTION

International trade has accelerated in the last two decades thanks to liberal trade policies across the globe, improvements in logistics and infrastructure, decreases in transportation costs, and the elimination of cultural and social barriers as a result of improved technology and communication. The total value of the world's exports of goods was about 19 trillion U.S dollars in 2019, compared to 6 trillion U.S dollars in 2000. Serving the global marketplace has become riskier and more complex, increasing the responsibilities of companies which conduct business internationally in comparison to those who do so domestically. There is an added element of uncertainty and informational barriers in the international business environment as well, which calls for buyers and sellers to properly define their responsibilities for credit, delivery, insurance, and other costs in their agreements.

A typical cross-border sale contract includes a trade clause called INCOTERMS to smooth global business practices (ICC, 2010). INCOTERMS are the commonly used trade terms relating to global sales arrangements published by the International Chamber of Commerce (ICC). Mainly, they set up buyers' and sellers' responsibilities and aim to avoid misunderstandings that may arise during the course of delivery of goods if companies trade across borders. INCOTERMS essentially governs the delivery of goods between parties engaging in global trade and each delivery term clarifies how the functions, risks, and costs are to be split between the trading parties. From sales to finance, operations to strategy, INCOTERMS influences all dimensions of an international company.

Since its inception in 1936, the INCOTERMS rules were revised in 1953, 1967, 1976, 1980 and every 10 years since then. The last two versions have 11 trade rules to specify the

tasks, costs, and risks in terms of the delivery of goods from sellers to buyers (Stojanovic and Ivetic, 2020). Table 1 presents the 11 INCOTERMS.¹ In terms of exporters' responsibility, EXW is the most favorable method in the sense that the seller is only obliged to make the goods available at a location to be picked up by the buyer. The responsibility of the supplier increases over the F, C and D rules. In F terms, the importer is responsible for the cost and risk of the main international shipment, whereas the seller is responsible from them in C terms. D terms, on the other hand, is the one that brings the highest responsibility and risk to the seller. For instance, in the most extreme D clause (DDP), the seller will face all risks of loss of or damage to the goods from the time they are shipped until they are delivered to the foreign buyer, not to mention the associated insurance and import clearance procedures.

<<<< Table 1 around here >>>>

This study uses three-dimensional panel data (destination-HS6 product-year) on shipping terms in export transactions from Turkey between the years 2002 and 2017 and explores the determinants of INCOTERMS in trade transactions. In particular, we provide a thorough discussion of the significance of three broad categories of drivers of the choice of delivery methods. The first category covers legal considerations, such as the need for sellers to hedge against legal and procedural risks. The second category reflects financing cost, because certain terms impose extra costs to buyers or sellers. The final set of drivers covers the strategic factors, such as experience and negotiation.

¹ For detailed information on INCOTERMS' brief history, revisions, and challenges with their practice, see Stapleton et al. (2014).

We identify several characteristics with significant impacts on delivery terms. First, we show that the legal procedures and enforcement in destination countries matter. That is, better rule of law and a more favorable corruption index rating in the destination leads to a larger share of exports under delivery terms with more seller responsibilities. Choosing delivery terms with more supplier responsibilities exposes the exporters to greater legal risks. For instance, customs are often cited as one of the most corrupt institutions in the world, and a bribe being offered during customs clearance without exporters' knowledge can create severe legal consequences and harm the reputation of businesses. Likewise, in countries with weak enforcement, it is harder to follow up disputes when there is damage to the goods in the buyers' destination. Furthermore, *Doing Business Report of the World Bank* documents substantial cross-country heterogeneity in the time and cost associated with the logistical process of importing activity and we also use their measures to test if it affects the delivery choice in international transactions. In truth, our results indicate that exporters are more likely to choose delivery terms with more responsibilities and risks when they ship to countries with stronger enforcement and easier customs clearance.

Additionally, our findings suggest that financing cost in the destination country significantly affects the delivery methods in exports. Higher financing cost in the destination country limits importers' operating working capital and their ability to cover the shipping and insurance costs. All other things being equal, this leads to a larger share of international shipments on suppliers' responsibility.

We also find evidence on the effect of strategic factors on INCOTERMS selection. First, we hypothesize that choice of payment term is related to outside options for the suppliers. If

exporters serve multiple destinations, it will be easier and less costly for them to switch to alternative markets, and this can give them greater negotiating power in the selection of the delivery terms. A major boon from using highly disaggregated data like ours is that we can calculate the number of export markets under each HS6 product category and use this variable to assess the role of bargaining power. Our results show that the share of exports under delivery terms with more exporter responsibilities decrease in the number of export destinations within the HS6 product category. This confirms the bargaining power hypothesis. Additionally, we provide evidence that delivery terms in exports is affected by past export activity. That is, share of export sales using the terms with higher supplier responsibility increases in the number of products traded between partners in the previous year. This speaks to the role of experience, knowledge and understanding the country specific factors in choosing cross-border delivery terms.

In our formal econometric analysis, we use extensive set of fixed effects to control for permanent time, country, and product effects. We first analyze the impact of legal, financial, and strategic factors on the share of imports sold on high supplier obligations terms. We also perform a battery of sensitivity tests. Our results are robust to a subsample analysis in which we exclude observations from different regions and industries. We also employ ordered logit and fractional response models. All estimations strongly confirm our hypotheses.

It should be noted that Turkey is a useful starting point for our investigation. Turkey is an important global crossroads for trade and travel with 27 container ports and 37 international airports. In addition, especially considering the post-millennium period, Turkey drastically liberalized its trade. Turkey signed trade agreements with 22 countries over the years of our

sample.² According to Turkish Statistical Institute (TUIK) documents, Turkey's total export volume increased from about 30 billion dollars to 158 billion dollar and the number of exporting firms increased from 30,000 to around 80,000 in the considered period. Turkey has consistently been one of the world's top-30 exporting countries and exported to almost all countries in the world in the last two decades. Overall, Turkey is a suitable country for our analysis not only because of the highly disaggregated data on delivery terms in exports but also because of the increase in its ties with global markets and the pattern of diversification over the period of our sample.

2. RELATED LITERATURE AND CONTRIBUTION

There is only a handful of papers that quantitatively analyze the delivery terms in exports (INCOTERMS). For instance, del Rosal (2016), using data on Spanish exporters, shows that distance between countries and the income level of the destination is important in choosing the INCOTERMS clause. Along the same strand of research, Stojanovic and Ivetic (2021) argues that INCOTERMS use can be used to assess the logistic performance of the countries. A major limitation of these studies is that del Rosal (2016)'s data only represents 2.5% of total exports and Stojanovic and Ivetic (2021)'s data covers only one year. In fact, both authors call for a more comprehensive analysis of the determinants of INCOTERMS clauses. One of the main challenges in studying the delivery arrangements used in international trade is that detailed data on how different types of INCOTERMS are chosen is not readily available. This paper brings a significant improvement over previous studies by presenting some patterns that emerge

² Habiyaremye and Avsar (2020).

from analyzing the disaggregated data (destination-product level) and empirically analyzing the determinants of INCOTERMS in different dimensions.

There are also few other studies about INCOTERMS, mainly using survey data. For instance, Yaakub and Szu (2017) investigates the factors that affect the use of different INCOTERMS. Their findings point out external factors like freight, transport and tariff issues and internal factors such as habits. In another related study, Yaakub et al. (2018) shows that there is a significant relationship between INCOTERMS selection factors and export performance. Both papers utilize survey data from Malaysia. Utilizing data from expert interviews, Hien et al. (2009) and Suraraksa et al. (2020) also study the main factors taken into consideration when deciding INCOTERMS clauses. Hien et al. (2009) discusses the factors to explain the selection of determinants of INCOTERMS clauses, then evaluates if these factors enhance the export performance of companies. According to their work, which utilizes expert interview data from Canada, INCOTERMS use frequency and knowledge, and the importance accorded to INCOTERMS are all positively related to export performance. Suraraksa et al. (2020), again using interview data, focuses on automotive parts manufacturers in Thailand and shows that operating costs is the most important factor for the companies' delivery choice followed by knowledge and understanding of international trade laws.

3. DATA AND OBSERVED PATTERNS

Our analysis draws on a highly disaggregated dataset of all Turkish exports between 2002 and 2017. This database on delivery terms, which is purchased from TUIK, reports the use of different delivery terms in export transactions at the HS six-digit product level for 198 export markets. Table 2 displays the share of exports under E, F, C and D terms over the years

of our sample. As shown, F-terms dominate the exports in Turkey but in the last decade there was a slight decrease in the usage of F terms. The share of exports under C terms stayed almost stagnant and, despite a big shift in the early 2000s, E terms did not show a consistent trend. The most remarkable point in Table 2 is the consistent upward trend in the D-terms, which was especially visible after the global economic recession in 2009. While the share of exports under D-terms was only 2% in 2002, this figure was recorded as 10.1% in 2017. As also shown in the last row in Table 2, the value of exports under D-terms had around 6.5% average yearly increase between 2002 and 2017.

<<<< Table 2 around here >>>>

In Table 3, we document the share of exports under different INCOTERMS for the top-20 export destinations of Turkey in the post-millennium period. According to TUIK statistics, around 45% of Turkey's exports were shipped to the European Union, which in fact makes half of the list in Table 2. Once again, C and F terms dominate the export transactions. However, the average share under F terms is lower for European countries, compared to yearly averages in Table 1. The difference in exports under D-terms is quite striking in Table 3. For instance, the share of exports under D-terms is 12% and 10% for Germany and France, respectively. In percentage points, these figures are 5-6 times more than the sample average and 10 times more than Turkey's traditional trade partners in the Middle Eastern region. When we look at other European countries, we observe similar numbers. This shows a preview of our findings in the sense that European countries have better enforcement and the share of exports under D-terms is substantially higher for these countries compared to others.

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Table 4 shows the share of exports under different delivery terms by three-digit ISIC industries. For this table, we matched the HS6 product codes with three-digit industries' code using the concordances table in the *Trade, Production and Protection Database of the World Bank*. As we break down the data by industries, we notice that the difference between C and F terms converge drastically. In fact, C terms dominate in Turkey's major exporting industries such as textiles, apparel, leather, footwear, and metal goods. Moreover, we observe higher shares of E terms in machinery, transportation, and furniture industries, which produce heavy and large-sized products, compared to other industries. When we compare the D terms, we find that Turkish exporters took more responsibility in capital intensive industries such as chemical and non-ferrous metals.

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The other variables used in our econometric analysis come from publicly available sources. We obtained the institutional variables from *World Governance Indicators*. This database reports aggregate and individual governance indicators for over 200 countries and territories over the period 1996–2019 for different dimensions of governance. We interchangeably used two variables from this database: control of corruption and rule of law indices. The control of corruption index captures perceptions of the extent to which public power is exercised for private gain, and the rule of law index captures perceptions of the extent to which agents have confidence in and abide by the rules of society. For both indices, a higher number indicates a better legal system. It is not surprising that there is a 96% correlation between these two variables.

We utilized the *World Bank Global Financial Development Database* for net interest margin, which is defined as net interest income of the banks relative to their total earning assets and commonly used to proxy financing cost in a country. We used World Bank's data sources for logistics and trade indicators as well. *Doing Business* records the time and cost associated with the logistical process of trading goods across borders. The performance score is between 0 and 100, where 0 represents the worst and 100 the best regulatory performance. The correlation between this performance score and the rule of law index is 75%.

Before proceeding, in Table 5, we present the average shares for each of the delivery terms after we split countries according to whether their measures of corruption index, net interest margin and time-to-import performance score are above or below sample medians. Consider the first two rows. In line with our hypothesis, share of exports under C and D terms (more responsibility for exporters) is higher for the export destinations with a control of corruption index above the median.³ In fact, 7% of exports to this set of countries were under D terms, in comparison to the 3% sample average in our dataset. Although we do not see a remarkable difference in terms of net interest margin, comparisons for above and below the median time-to-import performance score also gives a preview of our results. When the import procedures in the destination country are smoother, we observe less export share for F terms and more for C and D terms.

<<<< Table 5 around here >>>>

³ We used 2015 figures to have consistent comparison across countries.

4. EMPIRICAL ANALYSIS

Baseline Estimation

The dependent variable in our econometric model is the share of exports of product p in market destination i at year t , which was sold on high supplier obligations terms. As noted earlier, in C and D terms sellers have more responsibilities and risks compared to E and F terms. Thus, we combine these two methods in our share variable. Conversely, we also used a more conservative classification as a robustness and only included D terms in the high obligation category in an alternative specification.

We start with the following model:

$$HO_{pit} = \beta_0 + \beta_1 L_{it} + \beta_2 F_{it} + \beta_3 S_{pit-1} + \gamma_t + \vartheta_i + \theta_p + \varepsilon_{pit} \quad (1)$$

where p denotes HS6 digit product, i denotes export destination and t is time in years. HO_{pit} is the share of exports sold under C and D terms, L_{it} denotes the legal and procedural variables. Since the control of corruption, the rule of law index and time-to-import performance score are highly correlated, we use them separately in different specifications.⁴ F_{it} is the net interest margin of private banks in an export destination, which proxies financing cost. S_{pit} is a vector of strategic variables, which are the number of trade partners for product category p in the previous year and the number of products exported to country i in the previous year.⁵

Z_{it} are the control variables. We control for three other factors in addition to the variables above. First, we control for GDP per capita and political stability index of the destination country. We expect positive sign for both variables since exporters would be more

⁴ This is a common practice in political economy literature, for example see Busse and Hefeker (2007).

⁵ These variables are used in logarithms to reduce the dispersion.

willing to take risks in developed and politically stable countries. Second, the bargaining power may be lower for the new entrants in the export destination. For this consideration, we created a dummy variable, $Enter_{pit}$, which is unity if the product is introduced for the first time in destination i in our dataset. The expected sign for this variable is positive as well.

Crucially, the multidimensional feature of our data allows us to use an extensive set of fixed effects in our estimation. To begin with, financial cost as well as a political shock in Turkey can affect the delivery terms in exports. For this consideration, we include year fixed effects, γ_t , in our model. Several time invariant gravity model country-level variables like distance, language, historical ties, area, geographical position, and culture can affect the choice of INCOTERMS clause as well. To control for these factors, we add country fixed effects, ϑ_i , to our specifications. Last but not least, some unobservable product features such as technology intensity, packing standards and weight can explain the variation in delivery methods. For this reason, our model includes product fixed effects, θ_p , too.

Table 7 documents the estimation results. All specifications include year, country as well as product fixed effects. We also clustered the standard errors for importer-product combinations. For legal factors, we use the control of corruption index in the first, the rule of law index in the second and the time-to-import performance score in the third specification. The use of the time-to-import performance score decreases the number of observations from around 1.5 million to 1.2 million.

As shown, our explanatory variables are statistically significant at 1% with expected signs across all specifications. Consistent with our hypothesis, legal factors play an important role in explaining the differences in the delivery terms in exports. To gauge economic significance, consider the following back-of-the-envelope calculation. If an export destination

in the 25th percentile of control of corruption index (Ukraine) moves to the 50th percentile, such a switch will increase the share of high seller responsibility delivery terms by 1.2 percentage points. Similarly, if a country in the 50th percentile of control of corruption index (Hungary) moves to the 75th percentile, around 2.2 percentage points increase is estimated in the dependent variable from this change. Using alternative measures for legal factors, our findings are robust. The rule of law index is positive and statistically significant as well in both specifications 2 and 4. Similarly, our hypothesis on easy customs clearance is also strongly supported by our estimates. The share of exports sold on high supplier obligations increases with the time-to-import performance score. This shows that sellers are less willing to take extra risks in terms of delivery terms when the unloading procedures are more complicated in the customs of the export market.

The estimated coefficient on the net interest rate margin is positive and statistically significant, in accordance with our predictions. Higher financing cost in the destination makes buyers less willing to take responsibilities and pay the cost of shipments in cross-border transactions. Thus, a smaller share of export sales is transacted on C and D terms when financing cost is high. According to the estimates, one standard deviation increase in the net interest margin increases the dependent variable by around 1.08 percentage points.

Turning to strategic factors, the results in Table 7 show that the number of export destinations in the past for an HS6 product category exert a negative and statistically significant influence on the share of export sales under C and D terms. This finding supports the bargaining power hypothesis. The role of competitive pressures in sales contracts has also been the subject of Wilner (2000), which shows that a buyer obtains more trade credit if he is responsible for a

large percentage of the seller's profit. Our estimates show another margin of adjustment in this regard and demonstrate that the buyer takes more responsibilities in terms of delivery terms if the seller can switch to alternative destinations easier. In addition, the positive coefficient on the number of HS6 products exported to the same destination before suggests that experience and knowledge matters for choosing the INCOTERMS. Exporters serving their foreign markets with multiple products are usually larger and more experienced since they cover not only market specific but also many products specific fixed cost of exporting.⁶ So, it is easier for them to bear the extra costs of C and D terms, everything else being equal. Taken together, our results confirm the role of strategic factors in selecting the delivery terms in exports. When it comes to the control variables, we find that exporters took more responsibilities in richer and politically stable countries. The dummy variable, *Enter_{pit}*, on the other hand is not statistically significant, which is mainly because the average number for this dummy is less than 10%. However, we still keep it in our models as a control variable for the rest of the specifications.

As an alternative dependent variable, we also use the share of exports transacted on D terms and excluded the C terms. This variable extends the degree of responsibility and risk for the exporter. Table 8 reports the estimates from this exercise. As shown, the estimates still provide coefficients with expected sign and statistical significance.

Robustness checks

In this section we subject our results to two alternative estimation methods. We begin by ordered logit model following del Rosal (2016). To do so, we classify delivery terms in each observation (product-destination-year combination) as E, F, C and D terms based on the

⁶ Alvarez et al. (2013).

dominance of each method. That is, the dependent variable is equal to 1 if majority of exports to a specific market for an HS6 product category was transacted on E terms. Similarly, the dependent variable becomes 2 for F, 3 for C and 4 for D terms. In other words, we order the delivery terms based on seller's responsibility and risk.

The results of the ordered logit model are reported in Table 10. We show the marginal effects of our independent variables on different delivery terms in specifications 1 to 4. We only used control of corruption index to save space, but our results are insensitive to using the other legal variables as well. As shown, our results remain salient. The probability of C and D terms (high seller responsibility) dominating the exports increases with the increase in interest margin, control of corruption index and number of exported products in the past, whereas it decreases with the number of export markets being served before. The marginal effects for E and F delivery terms (high buyer responsibility) are the exact opposite of the first two columns in terms of the signs.

We also try fractional response model, which is suggested by Pepke and Wooldridge (1996) if the dependent variable lies between 0 and 1. We estimate equation (1) with the fractional response model and document the estimates in Table 11. Our results obtained with this maximum-likelihood estimate mirror those above. Our legal, financial, and strategic variables are all significant with expected signs.

Do our findings depend sensitively on a set of observations? We check this concern by selectively dropping different sets of observations.⁷ We first drop the observations from European and MENA region since these regions are Turkey's major export markets. Then, we successively delete observations for low-income and high-income countries. We also drop the

⁷ Similar robustness check is conducted in Rose and Spiegel (2011).

observations from Turkey's top exporting industries, textile, and metals. Coefficient estimates from this analysis are displayed in Table 11. Again, to save space we only show the coefficients from control of corruption index, but our results do not change when we use the other variables concerning legal factors.

Some readers may question the variation in delivery terms within the product-country combination. For the entire sample, 52% of the product-country combinations have more than two delivery (E, F, C, D) categories. If we focus only on the product-country combinations with a trade value of at least 10,000 dollars, then 75% of the observations have exports shipped under at least two delivery terms. Although we address the issue of the mass points in the fractional response model, we also have another robustness check where we drop the observations that had less than 10,000 dollars' worth of trade value. The result of this specification is reported in the last column of Table 11. As shown, our results are insensitive to this treatment. Overall, none of the subsample analysis shakes the confidence we have in our main findings. All our financial, legal and strategic indicators enter significantly to our regressions with expected signs.

Taken together, our findings are robust to inclusion of year fixed effects, product fixed effects, country fixed effects, different measures of legal variables, alternative estimation methods and subsample analysis. Thus, we overwhelmingly confirm that legal, financial, and strategic forces play a role in determining delivery terms in exports.

CONCLUSION

Serving the global markets bring extra uncertainty, risk, and cost to companies and for that reason they use internationally recognized INCOTERMS clauses to facilitate their export transactions and avoid costly mistakes. INCOTERMS specifies the responsibilities for

shipment, insurance, documentation, customs clearance, and other logistical activities and has served as the lifeblood of cross-country transactions for more than 80 years. Despite its critical role in global trade, the literature on analyzing the factors to explain the use of INCOTERMS is ironically scarce, mainly because of lack of comprehensive data on delivery terms.

In this study, we take an important step to push research on this topic forward and place the microscope on the determinants of INCOTERMS in three dimensions: legal, financial, and strategic factors. Using three-dimensional (destination-HS6 product-year) panel data of delivery terms in exports from Turkey, we first show that share of exports transacted on high supplier risk methods increases when exporters ship their products to countries with better legal systems and easier customs clearance. This finding provides important policy implications. Global political instability is on the rise. Ten years of data in the Fragile State Index demonstrates that the number of states in the 'high alert' and 'very high alert' categories increased by more than 100% in the last 15 years, not to mention \$20.4 billion worth of political risk and credit enhancement guarantees issued between 2015 and 2018. Exporters stay alert to legal and political conditions in their destinations and they clearly prefer less risky and costly terms in politically fragile markets. This can especially be important in North-South trade in the sense that importers of the south countries may rely more on delivery terms with high supplier risks. Improving customs' standard and contract enforcement can help the importers of the developing countries to negotiate better terms for them.

We also find evidence that financing cost matters in delivery terms. When the financing cost is higher in the destination country, this negatively influences importers' operating working capital and their ability to cover the shipping and insurance costs. This, all other things being equal, leads to a larger share of international shipments on suppliers' responsibility. Financing

cost, to date, has been a matter of interest in terms of trade credit. Especially in the aftermath of 2008-2009 global financial meltdown, G20 countries agreed to provide \$250 billion in trade finance for two years to support international trade. Our findings show that financing cost does not only play a role in trade credit but also in delivery terms. We further find that financial dependence of an industry matters for the effect of financing costs on delivery terms in exports. This is also in line with the empirical literature emphasizing the role of financial development in international trade.

Our study also uncovers that strategic factor are important for delivery terms in exports. Trading across borders does not happen overnight. Developing business relationships, learning the bureaucracy of exporting in different destinations, and building necessary networks can take years. Several studies have shown that past exporting is one of the main determinants of surviving in the foreign markets. We built on this issue and tested whether past trade relationships matter for delivery terms in exports. For this purpose, we used the number of different products exported in the past to a particular foreign market as a proxy for experience. Our estimates show that this variable significantly increases the share of exports transacted on high seller responsibility terms. This finding is very policy relevant, too. Exporters can have competitive advantage in foreign markets if they can offer the buyers a more attractive sale contract such as C and D terms. However, to be able to accept responsibilities, companies need a thorough understanding of INCOTERMS rules and procedures. Local governments can help the global firms in this regard to better inform about specific conditions in different markets,

culture, negotiating and other export related issues not only to expand in global markets but also to increase their capability to manage risks and certain delivery tasks.⁸

Another strategic factor explored in our study is the role of bargaining power. Are exporters with weaker bargaining power towards their customers more likely to sell on high responsibility terms? The answer to this question is yes, according to our findings. The issue of bargaining power was explored in the trade credit literature before (Fabbri and Klapper, 2016). Outside options can drive the sellers to negotiate better terms. As mentioned before, starting to serve a new export market requires substantial fixed costs and sellers serving a lot of different markets may have an easier time diverting their shipments to alternative routes since they do not need to pay those fixed costs again. Thus, number of foreign markets served in the past should be negatively related to share of exports under high seller responsibility delivery terms. We also show that this is indeed the case.

There are several avenues for future research in this area. For instance, it would be interesting to examine the interaction between currency choice in contracts and delivery terms in exports. This can be an interesting extension to blend the financial and logistics aspect of international trade since the decisions are made simultaneously. Another interesting extension can be the impact of a trade policy shock in an export destination or even in a third country. How do trade policy shocks or trade wars affect INCOTERMS clauses? Exporting to riskier countries may also call for better export insurance products and easier access to export insurance agencies. In this regard, the relationship between export insurance and delivery terms

⁸ An example in this category is the information shared in the US Department of Commerce's website about specific INCOTERMS conditions in Brazil (7/13/2020).

can also be a fruitful area to explore. Pursuing these research questions is especially important in this decade given the increase in protectionist measures and political risk worldwide.

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Table 1. The INCOTERMS 2010 CLAUSES

EXW {Ex-Works, the seller delivers at its place of business}
FCA {Free Carrier, the seller delivers at its place of dispatch}
FSA {Free Alongside Ship, the seller delivers at its port}
FOB {Free on Board, the seller delivers at its port}
CFR {Cost and Freight paid to; the seller delivers at buyer's port}
CIF {Cost, Insurance, Freight paid to at buyer's port}
CPT {Carriage paid to; the seller delivers at buyer's named destination}
CIP {Carriage, Insurance Paid to, the seller delivers at buyer's named destination}
DAP {Delivered at buyer's named place of destination}
DAT {Delivered at buyer's named terminal}
DDP {Delivered Duty Paid to buyer's named place of destination}

Source: Stojanovic and Ivetic (2020).

Table 2. Share of exports under different delivery terms (2002-2017)

	E terms	F terms	C terms	D terms
2002	6.1%	51.4%	34.3%	2.0%
2003	8.3%	47.4%	35.7%	2.2%
2004	10.8%	48.4%	37.2%	3.0%
2005	11.5%	49.7%	35.9%	3.5%
2006	12.4%	47.9%	35.2%	4.0%
2007	13.2%	47.5%	34.3%	4.6%
2008	12.5%	47.7%	34.5%	4.9%
2009	13.3%	48.6%	32.2%	5.1%
2010	13.7%	46.4%	32.3%	6.6%
2011	14.1%	45.9%	31.4%	8.3%
2012	13.2%	49.4%	29.7%	7.5%
2013	14.8%	45.4%	31.7%	7.9%
2014	15.7%	42.7%	32.8%	8.6%
2015	14.9%	44.1%	32.0%	8.9%
2016	16.3%	43.6%	30.9%	9.2%
2017	15.3%	44.9%	29.7%	10.1%
Average yearly percentage change	3.08%	1.92%	1.26%	6.43%

**Table 3. Share of exports under different delivery terms
(Turkey's top-20 export destinations)**

	E terms	F terms	C terms	D terms
Germany	13%	43%	31%	12%
France	27%	30%	32%	10%
Italy	12%	41%	37%	8%
Spain	16%	36%	38%	8%
Iraq	17%	58%	21%	2%
United States	11%	58%	22%	6%
ed Kingdom	16%	40%	30%	12%
Netherlands	13%	46%	33%	7%
Belgium	21%	39%	31%	7%
Israel	13%	39%	45%	13%
Romania	23%	35%	32%	8%
Poland	21%	32%	31%	15%
Russia	17%	49%	28%	4%
China	3%	57%	38%	0.7%
United Arab Emirates	4%	51%	43%	0.4%
Egypt	6%	36%	56%	0.8%
Saudi Arabia	8%	34%	55%	1%
Bulgaria	4%	49%	45%	0.5%
Iran	16%	53%	30%	0.4%
Greece	13%	36%	36%	13%

Table 4. Share of exports under different delivery terms by industries

Industry Name	E terms	F terms	C terms	D terms
Food	13%	40%	42%	2%
Wood/furniture	16%	42%	39%	0.1%
Beverages	18%	32%	46%	0.9 %
Tobacco	13%	25%	54%	6%
Textile	6%	44%	46%	2%
Wearing apparel	3%	35%	59%	1%
Leather products	7%	36%	53%	2%
Footwear	6%	36%	55%	1%
Wood products, except furniture	14%	37%	44%	3%
Manufacture of paper and paper products	16%	39%	38%	5%
Chemicals	15%	45%	31%	7%
Petroleum refineries	12%	46%	36%	2%
Rubber products	19%	37%	36%	4%
Plastic products	18%	38%	39%	4%
Pottery, china, earthenware	14%	32%	49%	3%
Glass and glass products	14%	40%	40%	4%
Other industries based on stone and earth	13%	38%	44%	3%
Iron and steel	15%	46%	33%	5%
Non-ferrous metal basic industries	15%	41%	33%	9%
Metal goods industry	17%	38%	40%	3%
Machinery	20%	40%	36%	3%
Electrical machinery	18%	36%	40%	4%
Transportation vehicles	19%	30%	45%	2%
Professional and scientific equipment	16%	40%	40%	3%
Manufacture not elsewhere classified	11%	33%	53%	2%

Table 5. Cross-Country Comparison of Delivery Terms (2015)

	E terms	F terms	C terms	D terms
Above Median Control of Corruption Index	16%	31%	44%	7%
Below Median Control of Corruption Index	17%	36%	43%	2%
Above Median Net Interest Margin	18%	37%	41%	2%
Below Median Net Interest Margin	18%	36%	42%	2%
Above Median Time-to-import performance score	19%	35%	39%	5%
Below Median Time-to-import performance score	20%	41%	35%	2%

Table 6. Estimation Results			
Dependent variable: Share of exports transacted on C+D terms			
Variables	(1)	(2)	(3)
Control of corruption index	0.011*** (0.001)		
Rule of law index		0.014*** (0.002)	
Time-to-import (performance score)			0.001*** (0.000)
Net interest margin	0.003*** (0.000)	0.003*** (0.000)	0.004*** (0.000)
# of destinations for HS6 product ψ	-0.005*** (0.001)	-0.005*** (0.001)	-0.006*** (0.002)
# of HS6 products shipped to the destination ψ	0.051*** (0.002)	0.052*** (0.002)	0.037*** (0.004)
Political Stability Index	0.012*** (0.000)	0.012*** (0.000)	0.009*** (0.001)
GDP ψ	0.117*** (0.002)	0.114*** (0.002)	0.072*** (0.004)
Entry	0.001 (0.001)	0.001 (0.001)	0.002 (0.001)
Year fixed effects	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
Product fixed effects	Yes	Yes	Yes
Observations	1,564,604	1,564,604	980,238

Notes: 1) Dependent variable: Share of exports under high seller obligation delivery terms. 2) Robust standard errors are in parentheses. 4) *, **, *** represent significance at the 10, 5, and 1% levels, respectively. 5) ψ variables are in logarithms

Table 7. Estimation Results			
Dependent variable: Share of exports transacted on D terms			
Variables	(1)	(2)	(3)
Control of corruption index	0.014*** (0.000)		
Rule of law index		0.022** (0.008)	
Time-to-import (performance score)			0.001*** (0.000)
Net interest margin	0.002*** (0.000)	0.001*** (0.000)	0.002*** (0.000)
# of destinations for HS6 product ψ	-0.001*** (0.000)	-0.001*** (0.000)	-0.002*** (0.000)
# of HS6 products shipped to the destination ψ	0.021*** (0.000)	0.022*** (0.000)	0.021*** (0.001)
Political Stability Index	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
GDP ψ	0.016*** (0.000)	0.016*** (0.000)	0.016*** (0.000)
Entry	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Year fixed effects	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
Product fixed effects	Yes	Yes	Yes
Observations	1,564,604	1,564,604	980,238

Notes: 1) Dependent variable: Share of exports under D delivery term. 2) Robust standard errors are in parentheses. 4) *, **, *** represent significance at the 10, 5, and 1% levels, respectively. 5) ψ variables are in logarithms

Table 8. Ordered Logit Model

Variables	Marginal effects for E terms	Marginal effects for F terms	Marginal effects for C terms	Marginal effects for D terms
Control of corruption index	-0.003*** (0.000)	-0.002*** (0.000)	0.001*** (0.000)	0.002*** (0.000)
Net interest margin	-0.002*** (0.000)	-0.003*** (0.000)	0.004*** (0.000)	0.001*** (0.000)
# of destinations for HS6 product ψ	0.011*** (0.000)	0.014*** (0.000)	-0.021 (0.000)	-0.017 (0.000)
# of HS6 products shipped to the destination ψ	-0.026*** (0.000)	-0.023*** (0.000)	0.042*** (0.001)	0.006*** (0.000)
Political Stability Index	-0.001*** (0.000)	-0.006*** (0.000)	0.005*** (0.000)	0.013*** (0.000)
GDP ψ	-0.001*** (0.000)	-0.001*** (0.000)	0.010*** (0.000)	0.001*** (0.000)
Entry	0.0001 (0.000)	0.0001 (0.000)	0.0001 (0.000)	0.0001 (0.000)

Notes: 1) The model includes year and country fixed effects. 2) Robust standard errors are in parentheses. 3) ψ variables are in logarithms. 4) *, **, *** represent significance at the 10, 5, and 1% levels, respectively.

**Table 9. Fractional Response Model
Marginal Effects**

Dependent variable: Share of exports transacted on C+D terms

Variables	(1)	(2)	(3)
Control of corruption index	0.005*** (0.001)		
Rule of law index		0.024*** (0.001)	
Time-to-import performance score ψ			0.008*** (0.001)
Net interest margin	0.004*** (0.000)	0.005*** (0.000)	0.004*** (0.000)
# of destinations for HS6 product ψ	-0.006*** (0.000)	-0.006*** (0.000)	-0.038*** (0.002)
# of HS6 products shipped to the destination ψ	0.033*** (0.001)	0.032*** (0.001)	0.123*** (0.012)
Political Stability Index	0.064*** (0.004)	0.064*** (0.004)	0.051*** (0.006)
GDP ψ	0.392*** (0.011)	0.381*** (0.011)	0.190*** (-.023)
Entry	0.002 (0.000)	0.002 (0.000)	0.002 (0.000)
Year fixed effects	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes
Product fixed effects	Yes	Yes	Yes
Observations	1,564,604	1,564,604	1,233,879

Notes: 1) Dependent variable: Share of exports under high seller obligation delivery terms. 2) Robust standard errors are in parentheses. 3) ψ variables are in logarithms. 4) *, **, *** represent significance at the 10, 5, and 1% levels, respectively.

Table 10. Subsample Analysis

Variables	Drop EU countries	Drop MENA Countries	Drop Low Income Countries	Drop High Income Countries	Drop Textile and Metal Products	Drop observations with <10k volume
Control of corruption index	0.037*** (0.003)	0.003* (0.001)	0.011*** (0.001)	0.016*** (0.002)	0.007*** (0.002)	0.014*** (0.001)
Net interest margin	0.005*** (0.000)	0.002*** (0.000)	0.003*** (0.000)	0.003*** (0.000)	0.003*** (0.000)	0.003*** (0.000)
# of destinations for HS6 product ψ	-0.008** (0.003)	-0.018*** (0.001)	-0.006*** (0.000)	-0.019*** (0.000)	-0.003*** (0.000)	-0.018*** (0.001)
# of HS6 products shipped to the destination ψ	0.036*** (0.002)	0.058*** (0.001)	0.023*** (0.001)	0.066*** (0.001)	0.036*** (0.001)	0.051*** (0.001)
Political Stability Index	0.005*** (0.001)	0.006*** (0.001)	0.005*** (0.001)	0.006*** (0.001)	0.007*** (0.001)	0.001* (0.000)
GDP ψ	0.089*** (0.002)	0.087*** (0.002)	0.081*** (0.002)	0.078*** (0.002)	0.082*** (0.002)	0.075*** (0.002)
Entry	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Product fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	967,331	1,235,562	1,262, 798	1,084,646	1,158,434	954,408

Notes: 1) Dependent variable: Share of exports under high seller obligation delivery terms. 2) Robust standard errors are in parentheses. 4) *, **, *** represent significance at the 10, 5, and 1% levels, respectively. 5) ψ variables are in logarithms.