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Poultry in Motion: A Study of International Trade Finance Practices

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Online Appendix for

Poultry in Motion: A Study of International Trade Finance Practices

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May 30, 2014

This Online Appendix documents some theoretical extensions discussed in "Poultry in Motion: A Study of International Trade Finance Practices." It also contains the Appendix Figures and Appendix Tables that are referred to in the main text of the paper.

A Trade Finance with Importer Bargaining Power

The model developed in the main text assumes that the exporter makes a take-it-or-leave-it offer to the importer. This section explores the robustness of the model's predictions to situations in which the importer has some bargaining power in the initial negotiations. For simplicity, this section rules out the possibility of misbehavior on the part of the exporter by assuming $\delta_X = 1$, so that letters of credit are a dominated financing mode.

A.1 Exogenous Financing Costs

Whenever the costs of financing working capital requirements are exogenous, the choice of financing mode is independent of the relative bargaining power of the exporter and the importer. Note that the total surplus over which the exporter and the importer bargain over under a cash in advance contract is

$$\pi_{ij}^{CIA} = \frac{\left(\gamma_i + \left(1-\gamma_i\right)\delta_X\right)}{1+r_j} R\left(x_j^{CIA}, \theta\right) - \tau_{ij} x_j^{CIA}. \tag{A.1}$$

Regardless of whether the exporter or the importer sets the quantity x_j^{CIA} traded, this quantity maximizes π_{ij}^{CIA} in (A.1), just as in the main text.

In a post shipment term transactions, the quantity x_j^{PST} is set to maximize

$$\pi_{ij}^{PST} = \frac{\left(\gamma_j + \left(1-\gamma_j\right)\mu_X\left(\tau_{ij}\right)\right)}{1+r_i} R\left(x_j, \theta\right) - \tau_{ij} x_j. \tag{A.2}$$

Assume that in each of these cases, the exporter captures a share $\beta \in [0,1)$ of this surplus, as opposed to a share $\beta = 1$ assumed in the main text.

Regardless of whether the exporter or the importer (or the two of them jointly) decides on the financing terms for a particular transaction, it continues to be the case, just as in the main text, that cash in advance terms are preferred to post shipment terms if and only if

$$\frac{\gamma_i + (1-\gamma_i)\,\delta_X}{1+r_j} > \frac{\gamma_j + \left(1-\gamma_j\right)\mu_X\left(\tau_{ij}\right)}{1+r_i}. \tag{A.3}$$

Intuitively, the exporter and the importer can use the contracted price as a vehicle to transfer surplus and thus there is no reason to distort the choice of financing terms in order to achieve the division of surplus dictated by the relative bargaining strength of the agents.

A.2 Endogenous Financing Costs

Whenever financing costs are endogenous, matters become a bit more complicated because these financing costs, and thus the relative profitability of different financing terms, might change endogenously with the size of the required transfers. As shown below, however, this has little impact on the main results of the paper.

Consider first the case of a cash in advance transaction. As before, the exporter obtains a share β of the gains from trade in (A.1), which implies that the initial transfer should be an amount equal to

$$P_{0,ij}^{CIA} = \beta \frac{\left(\gamma_i + (1-\gamma_i)\,\delta_X\right)}{1+r_j} R\left(x_j,\theta\right) + (1-\beta)\,\tau_{ij} x_j.$$

The participation constraint of the local bank is the same as in the main text, i.e.,

$$\left(1+\rho_j\right) P_0^{CIA} \leq \left(\gamma_j + \left(1-\gamma_j\right)\mu_B\right)\left(\gamma_i + (1-\gamma_i)\,\delta_X\right) R\left(x_j,\theta\right). \tag{A.4}$$

If the constraint binds, then the exporter receives a payoff equal to

$$P_{0,ij}^{CIA} - \tau_{ij} x_j = \frac{\left(\gamma_i + (1-\gamma_i)\,\delta_X\right)\left(\gamma_j + \left(1-\gamma_j\right)\mu_B\right)}{1+\rho_j} R\left(x_j,\theta\right) - \tau_{ij} x_j, \tag{A.5}$$

just as in the main text. The main difference is that the importer obtains a positive payoff equal to

$$\frac{(1-\beta)}{\beta}\left(P_{0,ij}^{CIA} - \tau_{ij} x_j\right) = \frac{(1-\beta)}{\beta}\left[\frac{\left(\gamma_i + (1-\gamma_i)\,\delta_X\right)\left(\gamma_j + \left(1-\gamma_j\right)\mu_B\right)}{1+\rho_j} R\left(x_j,\theta\right) - \tau_{ij} x_j\right]. \tag{A.6}$$

Note, however, that regardless of whether the exporter or the importer sets the quantity x_j^{CIA} traded, this quantity maximizes the term in brackets on the right-hand-side of (A.6), just as in the main text.

If the local bank's participation in (A.4) does not bind, a situation which is not possible when β is close enough to 1 but is possible for low enough β, then the cost of financing for the importer is equal to ρ_j and the payoffs to the exporter and importer are analogous to those derived under exogenous financing costs, replacing r_j with ρ_j.

Consider next the case of post shipment terms. With general bargaining power, the payment from the importer to the exporter at $t = 2$ is given by

$$P_{1,ij}^{PST} = \beta\left(\gamma_j + \left(1-\gamma_j\right)\mu_X\left(\tau_{ij}\right)\right) R\left(x_j,\theta\right) + (1-\beta)\left(1+r_i\right)\tau_{ij} x_j.$$

The exporter can only pledge a fraction $\gamma_i + (1-\gamma_i)\mu_B$ of this payment to its local bank, and thus the level of x_j chosen by the exporter must satisfy

$$(1+\rho_i)\tau_{ij}x_j \leq (\gamma_i + (1-\gamma_i)\mu_B)\left[\beta\left(\gamma_j + \left(1-\gamma_j\right)\mu_X(\tau_{ij})\right)R(x_j,\theta) + (1-\beta)(1+r_i)\tau_{ij}x_j\right], \qquad \text{(A.7)}$$

where ρ_i is the cost of funds in the exporting country.

For a sufficiently large β, this constraint does not bind when γ_i or μ_B are sufficiently large. When the constraint (A.7) does not bind, as in the main text, the payoffs to the exporter and importer will be analogous to those derived under exogenous financing costs, replacing r_i with ρ_i.

When the constraint binds, condition (A.7) will holds with equality and r_i and x_j^{PST} are jointly determined by this condition together with

$$\frac{\left(\gamma_j + \left(1-\gamma_j\right)\mu_X(\tau_{ij})\right)}{1+r_i}R'\left(x_j^{PST},\theta\right) = \tau_{ij}$$

(remember that this first-order condition holds regardless of which agent decides on the quantity x_j^{PST} being transacted). Straightforward manipulations reveal

$$\begin{aligned}
\frac{\alpha\left(x_j^{PST}\right)}{(\gamma_i + (1-\gamma_i)\mu_B)\left(\alpha\left(x_j^{PST}\right)(1-\beta)+\beta\right)}(1+\rho_i) &= 1+r_i \\
\frac{\left(\gamma_j + \left(1-\gamma_j\right)\mu_X(\tau_{ij})\right)(\gamma_i + (1-\gamma_i)\mu_B)}{1+\rho_i}R'\left(x_j^{PST},\theta\right) &= \frac{\alpha\left(x_j^{PST}\right)}{\alpha\left(x_j^{PST}\right)(1-\beta)+\beta}\tau_{ij}, \qquad \text{(A.8)}
\end{aligned}$$

where $\alpha\left(x_j^{PST}\right) \equiv x_j^{PST} \cdot R'\left(x_j^{PST}\right)/R\left(x_j^{PST}\right)$ is the elasticity of revenue with respect to the quantity produced.

Now consider the determinants of the choice between the two payment methods, which is again governed by condition (A.3), but with the financing costs r_i and r_j endogenously determined. There are four cases to consider depending on whether the financing constraints (A.4) and (A.7) bind.

Case 1. When (A.4) binds but (A.7) does not, inequality (A.3), which provides the set of parameter values under which cash in advance terms are preferred to post shipment terms, becomes

$$\gamma_i + (1-\gamma_i)\delta_X > \frac{1+\rho_j}{1+\rho_i}\frac{\gamma_j + \left(1-\gamma_j\right)\mu_X(\tau_{ij})}{\gamma_j + \left(1-\gamma_j\right)\mu_B},$$

just as in the main text, and the results as in Propositions 1 and 2 of the main text are unchanged.

Case 2. When neither (A.4) nor (A.7) bind, the costs of financing are given by the technological parameters ρ_i and ρ_j and condition (A.3) reduces to

$$\gamma_i + (1-\gamma_i)\delta_X > \frac{1+\rho_j}{1+\rho_i}\left(\gamma_j + \left(1-\gamma_j\right)\mu_X(\tau_{ij})\right).$$

In this situation, the likelihood that a transaction occurs on cash in advance terms as opposed to post shipment terms is decreasing in the institutional quality of the importing country (γ_j) regardless of the relative size of $\mu_X(\tau_{ij})$ and μ_B (although the value of these parameters can affect whether the constraint binds or not). Hence, the model continues to explain the empirically observed patterns. Furthermore, Proposition 2 continues to hold.

Case 3. When (A.4) and (A.7) both bind, inequality (A.3) becomes

$$\frac{\gamma_i + (1-\gamma_i)\,\delta_X}{\gamma_i + (1-\gamma_i)\,\mu_B} > \frac{1+\rho_j}{1+\rho_i}\,\frac{\gamma_j + \left(1-\gamma_j\right)\mu_X\left(\tau_{ij}\right)}{\gamma_j + \left(1-\gamma_j\right)\mu_B}\,\frac{\alpha\left(x_j^{PST}\right)(1-\beta)+\beta}{\alpha\left(x_j^{PST}\right)}. \tag{A.9}$$

Comparative statics are here a bit more complicated in this case given the extra term with $\alpha\left(x_j^{PST}\right)$. A first point is that for a constant-elasticity function, $R(x) = Ax^{\alpha}$, we have $\alpha(x) = \alpha$ for all x, which immediately implies that the results in Propositions 1 and 2 continue to hold. The revenue function is isoelastic whenever the firm faces a demand with constant price-elasticity, a common parameterization in the literature.

When $\alpha\left(x_j^{PST}\right)$ depends on x_j^{PST}, modified versions of main results in Proposition 1 and 2 can still be obtained by putting more structure on the function $\alpha\left(x_j^{PST}\right)$. For instance, if one makes the empirically plausible assumption that $\alpha\left(x_j^{PST}\right)$ is weakly decreasing in x_j^{PST}, as in the widely-used linear demand case, then, as in Proposition 1, $\mu_B > \mu_X\left(\tau_{ij}\right)$ is a sufficient condition for the likelihood that a transaction occurs on cash in advance terms as opposed to post shipment terms to be decreasing in the institutional quality γ_j of the importing country.[1] The reason for this is that, from equation (A.8), x_j^{PST} is still necessarily increasing in γ_j because the right-hand-side of (A.8) is decreasing in x_j^{PST}, while the induced decrease in $\alpha\left(x_j^{PST}\right)$ makes it even less likely that condition (A.9) holds when γ_j rises. The main difference relative to the main text is that $\mu_B > \mu_X\left(\tau_{ij}\right)$ is no longer a necessary condition to explain the empirically observed negative correlation between the use of post shipment terms and the institutional quality of the importing country. In the empirically implausible case in which $\alpha\left(x_j^{PST}\right)$ were increasing in x_j^{PST}, $\mu_B > \mu_X\left(\tau_{ij}\right)$ would no longer be sufficient to ensure a negative effect of institutional quality on the use of post shipment terms. The derivations above imply, however, that the main results in the text continue to hold as long as $\alpha(x)$ does not increase in x too quickly.

(A.9) also implies that, as long as $\alpha(x)$ is sufficiently insensitive to x, the results in Proposition 2 hold and the likelihood that a transaction occurs on cash in advance terms as opposed to post shipment terms is increasing in the distance between the importing and exporting countries (τ_{ij}), while the negative effect of weak importer institutions on the expected relative profitability of transactions that occur on post shipment terms is alleviated by proximity between markets. The case in which the revenue function is isoelastic will satisfy this condition.

Case 4. Finally, when constraint (A.4) does not bind but constraint (A.7) does bind, inequality (A.3) becomes

$$\frac{\gamma_i + (1-\gamma_i)\,\delta_X}{\gamma_i + (1-\gamma_i)\,\mu_B} > \frac{1+\rho_j}{1+\rho_i}\left(\gamma_j + \left(1-\gamma_j\right)\mu_X\left(\tau_{ij}\right)\right)\frac{\alpha\left(x_j^{PST}\right)(1-\beta)+\beta}{\alpha\left(x_j^{PST}\right)}. \tag{A.10}$$

As in case 2 above, provided that $\alpha(x)$ is sufficiently insensitive to x, the likelihood that a transaction occurs on cash in advance terms as opposed to post shipment terms is decreasing in the institutional quality of the importing country (γ_j) regardless of the relative size of $\mu_X\left(\tau_{ij}\right)$ and μ_B. Furthermore, as in case 3 above, this result extends to the empirically plausible case in which $\alpha(x)$ weakly decreases in x, given that x_j^{PST} is necessarily increasing in γ_j in that case (see equation (A.8)).

It is also clear from (A.9) that, as long as $\alpha(x)$ is sufficiently insensitive to x, the results in Proposition 2 continue to hold and the likelihood that a transaction occurs on cash in advance terms as opposed to post shipment terms is increasing in the distance between the importing and exporting countries (τ_{ij}), while the

[1] The case in which $\alpha\left(x_j^{PST}\right)$ decreases in x_j^{PST} corresponds to the case in which larger firms tend to operate at a relatively less elastic segment of their demand curves and are thus able to charge higher markups. For recent evidence, see Dhyne, Emmanuel, Amil Petrin and Frédèric Warzynski (2012), "Prices, Markups and Productivity at the Firm-Product Level," unpublished manuscript. Available at http://www.gredeg.cnrs.fr/Documents/2013/Dhyne,_Petrin_e_Warzynski_2012.pdf

negative effect of weak importer institutions on the expected relative profitability of transactions that occur on post shipment terms is alleviated by proximity between markets. The case in which the revenue function is isoelastic will satisfy this condition. It can also be shown that in the linear demand case, $p = a - bx$, the results in Proposition 2 are unaltered. To see this, note that plugging (A.8) into the above inequality (A.10), leads to:

$$\gamma_i + (1 - \gamma_i)\,\delta_X > \frac{\left(1 + \rho_j\right)\tau_{ij}}{R'\left(x_j^{PST}, \theta\right)}. \tag{A.11}$$

In the linear demand case,

$$R'(x) = a - 2bx,$$

and thus the inequality becomes

$$\gamma_i + (1 - \gamma_i)\,\delta_X > \frac{\left(1 + \rho_j\right)\tau_{ij}}{a - 2bx_j^{PST}}.$$

Furthermore, in the linear case (A.8) reduces to

$$x_j^{PST} = \frac{(1-\beta) + \beta a}{\beta b} - \frac{(1 + \rho_i)\,\tau_{ij}}{\beta b\left(\gamma_j + \left(1 - \gamma_j\right)\mu_X(\tau_{ij})\right)\left(\gamma_i + (1 - \gamma_i)\,\mu_B\right)},$$

and thus (A.11) reduces to

$$\left(\gamma_i + (1 - \gamma_i)\,\delta_X\right)\left(\frac{2}{\beta\left(\gamma_j + \left(1 - \gamma_j\right)\mu_X(\tau_{ij})\right)\left(\gamma_i + (1 - \gamma_i)\,\mu_B\right)} - \frac{a\beta + 2(1-\beta)}{\beta\left(1 + \rho_j\right)\tau_{ij}}\right) > 1.$$

This inequality is less likely to hold when γ_j is low or τ_{ij} is high, and the negative effect of γ_j on the left-hand-side term is more pronounced the higher is τ_{ij}. In other words, the results in Proposition 2 apply in this linear case, and the negative effect of weak importer institutions on the expected relative profitability of transactions that occur on post shipment terms is alleviated by proximity between markets.

A.3 Constraints on the Use of Prices to Transfer Surplus

As mentioned in the main text, some researchers (see, for example, Klapper, Laeven, and Rajan (2012)) have suggested that financing terms might be affected by the relative bargaining power of the two transacting agents for reasons orthogonal to relative financing costs. There does not appear to be any formal model of this phenomenon. The general premise is that there are situations in which price setting can only imperfectly transfer surplus between parties and that the choice of financing terms might constitute an alternative, though second-best, way to transfer surplus. For instance, restrictions on price discrimination might forbid sellers from charging lower prices to large and powerful buyers than to small and weak buyers, but perhaps sellers can achieve higher surplus extraction in the latter case by demanding prepayment, while extending credit to the larger and more powerful buyers. Empirically, there is little evidence that this alternative bargaining power channel is operative in the data analyzed in the paper. As indicated in the text, buyers who place larger orders or who are based in more concentrated markets are not more likely to transact on post shipment terms.

For completeness, it is nevertheless informative to outline an extremely simple variant of the model that introduces a constraint on the ability of the parties to transfer surplus using prices. This extension focuses on the case of exogenous financing costs, and it confirms that powerful buyers are less likely to be asked to pay in advance than weak buyers and that the other comparative statics obtained in the model continue to hold.

In order to limit the role of prices in redistributing surplus, one can introduce the constraint that the exporter and importer receive exogenously given shares ϕ and $1-\phi$ of sales revenue. With that assumption, an exporter expects a profit level equal to

$$\left(\gamma_i + (1-\gamma_i)\,\delta_X\right)\phi R\left(x_j^{CIA},\theta\right) - \tau x_j^{CIA}$$

in a cash in advance transaction, and equal to

$$\frac{\left(\gamma_j + \left(1-\gamma_j\right)\mu_X\left(\tau_{ij}\right)\right)\phi R\left(x_j^{PST},\theta\right)}{1+r_i} - \tau x_j^{PST},$$

with post shipment terms. It is then the case that if the exporter has relatively high bargaining power in the sense that it can impose its preferred financing mode and volume of trade x_j^{PST}, the exporter will choose cash in advance terms whenever

$$\left(\gamma_i + (1-\gamma_i)\,\delta_X\right) > \frac{\left(\gamma_j + \left(1-\gamma_j\right)\mu_X\left(\tau_{ij}\right)\right)}{1+r_i}. \tag{A.12}$$

The importer expects a profit equal to

$$\frac{\left(\gamma_i + (1-\gamma_i)\,\delta_X\right)(1-\phi)\,R\left(x_j^{CIA},\theta\right)}{1+r_j} - \tau x_j^{CIA}$$

when transacting on cash in advance terms, and equal to

$$\left(\gamma_j + \left(1-\gamma_j\right)\mu_X\left(\tau_{ij}\right)\right)(1-\phi)\,R\left(x_j^{PST},\theta\right) - \tau x_j^{PST},$$

when transacting on post shipment terms. It then follows that if the importer has relatively high bargaining power in the sense that it can impose its preferred financing mode and volume of trade x_j^{CIA}, the importer will choose a cash in advance whenever

$$\frac{\left(\gamma_i + (1-\gamma_i)\,\delta_X\right)}{1+r_j} > \left(\gamma_j + \left(1-\gamma_j\right)\mu_X\left(\tau_{ij}\right)\right). \tag{A.13}$$

Comparing inequalities (A.12) and (A.13) reveals that, regardless of the relative bargaining power of the parties, a cash in advance transaction is relatively more attractive than a post shipment transaction whenever γ_j is lower and whenever trade costs are higher. Furthermore, as in Proposition 2, the negative effect of weak importer institutions on the expected relative profitability of transactions that occur on post shipment terms is alleviated by proximity between markets.

The main difference in this extension relative to the model in the paper is that if either r_i or r_j is sufficiently high, it is possible that the parties might prefer different modes of financing. Typically, the exporter has a higher preference for cash in advance terms than for the post shipment terms, and the converse is true for the importer. However, for certain parameter values, the exporter prefers cash in advance terms, while the importer prefers post shipment terms. In the absence of other means to transfer utility, the actual mode of financing might thus respond to the relative bargaining power of the agents.

B Distance as Time

This section considers the possibility that distance affects the profitability of a transaction by increasing the time lag between the shipment and receipt of goods. More specifically, suppose that goods arrive at the importing country at time $t = T$, where T is an increasing function of distance, as opposed to at $t = 1$. A longer time lag increases the working capital needs associated with a transaction and increases the probability of contract default. More specifically, the probability a contract is enforced in each period is *i.i.d.* and equal to γ_j in country j, so that the probability that a contract is still binding at $t = T$ is equal to $\left(\gamma_j\right)^T$. For simplicity, this section also rules out the possibility of misbehavior on the part of the exporter by assuming $\delta_X = 1$, so that letters of credit are a dominated financing mode.

Cash in advance terms are preferred to post shipment terms if and only if

$$\frac{\left(\left(\gamma_i\right)^T + \left(1 - \left(\gamma_i\right)^T\right)\delta_X\right)}{\left(1 + r_j\right)^T} > \frac{\left(\left(\gamma_j\right)^T + \left(1 - \left(\gamma_j\right)^T\right)\mu_X\left(\tau_{ij}\right)\right)}{\left(1 + r_i\right)^T}$$

in the exogenous financing costs case, and if and only if

$$\left(\gamma_i\right)^T + \left(1 - \left(\gamma_i\right)^T\right)\delta_X > \left(\frac{1 + \rho_j}{1 + \rho_i}\right)^T \frac{\left(\gamma_j\right)^T + \left(1 - \left(\gamma_j\right)^T\right)\mu_X\left(\tau_{ij}\right)}{\left(\gamma_j\right)^T + \left(1 - \left(\gamma_j\right)^T\right)\mu_B} \tag{B.1}$$

in the endogenous financing costs case.

In the above expressions, the effect of distance is a combination of the negative effect of τ_{ij} on $\mu_X\left(\tau_{ij}\right)$, as in the main text, and the effect working through the time lag T, which is assumed to increase in distance. Without having to specify the exact dependence of T on distance, it is clear that the overall dependence of the relative profitability of cash in advance terms on distance is complex in this environment.

For instance, consider the case in which $\delta_X = 1$, so that (B.1) reduces to

$$\left(\frac{1 + \rho_i}{1 + \rho_j}\right)^T > \frac{\left(\gamma_j\right)^T + \left(1 - \left(\gamma_j\right)^T\right)\mu_X\left(\tau_{ij}\right)}{\left(\gamma_j\right)^T + \left(1 - \left(\gamma_j\right)^T\right)\mu_B}.$$

The right-hand-side of this inequality falls with distance both on account of the term $\mu_X\left(\tau_{ij}\right)$ as in the main text, but also (provided that $\mu_B > \mu_X\left(\tau_{ij}\right)$) on account of the new channel explored here. In the plausible case in which $\rho_j > \rho_i$, the left-hand-side of this inequality also is decreasing in T, reflecting the intuition that longer working capital requirements create incentives to obtain capital in the environment in which the technological efficiency of the banking sector is higher. The overall effect of distance on the inequality thus depends on subtle features of a transaction.

This alternative approach to incorporating the effects of distance does not cleanly generate Proposition 2 because the cross-partial derivative of $\left(\gamma_j\right)^T$ with respect to γ_j and T is only positive for large enough γ_j.

In sum, although there are reasons to believe that distance might have effects through channels different from the one explored in the main text, the patterns unveiled in the empirical analysis of the paper cannot be easily explained in a variant of the model in which distance only increases the time between when goods are shipped by the exporter and when the importer receives them.

C Asymmetric Learning in the Dynamic Model of Trade Finance

The dynamic version of the model in the main text makes the assumption that the exporter and the importer's bank update their beliefs on the importer's type in a symmetric fashion. The trade credit literature has argued that, in some cases, sellers might have a comparative advantage, relative to financial intermediaries, in learning about the trustworthiness of their buyers.

One way to incorporate this feature into the model is to assume that the importer's bank has a worse understanding of the industry than the exporter and, in particular, believes that the size of liquidity shocks is always large enough to induce all agents, not just myopic ones, to default. In this case, a bank believes that the importer defaults with a probability equal to χ, the average default rate across importers in the country, and it does not update this expected default rate based on the importer's past history of defaults. As a result, the financial constraint faced by the importer is not relaxed over time, and the profitability of cash in advance terms for the exporter does not increase with the length of the relationship between the exporter and the importer, conditional on no defaults. In particular, the profits associated with a cash in advance transaction in a relationship of length T with no prior defaults is given by

$$\pi_{ij}^{CIA}(T) = \max_{x_j} \left\{ \frac{\left(\gamma_j + \left(1-\gamma_j\right)\left(\chi + (1-\chi)\left(1-\lambda+\lambda\mu_B\right)\right)\right) R\left(x_j,\theta\right)}{1+\rho_j} - \tau_{ij}x_j - f_{ij} \right\}. \tag{C.1}$$

regardless of T. Profits under post shipment terms would however continue to vary with T because the exporter is assumed to update his belief on the importer's type by observing his history of defaults. More specifically, with our maintained assumption that the exporter is not credit constrained, and thus $r_i = \rho$, the profits associated with a post shipment term transaction in a relationship of length T with no prior defaults are given by

$$\pi_{ij}^{PST}(T) = \max_{x_j} \left\{ \frac{\left[\gamma_j + \left(1-\gamma_j\right)\left(\widehat{\chi}(T) + \left(1-\widehat{\chi}(T)\right)\left(1-\lambda+\lambda\mu_X\left(\tau_{ij}\right)\right)\right)\right] R\left(x_j,\theta\right)}{1+\rho_i} - \tau_{ij}x_j - f_{ij} \right\}, \tag{C.2}$$

just as in the main text.

Comparing equations (C.2) and (C.1), reveals that:

Proposition C.1 *The likelihood that a transaction with a particular importer occurs on post shipment terms increases with the number of past interactions between the exporter and that particular importer. Furthermore, in importing countries where contractual enforcement is close to perfect, that is when $\gamma_j \to 1$, the effect of past interactions on the relative profitability of transactions that occur on post shipment terms vanishes.*

This result is a slightly stronger version of Proposition 4 in the main text. The first statement does not require conditions on the relative size of μ_B and $\mu_X(\tau_{ij})$. Because $\widehat{\chi}'(T) > 0$ and $\widehat{\chi}(0) = \chi$, this variant of the model also delivers a higher likelihood of the use of post shipment terms than that variant in the paper. Because the exporter is assumed to have a comparative advantage, relative to financial intermediaries, in learning about the trustworthiness of its buyers, the exporter is a more natural source of financing for transactions.

D Equilibrium Prices and the Model of Trade Finance

This section discusses the implications of the model for the prices that are charged in transactions that are financed in different ways and provides empirical evidence of these implications. The model predicts that,

holding constant the volume of sales, prices should be set higher in post shipment term transactions than in cash in advance transactions, especially for transactions with customers in countries with weak contractual enforcement. Analysis of price data for the transactions studied in the main text yield results consistent with these predictions.

D.1 Prices in the Theory

It is informative to begin by comparing the price that the exporter would charge to the importer under different financing modes while holding all the model parameters fixed.[2] The data that are analyzing correspond to the particular transaction price that the exporter and the importer agree to in the initial contract at $t = 0$.

For the case of cash in advance terms, the exporter charges an ex-ante amount equal to P_0^{CIA}, pinned down by

$$\left(1+\rho_j\right) P_{0,ij}^{CIA} \leq \left(\gamma_j + \left(1-\gamma_j\right)\mu_B\right)\left(\gamma_i + \left(1-\gamma_i\right)\delta_X\right) R\left(x_j, \theta\right),$$

so the implied price (revenue per unit) is

$$p_j^{CIA} = \frac{P_0^{CIA}}{x_j^{CIA}} = \frac{\left(\gamma_j + \left(1-\gamma_j\right)\mu_B\right)\left(\gamma_i + \left(1-\gamma_i\right)\delta_X\right)}{1+\rho_j} \frac{R\left(x_j^{CIA}, \theta\right)}{x_j^{CIA}}. \tag{D.1}$$

In the case of post shipment terms transactions, the price agreed at $t = 0$ is the one that the exporter expects to obtain if the contract is enforced in the importing country. In that case, the exporter demands a payment equal to the total sales receipts obtained at $t = 1$, implying a price of

$$p_j^{PST} = \frac{R\left(x_j^{PST}, \theta\right)}{x_j^{PST}}. \tag{D.2}$$

A comparison of the two prices in (D.1) and (D.2) is not completely straightforward because revenues are generally not equal across financing modes even for common parameter values. Notice, however, that holding constant the volume of sales x_j, it is clear that prices are higher in post shipment transactions than in cash in advance transactions. There are three reasons for this. First, because of the potential for exporter misbehavior, the expected quality of goods is lower in cash in advance transactions (i.e., $\delta_X < 1$). Second, limited commitment problems increase the probability that actual payments are only a fraction of promised payments in post shipment transactions. A third factor reducing the price of cash in advance transactions relative to post shipment term transactions relates to the higher cost of funds faced by the importer in cash in advance transactions (i.e., $\rho_j > 0$), which again limits the extent to which the exporter can extract surplus from the importer.[3]

Notice also that, again holding constant the value of sales, the difference in prices $p_j^{PST} - p_j^{CIA}$ is predicted to be lower when contractual enforcement is stronger in the importer's country. Furthermore, larger transactions should be associated with lower prices.

[2] This raises the question of why, in light of the model, one might observe both cash in advance and post shipment terms transactions given the same parameter values. It would be straightforward to add a source of idiosyncratic preferences for particular financing modes into our model so as to generate the observed heterogeneity in the data.

[3] It may seem surprising that the cost of funds faced by the exporter is not a relevant factor in the comparison of prices. This parameter would be central to a comparison of prices that left the exporter indifferent between financing modes. Yet, because the exporter is assumed to make take-it-or-leave-it-offers to importers, its indifference between terms is irrelevant in the computation of prices. In variants of the model with a more balanced distribution of bargaining power, the wedge between the two prices would also be affected by the cost of funds of the exporter. Although a strong one, the assumption of full bargaining power on the part of the exporter allows the focus to be on variation in price gaps stemming from importer characteristics, which maps to variation observed in the data that are analyzed.

Finally, it is informative to consider prices in letter of credit transactions. These are determined in a manner similar to prices in cash in advance transactions. Following analogous steps to those used to derive equation (D.1) reveals

$$p_j^{LC} = \frac{\left(\gamma_j + \left(1 - \gamma_j\right)\mu_B\right)}{\psi_j\left(1 + \rho_j\right)} \frac{R\left(x_j^{LC}, \theta\right)}{x_j^{LC}}.$$

Because $\psi_j > 1$, prices in letter of credit transactions should be lower than prices in post shipment term transactions, but the relative magnitude of prices in letter of credit transactions and cash in advance transactions is ambiguous and depends on the relative size of the processing fees, as captured by ψ_j, and the scope for misbehavior on the part of the exporter, as reflected by δ_X.

D.2 Prices in the Data

The theory generates several predictions about prices. Specifically, the prices charged for goods sold on post shipment terms should be higher than the prices charged on cash in advance terms. The differences in these prices should be larger in transactions in which the importer is located in a country with weak contractual enforcement, reflecting the higher probability of default in open account transactions with such importers. In addition, the prices of goods sold on letter of credit terms should be similar to those of goods sold on cash in advance terms. Finally, all prices should be appear to be lower in larger transactions.

Appendix Table 1 presents the results of tests of these hypotheses. These tests do not intend to pinpoint any kind of causality; they aim to describe average prices for sales that occur on different terms, conditional on the value of sales, and to exhibit the correlation between prices and the size of a transaction. The dependent variable is the actual price paid per pound, and each specification includes a fixed effect for each product/country/incoterm/year combination.[4] Products that are classified as "Other" products in the data are dropped from the sample for this analysis because they include a wide variety of items. The specification presented in the first column includes a dummy for transactions that occur on letter of credit terms and a dummy for transactions that occur on post shipment terms so that the coefficients on these dummies reflect average prices relative to the prices charged for transactions on cash in advance terms. The coefficient on the post shipment dummy is positive and marginally significant, indicating that prices changed in these transactions are \$0.0293 higher than prices charged in cash in advance transactions. The second column adds a control for the log of the value of sales. The coefficient on this variable is negative and significant, indicating that larger transactions occur at lower prices. In this specification, the coefficient on the post shipment dummy is larger in magnitude and has a higher degree of statistical significance than in the previous specification.

The third and fourth columns display specifications that are similar to those in the first two columns, but these also include the interaction of the letter of credit and post shipment dummies with a proxy for the strength of contractual enforcement in the importer's country, namely the common law dummy. The positive and significant coefficient on the post shipment dummy in the fourth column implies that prices charged in post shipment term transactions are higher than those charged in cash in advance terms for importers in civil law countries, and the negative and significant coefficient on the interaction of the post shipment dummy and the common law dummy indicates that this price difference is smaller for importers in common law countries. In fact the magnitudes of these coefficients are similar, which suggests that the difference in these prices is negligible in common law countries. This finding is consistent with the idea that

[4] The data contain information about which terms are used in each transaction. The results of the specifications presented are little changed if product/country/incoterm/year/month fixed effects are used, indicating that the results do not reflect patterns in monthly price fluctuations. Incoterms terms refer to the international standard trade terms that govern which trading party is responsible for which aspects of transport.

prices of transactions that occur on open account terms reflect the higher risk of importer default in weak institutional environments. The coefficients on the letter of credit dummy and interactions including it tend not to be statistically significant throughout the table. Thus, the results are consistent with the theoretical predictions.[5]

E Supplemental Results

This section briefly discusses supplemental results that are referred to in the main text. Figures and tables are described under the headings of the sections of the paper that mention them.

E.1 The Enforcement of Contracts, Distance, and Financing Terms

The specifications used to generate the results presented in Table 4 include the log of distance, and Appendix Table 2 presents the estimated coefficients for this variable. These coefficients are positive and significant in explaining the choice between cash in advance and post shipment terms in 7 of 8 specifications, and they are positive and significant in explaining the choice between letter of credit and post shipment terms in 6 of 8 specifications.

The model suggests a role for the technological efficiency of the banking sector in the importer's country, which is denoted by ρ_j and captures factors that are not related to contractual enforcement and affect funding costs, but the specifications presented in Table 4 do not include controls for this parameter. Appendix Table 3 displays the results of including a monthly measure of interbank interest rates in the specifications that appear in Table 4, and Appendix Table 4 displays the results of including a monthly measure of Central Bank discount rates in those specifications. The results are robust to including these additional controls. It is worth noting that each of the measures of interest rates have shortcomings. Interbank rates are rates that banks charge to one another, and these can be problematic because they partly reflect the counterparty risks of transacting with financial institutions. Central Bank discount rates are monetary policy tools, and their level therefore reflects macroeconomic conditions that go beyond an exporter's costs of funds.

The results in Table 4 could be misleading if the amount of trade that takes place between the exporter and importer or expected shipment times affect financing terms and if measures of institutional quality are correlated with them. Appendix Table 5 present the results of running the specifications in Table 4 while also including controls for the log of the value of sales, the log of the volume of sales, the log of the sum of past sales values from the exporter to the importer, and expected shipping times, which can be measured using the data provided by the exporter. The results are little changed by including these additional controls.

Contractual enforcement might also be associated with the concentration of importers, and buyers might have more bargaining power in concentrated markets in a manner that affects financing terms. Appendix Table 6 displays the results of tests like those in Table 4 that include the Herfindahl index of sales to each country in each year. Conditioning on this index does not materially affect the results.

Figure 8 illustrates findings implied by multinomial logit specifications that capture the effect of the strength of contractual enforcement interacted with distance on the choice of financing terms. Coefficients on interaction terms in multinomial logit specifications are hard to interpret. It is also possible to consider the impact of the interaction of measures of contractual enforcement and distance in linear probability models, which are not subject to the same interpretation challenges. Appendix Table 7 presents the results of such

[5] While it is tempting to use prices to calculate implied interest rates associated with different financing terms, the data do include information about when payments actually occur, and the details of this timing are ambiguous for several financing terms. Rough estimates suggest that credit supplied by the exporter carries a high implied annualized interest rate, which is consistent with estimates of the cost of trade credit in papers like Ng, Smith, and Smith (1999).

tests. The use of post shipment terms appears to increase with the level of contractual enforcement for more remote customers but not for nearby customers. These findings are consistent with the patterns in Figure 8.

E.2 Relationships

Table 5 of the paper presents tests of the predictions that importers that have traded more extensively with the exporter in the past should be more likely to transact on post shipment terms and less likely to transact on cash in advance terms and that the strength of contractual enforcement should reduce the impact of the development of an extensive trading relationship.

The linear probability models presented in Table 5 have the advantages of being able to accommodate a large number of fixed effects and of producing estimated coefficients on interaction terms are easier to interpret than estimates produced by multinomial logit specifications. However, these models have some of their own shortcomings, such as the fact that probabilities are not bounded between zero and one. Appendix Figure 1 illustrates results implied by running the specifications in columns 2, 4, and 6 of Table 5 as a multinomial logit specification. Panel A shows the estimated probability of using cash in advance terms in common and civil law countries for different value of the log of the count of the number of prior transactions between the exporter and an importer. The use of prepayment terms is more likely in civil law than common law countries, and prepayment terms appear to be used less frequently as the importer transacts more with the exporter. The decline in the use of prepayment terms as a relationship develops is particularly pronounced for importers based in civil law countries. Panel B depicts estimate probabilities of the use of post shipment terms, and the patterns complement those in Panel A. Post shipment terms are more prevalent when importers are based in common law countries, and their use increases as a relationship develops between the exporter and importer, especially when importers are based in civil law countries. The standard error bars indicate that estimates of the use of prepayment terms for importers in common law countries that have not transacted much with the exporter are imprecise. These patterns are consistent with the results in Table 5 of the paper.

The dynamic version of the model that is used to motivate the analysis in Table 5 does not account for transactions that occur on letter of credit terms. Appendix Table 8 presents the results of tests that remove letter of credit transactions from the sample and run the specifications in that appear in columns 5 and 6 of Table 5 of the revised paper. These results are similar to and slightly stronger statistically than those presented in the paper.

The tests in Table 5 use a dummy equal to one for common law countries to capture the strength of contractual enforcement. Appendix Table 9 presents the specifications similar to the one in column 5 of Table 5, except each of the measures of contractual enforcement used in Table 4 are considered. As predicted by the theory, the effect of the development of a trading relationship increases the use of post shipment terms, and this effect is, in statistical and economic terms, less important in countries with strong contractual enforcement for 5 of the 8 measures.

E.3 The Crisis

Appendix Figure 2 illustrates results implied by running the specifications in the columns 2, 4, and 6 of Table 7 as a multinomial logit specification. Panel A indicates that the estimated probability that payment terms are prepayment terms is slightly higher for new customers than for other customers outside of the crisis period. The estimated probability that payment terms are prepayment terms increase slightly for new customers during the crisis, but it is virtually unchanged for other customers. Panel B shows that the use of post shipment terms is lower for new customers than other customers outside of the crisis period, and

that the differential use of these terms by the two groups of customers becomes bigger during the crisis. The estimated changes in the terms used by new customers during the crisis are not huge, but these patterns are consistent with the results that appear in Table 7.

Table 7 of the paper considers how the treatment of new customers changes during the crisis, and it is possible to analyze whether these changes vary with the level of contractual enforcement. Appendix Table 10 displays the results of running the tests that appear in the even columns of Table 7 on two subsets of the data, observations of importers based in common law countries and observations of importers based in civil law countries. The coefficients on the interaction of the dummy equal to one for new customers interacted with the dummy equal to one during the crisis are only significant for transactions with importers based in civil law countries. These findings imply that the increase in the use of cash in advance terms and the decrease in the use of post shipment terms for transactions involving new customers during the crisis is focused in countries with weak contractual enforcement. It is easy to demonstrate that this result is implied by our theory. In particular, for new customers $T = 0$, and the relative profitability of post shipment terms and cash in advance depends on the ratio

$$\Omega = \frac{\gamma_j + \left(1 - \gamma_j\right)\left(\chi + (1 - \chi)\left(1 - \lambda + \lambda\mu_X\left(\tau_{ij}\right)\right)\right)}{\gamma_j + \left(1 - \gamma_j\right)\left(\chi + (1 - \chi)\left(1 - \lambda + \lambda\mu_B\right)\right)}.$$

Straightforward differentiation delivers

$$\frac{\partial\Omega}{\partial\lambda} = \frac{-\left(1 - \gamma_j\right)(1 - \chi)\left(\mu_B - \mu_X\left(\tau_{ij}\right)\right)}{\left[\gamma_j + \left(1 - \gamma_j\right)\left(\chi + (1 - \chi)\left(1 - \lambda + \lambda\mu_B\right)\right)\right]^2},$$

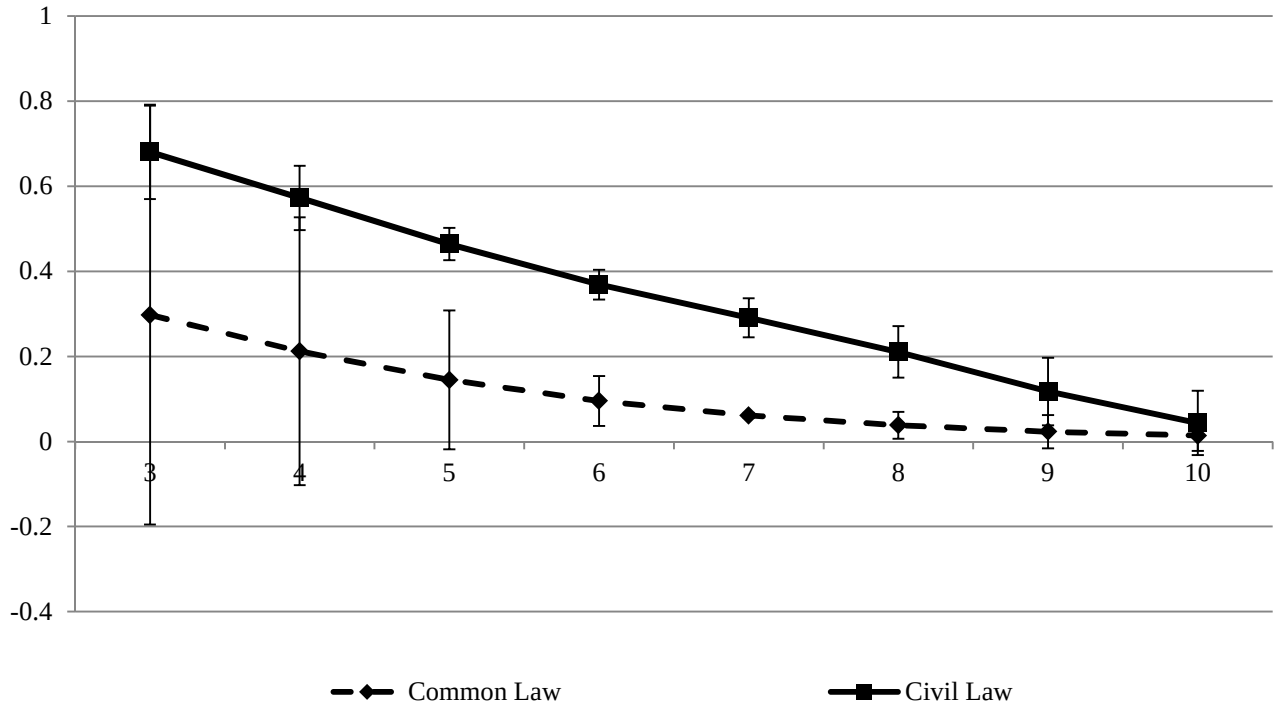
from which it follows that $\frac{\partial^2\Omega}{\partial\lambda\partial\gamma_j} > 0$, and thus the lower is γ_j, the bigger is the effect of a higher λ (a crisis) on the relative appeal of extending post shipment terms to new customers.

Appendix Figure 1

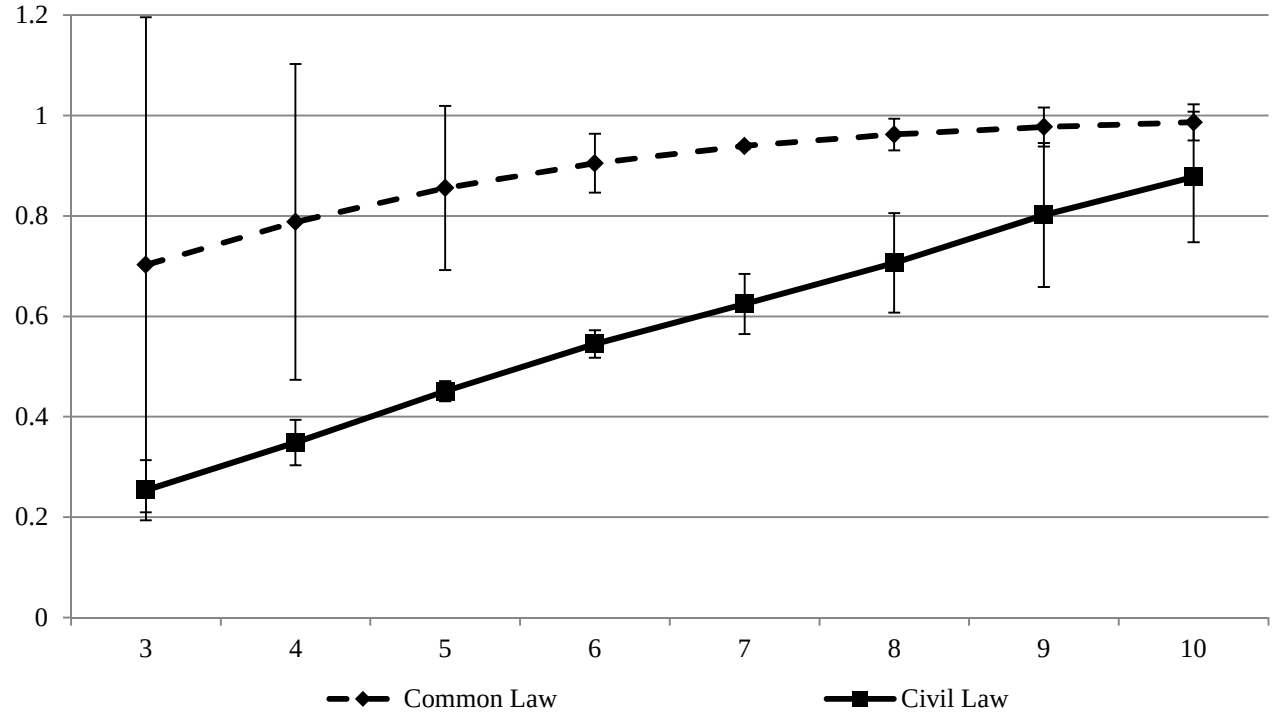
Effects of Relationships on Financing Terms: Multinomial Logit Estimates

Notes: This figure displays the estimated probabilities of the use of alternative payment terms as a function of the log of the count of prior transactions for customers based in common and civil law countries. Panel A illustrates estimated probabilities that terms are cash in advance terms, and Panel B illustrates estimated probabilities that terms are post shipment terms. The estimates are obtained by running the specification that appears in the even columns of Table 6 as a multinomial logit specification. Error bars illustrate 95% confidence intervals computed on the basis of heteroskedasticity-consistent standard errors that correct for clustering at the customer level.

Panel A: Estimated Probability of Cash in Advance Terms



Panel B: Estimated Probability of Post Shipment Terms

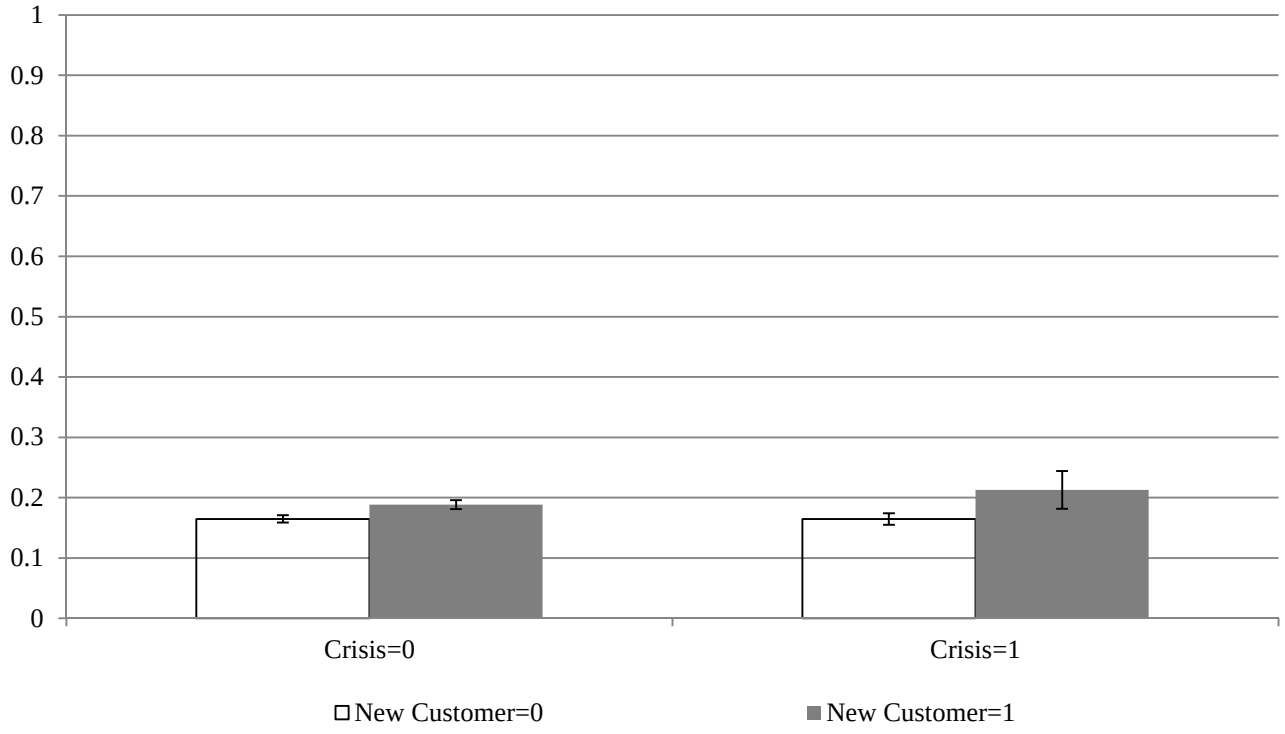


Appendix Figure 2

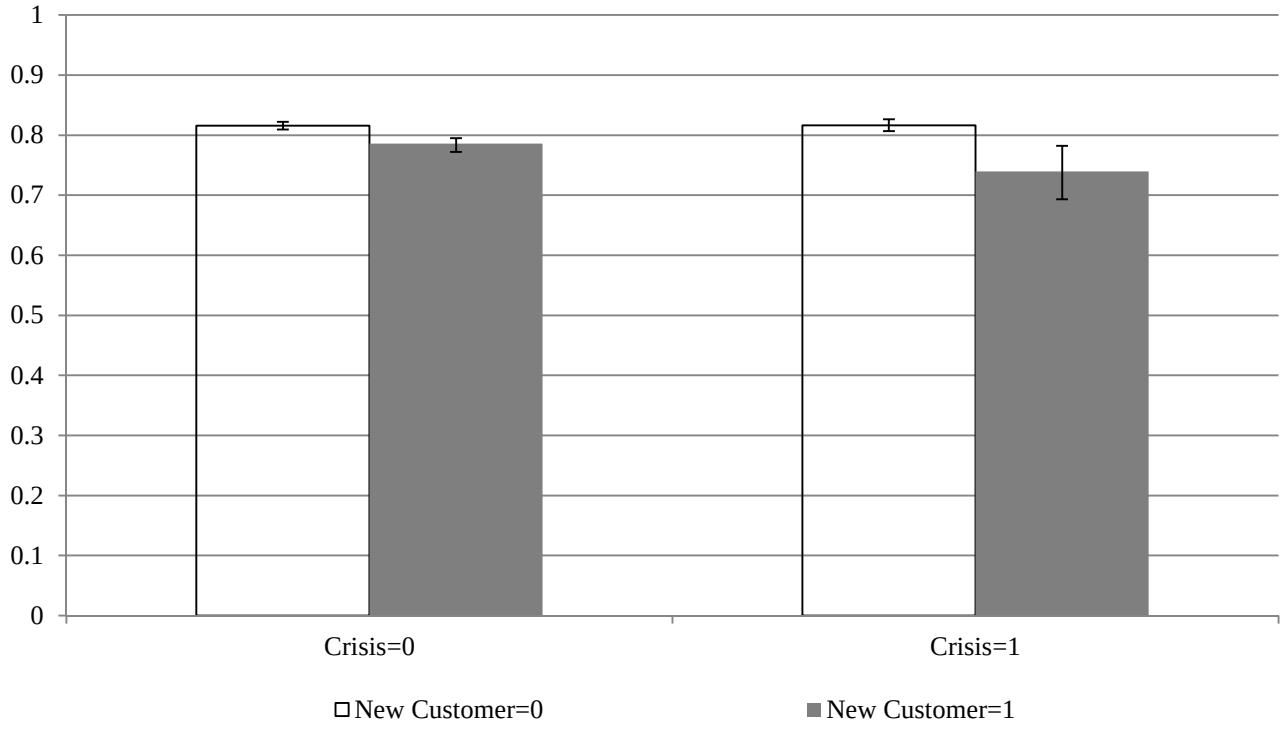
Financing Terms for New Customers: Multinomial Logit Estimates

Notes: This figure displays the estimated probabilities of the use of alternative payment terms as a function of whether a customer is a new customer and whether the customer is based in a common or civil law country. Panel A illustrates estimated probabilities that terms are cash in advance terms, and Panel B illustrates estimated probabilities that terms are post shipment terms. The estimates are obtained by running the specifications that appear in the even columns of Table 7 as a multinomial logit specification. Error bars illustrate 95% confidence intervals computed on the basis of heteroskedasticity-consistent standard errors that correct for clustering at the customer level.

Panel A: Estimated Probability of Cash in Advance Terms



Panel B: Estimated Probability of Post Shipment Terms



Appendix Table 1

Financing Terms and Prices

Notes: The dependent variable is the price charged per pound of goods sold. Letter of Credit Dummy is a dummy equal to one for transactions that occur on letter of credit terms, and Post Shipment Dummy is a dummy for transactions that occur on post shipment terms. Common Law Dummy is a dummy equal to one for common law countries. Log of Sales Value measures the value of sales in dollars. Each specification is an OLS specification that includes a fixed effect for each product/country/incoterm/year combination. Heteroskedasticity-consistent standard errors that correct for clustering at the product/country/incoterm/year level appear in parentheses. The "other" category of products is omitted from the data. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Dependent Variable:	Price per Pound			
	(1)	(2)	(3)	(4)
Letter of Credit Dummy	-0.0008	0.0386	-0.0007	0.0388
	(0.0213)	-0.0241	(0.0238)	(0.0272)
Letter of Credit Dummy * Common Law Dummy			-0.0388	-0.0430
			(0.0523)	(0.0478)
Post Shipment Dummy	0.0293	0.0570	0.0467	0.0767
	(0.0175)*	(0.0188)***	(0.0212)**	(0.0226)***
Post Shipment Dummy * Common Law Dummy			-0.0825	-0.0935
			(0.0337)**	(0.0328)***
Log of Sales Value		-0.1534		-0.1537
		(0.0376)***		(0.0376)***
Product/Country/Incoterms/Year Fixed Effects?	Y	Y	Y	Y
No. of Obs.	441,291	441,291	439,716	439,716
R-Squared	0.5265	0.5415	0.5261	0.5412

Appendix Table 2

Financing Terms and Enforcement of Contacts: Distance Coefficients

Notes: This table presents the coefficients on log distance that are estimated in the specifications that appear in Table 4 of the paper. The variables in the first column refer to the measure of contractual enforcement used in the specification.

Type of Financing Terms:	Cash in Advance vs. Post Shipment	Letter of Credit vs. Post Shipment	Cash in Advance vs. Letter of Credit
Common Law Dummy	1.5575	1.1606	0.3969
	(0.5318)***	(0.8842)	(0.9858)
Contract Viability	1.2625	0.5247	0.7378
	(0.5927)**	(0.9842)	(1.0784)
Payment Delay	1.8342	1.0979	0.7363
	(0.5980)***	(0.5840)*	(0.6140)
Enforceability of Contracts	1.3444	1.4976	-0.1532
	(0.7502)*	(0.5540)***	(0.8082)
Confidence in Legal System	2.1235	0.6077	1.5158
	(0.6968)***	(0.2920)**	(0.6933)**
Duration of Legal Procedure	1.7688	2.0885	-0.3197
	(0.6269)***	(0.5316)***	(0.6564)
Private Credit	0.5171	1.3552	-0.8381
	(0.5571)	(0.3875)***	(0.5571)
Stock Market Capitalization	1.6421	1.8864	-0.2443
	(0.7321)**	(0.5020)***	(0.8638)

Appendix Table 3

Financing Terms and Enforcement of Contacts: Controlling for Interbank Interest Rates

Notes: The specifications presented in this table are the same as those in Table 4 of the paper, except they also include a control for interbank interest rates. Interbank interest rates are drawn from the Global Financial Data database.

Type of Financing Terms:	Cash in Advance vs. Post Shipment	Letter of Credit vs. Post Shipment	Cash in Advance vs. Letter of Credit
Common Law Dummy	-3.3862	-3.2950	-0.0912
	(0.5188)***	(0.9403)***	(1.0946)
Contract Viability	-2.4570	-1.1119	-1.3452
	(0.5847)***	(0.5531)**	(0.5460)**
Payment Delay	-1.1335	-1.7151	0.5816
	(0.7291)	(0.8403)**	(0.8103)
Enforceability of Contracts	-0.7398	-0.6867	-0.0532
	(0.3072)**	(0.2732)**	(0.3887)
Confidence in Legal System	-1.6224	-0.7156	-0.9068
	(0.4898)***	(0.3168)**	(0.4023)**
Duration of Legal Procedure	-0.0003	0.0018	-0.0021
	(0.0024)	(0.0010)*	(0.0025)
Private Credit	-2.0665	-0.5396	-1.5270
	(0.7190)***	(0.4065)	(0.5772)***
Stock Market Capitalization	-1.9715	-2.1684	0.1969
	(0.6048)***	(0.6382)***	(0.9037)

Appendix Table 4

Financing Terms and Enforcement of Contacts: Controlling for Central Bank Discount Rates

Notes: The specifications presented in this table are the same as those in Table 4 of the paper, except they also include a control for central bank discount rates. Central bank discount rates are drawn from the Global Financial Data database.

Type of Financing Terms:	Cash in Advance vs. Post Shipment	Letter of Credit vs. Post Shipment	Cash in Advance vs. Letter of Credit
Common Law Dummy	-3.3360	-3.5202	0.1842
	(0.4721)***	(0.9768)***	(1.1632)
Contract Viability	-3.2790	-1.4703	-1.8087
	(0.6462)***	(0.7726)*	(0.6745)***
Payment Delay	-1.7270	-1.9206	0.1936
	(0.8158)**	(0.9944)*	(0.8166)
Enforceability of Contracts	-1.1181	-0.9726	-0.1454
	(0.3651)***	(0.3909)**	(0.4916)
Confidence in Legal System	-1.2186	-0.4486	-0.7701
	(0.4297)***	(0.3158)	(0.3778)**
Duration of Legal Procedure	-0.0010	0.0009	-0.0018
	(0.0029)	(0.0011)	(0.0030)
Private Credit	-2.6662	-0.3135	-2.3526
	(0.6147)***	(0.3542)	(0.6795)***
Stock Market Capitalization	-1.5018	-2.5487	1.0469
	(0.7002)**	(0.8710)**	(1.2066)

Appendix Table 5

Financing Terms and Enforcement of Contacts: Additional Controls

Notes: This table presents specifications like those presented in Table 4 of the paper, except these specifications include additional controls for the Log of Sales Value, the Log of Sales Volume, the Log of Previous Sales, and the Expected Shipping Time. Log of Sales Value and Log of Sales Volume measure the value of sales in dollars and the volume of sales in pounds. Log of Previous Sales is the log of aggregate sales to a customer location prior to a transaction. Expected Shipping Time is the difference in days between the expected date of departure of goods and the expected date of their arrival at the customer's location.

Type of Financing Terms:	Cash in Advance vs. Post Shipment	Letter of Credit vs. Post Shipment	Cash in Advance vs. Letter of Credit
Common Law Dummy	-3.3192	-2.3517	-0.9675
	(0.6936)***	(0.7410)***	(1.0645)
Contract Viability	-2.7462	-2.2177	-0.5285
	(0.4706)***	(0.8913)**	(0.8342)
Payment Delay	-1.2308	-2.1363	0.9055
	(0.5891)**	(0.8929)**	(0.8430)
Enforceability of Contracts	-0.3981	-0.4461	0.0480
	(0.3139)	(0.3335)	(0.4862)
Confidence in Legal System	-1.1622	-0.8627	-0.2995
	(0.3474)***	(0.2018)***	(0.3965)
Duration of Legal Procedure	-0.0001	0.0007	-0.0017
	(0.0021)	(0.0018)	(0.0029)
Private Credit	-2.0925	0.2400	-2.3424
	(0.7037)***	(0.5467)	(0.7718)***
Stock Market Capitalization	-1.2564	-0.7830	-0.4734
	(0.5476)**	(0.7213)	(0.8773)

Appendix Table 6

Financing Terms and Enforcement of Contacts: Controlling for the Herfindahl Index of Sales

Notes: This table presents specifications like those presented in Table 4 of the paper, except these specifications also include the Herfindahl index of sales to each country in each year.

Type of Financing Terms:	Cash in Advance vs. Post Shipment	Letter of Credit vs. Post Shipment	Cash in Advance vs. Letter of Credit
Common Law Dummy	-3.3276	-3.0564	-0.2712
	(0.4865)***	(0.7933)***	(0.9800)
Contract Viability	-2.6625	-2.3697	-0.2928
	(0.5022)***	(0.7317)***	(0.6793)
Payment Delay	-1.4880	-2.2027	0.7147
	(0.5691)***	(0.8381)***	(0.7965)
Enforceability of Contracts	-0.6706	-0.8622	0.1916
	(0.3192)**	(0.3774)**	(0.4650)
Confidence in Legal System	-1.2830	-0.8401	-0.4429
	(0.3982)***	(0.2349)***	(0.3020)
Duration of Legal Procedure	0.0011	0.0037	-0.0026
	(0.0023)	(0.0037)**	(0.0026)
Private Credit	-2.0988	-0.3106	-1.7883
	(0.6357)***	(0.4745)	(0.6609)***
Stock Market Capitalization	-1.6827	-1.5908	-0.0919
	(0.6120)***	(0.8066)**	(0.9590)

Appendix Table 7

Financing Terms, Enforcement of Contracts, and Distance

Notes: This table displays linear probability specifications in which the dependent variable is a dummy equal to one for transactions that are conducted on post shipment terms. Common Law Dummy is a dummy equal to one for countries with a common law legal origin. Contract Viability is drawn from the International Country Risk Guide, and it measures the risk of contract modification or cancellation with higher values indicating lower risks. Payment Delay is also drawn from the International Country Risk Guide, and it measures the risk of receiving and exporting payments from a country with higher values indicating lower risks. Enforceability of Contracts comes from Knack and Keefer (1995), and it captures the degree to which contractual agreements are honored with higher values indicating higher enforcement. Confidence in Legal System is drawn from a World Bank Survey of managers on the degree to which they believe the system will uphold contracts and property rights in a business dispute, and higher values imply greater confidence. Duration of Legal Procedure is taken from Djankov et al. (2003), and it measures the total estimated duration in calendar days to pursue a claim on a bounced check. Private Credit is the ratio of private credit by deposit money banks and other financial institutions to GDP, and Stock Market Capitalization is the value of listed shares to GDP. Long Distance is a dummy equal to one for international transactions in which the capital city of the sales destination is further from Washington, DC than the mean international transaction. Each specification includes product fixed effects, and heteroskedasticity-consistent standard errors that correct for clustering at the country level appear in parentheses. ***, **, and * denote significance at the 1, 5, and 10 percent levels, respectively.

Dependent Variable:	Dummy if Post Shipment Terms							
Measure of Contractual Enforcement:	Common Law Dummy	Contract Viability	Payment Delay	Enforceability of Contracts	Confidence in Legal System	Duration of Legal Procedure	Private Credit	Stock Market Capitalization
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Contractual Enforcement	0.1195	0.1568	0.0975	-0.0002	-0.1529	0.0004	0.0461	-0.0318
	(0.0686)*	(0.1486)	(0.0849)	(0.0103)	(0.2157)	(0.0002)***	(0.0277)*	(0.0468)
Long Distance	-0.5669	-1.1610	-1.1030	-1.6381	-1.5512	-0.2428	-0.6084	-0.7347
	(0.0901)***	(0.5706)**	(0.3321)***	(0.2842)***	(0.8905)*	(0.1142)**	(0.1434)***	(0.0653)***
Contractual Enforcement *	0.4770	0.2443	0.2117	0.1911	0.2777	-0.0013	0.4144	0.3472
Long Distance	(0.0936)***	(0.1484)	(0.0974)**	(0.0361)***	(0.2152)	(0.0005)**	(0.1161)***	(0.0666)***
Log of GDP per Capita	0.0773	0.0549	0.055	0.0342	0.1974	0.1698	0.0016	0.1104
	(0.0231)***	-0.034	(0.0452)	(0.0345)	(0.0415)***	(0.0359)***	(0.0303)	(0.0363)***
Product Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
Year Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
No. of Obs.	592,812	491,737	491,737	522,825	525,560	562,460	320,085	352,529
R-Squared	0.6539	0.6469	0.6288	0.6110	0.6649	0.5845	0.3818	0.6066

Appendix Table 8

Effects of Relationships on Financing Terms: Dropping Letter of Credit Transactions

Notes: The specifications presented in this table are similar to those presented in columns 5 and 6 of Table 5, except transactions that involve letters of credit have been dropped from the sample.

Dependent Variable:	Dummy if Post Shipment Terms	
	(1)	(2)
Log of Previous Sales	0.0234	
	(0.0086)***	
Log of Previous Sales * Common Law Dummy	-0.0220	
	(0.0097)**	
Log of Number of Previous Transactions		0.0192
		(0.0066)***
Log of Number of Previous Transactions * Common Law Dummy		-0.0194
		(0.0078)**
Log of Sales Value	0.0000	0.0002
	(0.0005)	(0.0005)
Log of Sales Volume	0.0004	0.0003
	(0.0007)	(0.0007)
Log of GDP per Capita	-0.0010	0.0094
	(0.0630)	(0.0617)
Customer/Country Fixed Effects?	Y	Y
Product Fixed Effects?	Y	Y
Year Fixed Effects?	Y	Y
No. of Obs.	558,173	558,215
R-Squared	0.9524	0.9521

Appendix Table 9

Effects of Relationships on Financing Terms: Alternative Measures of the Strength of Contract Enforcement

Notes: The specifications presented in this table are similar to those presented in column 5 of Table 5 of the paper, except a variety of measures of the strength of contract enforcement are used in the interaction term. These measures are country average values of the eight measures used in Table 4 of the paper.

Dependent Variable:	Dummy if Post Shipment Terms							
Measure of Contractual Enforcement:	Common Law Dummy	Contract Viability	Payment Delay	Enforceability of Contracts	Confidence in Legal System	Duration of Legal Procedure	Private Credit	Stock Market Capitalization
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log of Previous Sales	0.0186	0.0125	0.0125	0.0211	0.0362	0.0069	0.0247	0.0157
	(0.0087)**	(0.0054)**	(0.0053)**	(0.0085)**	(0.0105)***	-0.0060	(0.0081)***	(0.0071)**
Log of Previous Sales *	-0.0184	-0.0030	-0.0030	-0.0230	-0.0393	0.0061	-0.0267	-0.0134
Contractual Enforcement	(0.0095)*	(0.0076)	(0.0073)	(0.0088)***	(0.0113)***	(0.0074)	(0.0069)***	(0.0075)*
Log of Sales Value	-0.0009	-0.0001	-0.0001	-0.0004	-0.0003	-0.0001	-0.0006	-0.0004
	(0.0007)	(0.0006)	(0.0006)	(0.0008)	(0.0007)	(0.0007)	(0.0008)	(0.0006)
Log of Sales Volume	0.0008	0.0004	0.0004	0.0009	0.0001	0.0006	0.0005	0.0006
	(0.0008)	(0.0008)	(0.0008)	(0.0010)	(0.0005)	(0.0008)	(0.0008)	(0.0008)
Log of GDP per Capita	0.0175	0.0339	0.0342	-0.1102	0.0409	0.0358	0.0653	0.0278
	(0.0611)	(0.0584)	(0.0576)	(0.0486)**	(0.0483)	(0.0597)	(0.0718)	(0.0590)
Customer/Country Fixed Effect	Y	Y	Y	Y	Y	Y	Y	Y
Product Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
Year Fixed Effects?	Y	Y	Y	Y	Y	Y	Y	Y
No. of Obs.	567,313	551,584	551,584	501,149	503,571	538,211	501,427	540,319
R-Squared	0.9426	0.9476	0.9476	0.9577	0.9534	0.9480	0.8888	0.9502

Appendix Table 10

Financing Terms for New Customers: Results for Common and Civil Law Countries

Notes: This table presents the results of the tests in the even columns of Table 7 using two subsets of the data. The first is observations for importers based in common law countries, and the second is observations for importers based in civil law countries.

Dependent Variable:	Dummy if Cash in Advance Terms		Dummy if Letter of Credit Terms		Dummy if Post Shipment Terms	
Type of Country	Common Law	Civil Law	Common Law	Civil Law	Common Law	Civil Law
	(1)	(2)	(3)	(4)	(5)	(6)
New Customer Dummy	0.1386	0.0884	0.0261	0.0166	-0.1647	-0.1050
	(0.0174)***	(0.0149)***	(0.0073)***	(0.0091)*	(0.0179)***	(0.0151)***
Crisis Dummy	-0.0024	0.0123	-0.0005	0.0022	0.0029	-0.0145
	(0.0016)	(0.0098)	(0.0006)	(0.0040)	(0.0016)*	(0.0097)
New Customer Dummy * Crisis Dummy	-0.0460	0.0962	-0.0089	0.0230	0.0548	-0.1193
	(0.0655)	(0.0394)**	(0.0164)	(0.0214)	(0.0660)	(0.0399)***
Log of Sales Value	-0.0007	-0.0233	0.0008	0.0034	0.0000	0.0199
	(0.0017)	(0.0106)**	(0.0007)	(0.0034)	(0.0018)	(0.0110)*
Log of Sales Volume	0.0018	0.0039	-0.0003	0.0002	-0.0015	-0.0041
	(0.0012)	(0.0052)	(0.0010)	(0.0019)	(0.0015)	(0.0052)
Log of GDP per Capita	0.0870	0.0725	-0.0875	0.0236	0.0004	-0.0961
	(0.0599)	(0.0608)	(0.0648)	(0.0243)	(0.0887)	(0.0622)
Country Fixed Effects?	Y	Y	Y	Y	Y	Y
Product Fixed Effects?	Y	Y	Y	Y	Y	Y
Year Fixed Effects?	Y	Y	Y	Y	Y	Y
No. of Obs.	408,691	161,946	408,691	161,946	408,691	161,946
R-Squared	0.2537	0.6972	0.0896	0.5513	0.2475	0.6625