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The Role of Financial Factors in the Trade Collapse: A Skeptic's View

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Abstract

This paper explores the role of financial factors in the 2008-9 collapse of U.S. imports and exports. Using highly disaggregated international trade data, we examine whether the cross-sectoral variation in how much imports or exports fell during this episode can be explained by financial variables. To do this, we employ a wide variety of possible indicators, such as standard measures of trade credit and external finance dependence, proxies for shipping lags at the sector level, and shares of intra-firm trade in each sector. Overall, there is very little evidence that financial factors played a role in the collapse of U.S. trade.

JEL Classifications: F41, F42

Keywords: 2008-2009 Crisis, International Trade, Financial Factors

1. Introduction

The contraction in trade that occurred during the 2008-9 recession was global in scale and remarkably deep. Over the 2008:2 to 2009:2 period, real U.S. goods imports fell by 21.4 percent and exports 18.9 percent. The drop in trade flows in the U.S. is even more dramatic when one takes into account the fact that both import and export prices simultaneously fell relative to domestic prices, which normally would have resulted in an expansion of trade flows.

A number of recent papers have suggested that credit constraints were a significant contributing factor to the global decline in trade (see, e.g., Auboin 2009, IMF 2009, Chor and Manova, 2010). To be sure, financial intermediaries were at the epicenter of the global crisis and it is clear that credit conditions facing firms and households tightened in the fall of 2008. These constraints could be particularly important for firms engaged in international trade, as they must extend credit to their foreign counterparties prior to the shipment of goods. If these lines of credit are suspended, importing firms will cancel their orders for foreign goods, and foreign firms will reduce production.

As reasonable as this hypothesis sounds, it is a difficult empirical challenge to isolate the impact of tightening credit constraints on the collapse in trade flows. First, it is hard to tell whether a drop in credit extended to firms is due to a supply-side constraint (banks won't extend credit) or a drop in demand (demand falls so firms import fewer goods and require less credit). Second, while we can observe a firm's dependence on credit, it is difficult if not impossible to obtain precise data on the cost of credit associated with the international shipment of goods. Third, given the importance of multinational firms in international trade, it is an open question whether multinationals require credit to acquire goods from their own affiliates or long-term trade partners, and to the extent they do require credit, how such financial flows will appear in the firm's balance sheet.

This paper explores the role of financial factors in the collapse of U.S. imports and exports. Using data disaggregated at the 6-digit NAICS level (about 450 distinct sectors), we examine whether the cross-sectoral variation in how much imports or exports fell during this episode can be explained by financial variables. To do this, we employ a wide variety of possible indicators, such as standard measures of trade credit and external finance dependence, proxies for shipping lags at the sector level, and shares of intra-firm trade in each sector. In each case, our hypothesis is that if financial factors did play a role in the fall of U.S. trade, then one should expect international trade flows to fall by more in sectors with certain characteristics, a strategy reminiscent of Rajan and Zingales (1998).

Our main conclusions can be summarized as follows. Overall, there is at best weak evidence for the role of financial factors in the collapse in U.S. trade. Imports or exports *did not* fall systematically more in (i) sectors that extend or receive more trade credit; (ii) sectors that have a higher dependence on external finance or lower asset tangibility; (iii) sectors in which U.S. trade is dominated by countries experiencing greater financial

distress; (iv) sectors with lower intra-firm trade. All of these are reasonable sectoral characteristics to examine for evidence of financial factors in trade, as we detail in each case below.

For imports into the U.S., we do find some evidence that shipping lags mattered. Sectors in which a higher share of imports is shipped by ocean or land experienced larger reductions in trade. In addition, sectors with longer ocean-shipping delays also experienced significantly larger falls in imports. This is indirect evidence for the role of trade finance during the recent trade collapse. Trade finance instruments, such as letters of credit, are typically used to cover goods that are in transit. Thus, trade finance is likely to matter more for sectors in which goods are in transit longer – either because they are mostly shipped by land or sea; or because they tend to be shipped greater distances. Thus, our finding that these sectors experienced larger reductions in U.S. imports can be seen as supportive of the role of financial factors in the trade collapse.

All in all, however, the bottom line of our exercise is that in the sample of highly disaggregated U.S. imports and exports, evidence of financial factors has proven hard to find.

2. U.S. trade flows and measures of trade finance

We analyze monthly nominal data for U.S. imports and exports vis-à-vis the rest of the world at the NAICS 6-digit level of disaggregation from the USITC. This is the most finely disaggregated NAICS trade data available at the monthly frequency, yielding about 450 distinct sectors. Our empirical methodology follows Levchenko, Lewis, and Tesar (2010, henceforth LLT), which can also serve as the source for detailed data documentation. In each sector, we compute the year-on-year percentage drop in quarterly trade flows, from 2008:2 to 2009:2. This period corresponds quite closely to the peak to trough of the aggregate U.S. imports and exports.

Our working hypothesis is that if financial factors did matter for the fall in U.S. trade during this period, then the financial contraction should have affected certain sectors more than others. Thus, we estimate the following specification:

$$\gamma_i^{trade} = \alpha + \beta CHAR_i + \delta \mathbf{X}_i + \epsilon_i,$$

where i indexes sectors, γ_i^{trade} is the percentage change in the trade flow, which will be alternatively exports or imports, and $CHAR_i$ is a sectoral characteristic meant to proxy for the role of financial factors. All of the specifications include a vector of controls $\mathbf{X_i}$. The baseline controls are (i) the share of the sector in the overall U.S. imports and exports, a proxy for size; (ii) elasticity of substitution among the varieties in the sector, sourced from Broda and Weinstein (2006); and (iii) labor intensity of the sector, computed based on the U.S. Input-Output matrix. In LLT, we used a similar framework to test the relative importance of vertical production linkages, trade credit, and compositional effects/durables demand for trade flows. We found that two additional sectoral characteristics were robustly correlated with declines in trade: the extent of downstream

linkages and whether the sector was durable. Based on these findings, we include our preferred measure of downstream linkages (average usage of a sector as an intermediate in other sectors) and a dummy for durability as controls in all specifications.

This paper focuses on the hypothesis that financial variables played a role, and tests whether a variety of proxies for financing costs can account for the cross-sectoral variation in trade flows. The sectoral characteristics we consider are as follows.

- **Trade Credit.** We evaluate the hypothesis that because of the credit crunch, firms were no longer willing to extend trade credit to their suppliers. Under this view, international trade would fall, for instance, because U.S. buyers could no longer extend trade credit to foreign firms from which they normally purchase goods. To test this hypothesis, we build two measures of trade credit intensity. The first is accounts payable/cost of goods sold. This variable records the amount of credit that is extended to the firm by suppliers, relative to the cost of production. The second is accounts receivable/sales. This is a measure of how much the firm extends credit to its customers. These are the two most standard indices in the trade credit literature (see, e.g., Love, Preve and Sarria-Allende 2007), and are constructed using firm-level data from Compustat.[1] If importing and exporting firms are dependent on trade credit, these two measures of credit dependence should appear with a negative coefficient (sectors with more trade credit dependence should experience a larger reduction in trade flows).

- **External finance dependence.** The second set of measures is inspired by the large literature on the role of financial constraints in sectoral production and trade. Following the seminal contribution of Rajan and Zingales (1998), we compute external finance dependence as the share of investment not financed out of current cash flow. This measure is based on the assumption that in certain industries, investments by firms cannot be financed with internal cash flows, and these are the industries that are especially dependent on external finance. If financially dependent industries were in systematically greater distress during this crisis, the coefficient on this variable should be negative (greater dependence leads to larger falls in trade).

  A related measure is the level of tangible assets (plant, property, and equipment), as a share of total assets by sector. Firms with greater tangible assets should have better collateral and therefore an easier time obtaining credit. This variable should have a positive coefficient in our regressions (more pledgeable assets means it is easier to raise external finance, and thus a credit crunch will have less of an

[1] We obtain data on all firms in Compustat from 2000 to 2008, compute these ratios for each firm in each quarter, and then take the median value for each firm across all the quarters for which data are available. We then take the median of this value across firms in each industry. We take medians to reduce the impact of outliers, which tend to be large in firm-level data. Taking means instead leaves the results unchanged. Since coverage is uneven across sectors, we ensure that we have at least 10 firms over which we calculate trade credit intensity. This implies that sometimes the level of variation is at the 5-, 4-, and even 3-digit level, though the trade data are at the 6-digit NAICS level of disaggregation. See LLT for more details.

impact on production or cross-border trade). As with measures of trade credit, external finance dependence indicators were built using standard definitions and data from Compustat.

- **Partner country credit conditions.** The next hypothesis we test is that trade should fall disproportionately more with countries that experienced greater financial distress. This approach is inspired by the work of Chor and Manova (2010), who find a link between credit conditions in the trading partner and the volume of bilateral trade. To capture this effect, we follow LLT in creating a trade-weighted credit contraction (*TWCC*) measure for imports and exports:

$$TWCC_i^{trade} = \sum_{c=1}^{N} \Delta IBRATE_c \times a_{ic}^{trade},$$

where *c* indexes countries, the superscript *trade* refers to either imports or exports, $\Delta IBRATE_c$ is the change in the interbank lending rate over the period of the crisis in country *c*, and a_{ic} is the pre-crisis share of total U.S. trade in sector *i* captured by country *c*. For imports, a_{ic} is thus the share of total U.S. imports coming from country *c* in sector *i*, while for exports, a_{ic} is the share of total U.S. exports in sector *i* going to country *c*.

In case of imports, the value of *TWCC* will be high if in sector *i*, a greater share of U.S. pre-crisis imports comes from countries that experienced a more severe credit crunch. Therefore, if the credit crunch hypothesis is correct, the coefficient on this variable will be negative (tighter partner-country credit conditions lead to a greater contraction in trade flows).[2]

- **Shipping lags and trade finance.** Auboin (2009) and Amiti and Weinstein (2009) emphasize the role of trade finance instruments in international trade. These instruments, such as letters of credit, are used by firms to cover costs and guarantee payment while goods are in transit. We are not aware of any sector-level measures of trade finance used by U.S. firms engaged in international trade. However, if the needs for trade finance are positively related to the time it takes a good to reach its destination, one might expect trade finance costs to be increasing with distance and delivery lags. For ocean transit, shipping times can be as long as several weeks (Hummels and Schaur, 2010), during which the exporting firm would typically be waiting for payment.

If these considerations matter, we should expect trade to fall more in sectors with longer shipping lags. In order to test for this possibility, we use bilateral trade data disaggregated by mode of shipping to compute several indicators of delays.[3] The first is simply the average distance travelled by a dollar's worth of imports or

[2] We are grateful to Davin Chor and Kalina Manova for sharing the interbank rate data used in their paper.
[3] We use 2007 data collected by the U.S. Census Bureau and made available by Peter Schott on his website: http://www.som.yale.edu/faculty/pks4/sub_international.htm.

exports in each sector. The second is the share of imports and exports that travelled by air, ship, and over land. The hypothesis is that in sectors dominated by air shipping, trade finance would matter much less, since air shipping time is almost never greater than one or two days (Hummels, 2007). However, in sectors dominated by other forms of shipping, delays are substantially longer, and thus a disruption in trade finance potentially more damaging.

Finally, we use data on average ocean shipping times from each country to the U.S. to calculate a proxy for the average shipping time in each sector:

$$TIME_i = \left(\sum_{c=1}^{N} a_{ic,ocean}^{trade} \times ShipDays_c \right) \times a_{i,ocean}^{trade} + 2 \times \left(a_{i,air}^{trade} + a_{i,other}^{trade} \right),$$

In this expression, *c* indexes countries, the superscript *trade* can refer to either imports or exports, $a_{ic,ocean}^{trade}$ is the share of country *c*'s ocean trade in total U.S. ocean trade in sector *i*, $a_{i,ocean}^{trade}$ is the share of U.S. trade in sector *i* that is shipped by ocean, and $ShipDays_c$ is the ocean shipping time from country *c* to the United States. We do not have shipping time measures for shipments by air and other means. In calculating our measure, we assume that shipment by air or other means (which usually means truck or pipeline) takes 2 days.

Thus, $TIME_i$ is the average shipping time, in days, for a dollar's worth of imports or exports in sector *i*. If firms must raise finance to cover the period goods are in transit, one would expect a negative coefficient on the variables reflecting shipping delays (larger delays mean a greater role for trade finance, implying a larger fall in trade).[4]

- **Intra-firm trade.** Finally, we hypothesize that trade finance used for insuring exporters against non-payment for the shipment will matter less if trade is intra-firm. Thus, a contraction in trade finance will have less of an impact, if any, on the more than one-third of U.S. trade that is intra-firm. To check for this possibility, we regress the fall in trade in a sector on the share of intra-firm trade in total trade in the sector. This variable is computed by combining multinational affiliate sales data from the Bureau of Economic Analysis with standard international trade data, and averaging over the period 2002-2006. Sectors with a greater share of intra-firm trade should experience smaller reductions in trade – a positive coefficient.

Table 1 reports summary statistics (mean, standard deviation, minimum and maximum across the sectors) for the variables used in the analysis. The top panel shows statistics for the two dependent variables, the percentage change in imports and exports over the 2008:2 to 2009:2 period. The mean sectoral decline is 25.3 percent for imports and 20.9

[4] We are very grateful to David Hummels and Georg Schaur for computing these measures for us using their ocean shipping time data.

percent for exports. There is considerable heterogeneity across sectors – some sectors even saw an expansion of trade, while others experienced a large contraction. Thus, there is a great deal of cross-sectoral variation that could potentially be exploited.

3. Estimation results

We now turn to the results of the regression analysis. Table 2 presents the results when the dependent variable is U.S. imports by sector and Table 3 the results when the dependent variable is U.S. exports. Throughout, we report the standardized beta coefficients, obtained by first renormalizing each variable to have mean of 0 and standard deviation of 1. Thus, all the regression coefficients correspond to the number of standard deviations change in the left-hand side variable that would be due to a one-standard deviation change in the right-hand side variable. This also implies that the magnitudes of the coefficients are comparable across variables that may have very different scales when not normalized.

The controls for sector size in trade and labor intensity come in strongly significant across the board. In addition, the main two variables found to be significant in our earlier study – durability and vertical production linkages – remain strongly significant, with all *p*-values less than 1% in case of U.S. imports.

The coefficients on the financial variables are less consistent. Columns (1) and (2) of each table report the results for the trade credit variables. For imports, the coefficients are not significant, and the point estimates are close to zero. For exports, accounts payable is not significant with a near-zero point estimate, while the accounts receivable variable is significant at the 10% level, but with the "wrong" sign: exports in sectors that extend trade credit more intensively fell by *less*.

Columns (3) and (4) of Tables 2 and 3 report the results for the measures of external finance dependence. While for both directions of trade flows, the Rajan-Zingales measure of external dependence is insignificant with a near-zero beta coefficient, asset tangibility is significant, but once again with the "wrong" sign: sectors with a greater share of tangible assets should have a relatively easier time getting credit during a crunch; we find that those sectors also had *larger* falls in both imports and exports.

Column (5) reports the results for the trade-weighted credit contraction in the partner countries. Once again, while the coefficient is essentially zero for U.S. imports, for exports it is significant at 10% with the "wrong" sign: exports from the U.S. fell by *less* in sectors dominated by trading partners with greater credit contractions.

Columns (6), (7), and (8) report the results of using shipping lags measures. For U.S. exports, these do not seem to matter. For imports there is some evidence for the role of shipping lags. While the simple average distance shipped is not significant (column 6), the mode of transportation is. Sectors with higher shares of imports shipped by ocean and other means (usually truck and pipeline) experienced larger falls than sectors with higher shares of air shipping (column 7). Furthermore, sectors with longer shipping times had

larger falls in imports (column 8). The magnitudes of the beta coefficients are also economically significant: a one standard deviation change in share shipped by ocean is associated with a 0.148 standard deviations greater fall in imports. Similarly, a one standard deviation change in shipping time leads imports to fall by 0.123 standard deviations.

One difficulty in interpreting the shipment coefficients is that the mode of shipping could be an endogenous variable. For instance, Hummels and Schaur (2010) find that firms choose the shipping mode optimally in response to demand volatility. A second problem is that the mode of shipping is likely to be correlated with the type of good (e.g. automobiles account for a substantial fraction of the decline in trade, and are never shipped by air). While other industry characteristics that we control for explicitly may sweep out some of this variation, there could be others that are missing from our analysis.

Finally, column (9) reports the results of regressing imports and exports on the share of intra-firm trade in the sector. While the coefficient has the "right" sign, it is very close to zero and insignificant.

4. Conclusion

It is widely recognized that the current global downturn was triggered by a large-scale financial crisis. At the same time, the world experienced a collapse in international trade of a magnitude unseen since World War II. Putting the two together, it is a reasonable hypothesis that financial factors contributed to the collapse in trade. However, hard evidence for this has proven elusive. In this paper, we test a battery of hypotheses for how financial factors could have affected U.S. imports and exports at the sector level. Overall, we find very little evidence that financial factors contributed to the trade collapse. This is in sharp contrast to the other measures that were found to matter a great deal in earlier studies: vertical production linkages and the role of durables.

We conclude by highlighting some boundaries of our empirical analysis. First, even though we find hardly any effect of financial variables on overall U.S. import and export volumes in each sector, it could be that financial variables were partly responsible for collapses in bilateral trade from individual countries in particular sectors. This is consistent with the results of Chor and Manova (2010), who find that countries experiencing greater credit contractions reduced their exports to the U.S. especially in financially dependent sectors. Our results do point out that when aggregating across partner countries up to sector level, the effect disappears.

In light of historical experience, this is not surprising. LLT find that relative to the level of economic activity, the fall in U.S. trade during the 2001 recession was almost as large as in 2008-9. However, the 2001 recession was not accompanied by a contraction in credit, suggesting that other mechanisms are probably responsible for falls in cross-border trade during economic downturns.

Second, though the U.S. is widely seen as the epicenter of the financial crisis, its financial

system is nonetheless one of the deepest and most resilient in the world. Thus, it could be that even if we find no effect of financial factors for U.S. trade, these factors are much more important in other countries with weaker financial systems. Indeed, Iacovone and Zavacka (2009) do find that in a wide sample of countries, past banking crises did affect international trade flows.

Third, even if we were to find a significant impact of financial characteristics on international trade volumes, such a result would not necessarily be evidence of financial factors in international trade specifically, since production may have fallen by just as much in each sector. Thus, a conclusive test of the role of financial variables in the trade collapse would have to find that financial factors were responsible for changes in trade *over and above the change in output*. This is a critique that applies also to the other existing studies of finance and trade, though it is less of a problem for our negative results, since we do not even find a robust effect on unadjusted trade volumes.

References

Amiti, Mary and David E. Weinstein, "Exports and Financial Shocks," December 2009. NBER Working Paper 15556.

Auboin, Marc, "Restoring Trade Finance: What the G20 Can Do," in Richard Baldwin and Simon Evenett, eds., *The Collapse of Global Trade, Murky Protectionism, and the Crisis: Recommendations for the G20*, London: CEPR, 2009, chapter 15, pp. 75-80.

Broda, Christian and David Weinstein, "Globalization and the Gains from Variety," *Quarterly Journal of Economics*, May 2006, 121 (2), 541-85.

Chor, Davin and Kalina Manova, "Off the Cliff and Back? Credit Conditions and International Trade during the Global Financial Crisis," July 2010. NBER Working Paper 16174.

Hummels, David L., "Transportation Costs and International Trade in the Second Era of Globalization," *Journal of Economic Perspectives*, Summer 2007, 21 (3), 131-54.

Hummels, David L. and Georg Schaur "Hedging price volatility using fast transport," *Journal of International Economics*, September 2010, 82 (1), 15–25.

Iacovone, Leonardo and Veronika Zavacka, "Banking Crises and Exports: Lessons from the Past," May 2009. World Bank Policy Research Working Paper 5016.

IMF, "Survey of Private Sector Trade Credit Developments," February 2009. memorandum.

Levchenko, Andrei A., Logan T. Lewis and Linda L. Tesar, "The Collapse of International Trade During the 2008-2009 Crisis: In Search of the Smoking Gun," May 2010. Forthcoming, *IMF Economic Review*.

Love, Inessa, Lorenzo A. Preve, and Virginia Sarria-Allende, “Trade Credit and Bank Credit: Evidence from Recent Financial Crises,” *Journal of Financial Economics*, 2007, 83, 453-469.

Rajan, Raghuram G., and Luigi Zingales. “Financial Dependence and Growth,” *The American Economic Review*, June 1998, 88 (3), 559-586.

Table 1: Summary Statistics

	Mean	Std. Dev.	Min	Max
Independent Variables				
Percentage Change in Imports	-0.253	0.227	-1.000	0.861
Percentage Change in Exports	-0.209	0.214	-0.969	0.744
Credit Indicators				
Accounts Payable/Cost of Goods Sold	0.469	0.141	0.194	1.733
Accounts Receivable/Sales	0.532	0.131	0.156	0.817
External Finance Dependence	0.703	0.476	-2.977	1.852
Asset Tangibility	0.735	0.669	0.096	6.619
TWCC (imports)	-2.691	0.493	-5.594	-1.178
TWCC (exports)	-2.721	0.392	-4.190	-0.411
Shipping Delays Indicators				
Average Distance Shipped (imports)	6650	2533	549	15201
Average Distance Shipped (exports)	5233	1869	781	11192
Share Shipped by Truck and Pipeline (imports)	0.330	0.254	0.000	1.000
Share Shipped by Truck and Pipeline (exports)	0.442	0.224	0.000	0.942
Share Shipped by Vessel (imports)	0.527	0.267	0.000	1.000
Share Shipped by Vessel (exports)	0.364	0.235	0.000	0.997
Average Time to Ship, in days (imports)	22	4	4	36
Average Time to Ship, in days (exports)	19	4	6	33
Control Variables				
Share in Total Imports	0.002	0.007	0.000	0.088
Share in Total Exports	0.002	0.005	0.000	0.045
Elasticity of Substitution	6.817	10.705	1.200	103
Labor Intensity	0.633	0.229	0.049	0.998
Average Downstream Use	0.001	0.002	0.000	0.013
Durable Dummy	0.587	0.493	0.000	1.000

Note: This table presents the summary statistics for the variables used in estimation. Variable definitions and sources are described in detail in the text. See also LLT.

Table 2: Imports and Financial Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dep. Var.: Percentage Change in Imports									
Accounts Payable/Cost of Goods Sold	0.076								
	(0.085)								
Accounts Receivable/Sales		0.056							
		(0.071)							
External Finance Dependence			0.035						
			(0.041)						
Asset Tangibility				-0.185***					
				(0.071)					
TWCC					-0.008				
					(0.069)				
Average Distance Shipped						0.087			
						(0.063)			
Share Shipped by Truck and Pipeline							-0.133**		
							(0.067)		
Share Shipped by Vessel							-0.148**		
							(0.063)		
Average Time to Ship								-0.123**	
								(0.058)	
Share of Intra-Firm Imports									0.022
									(0.049)
Durable Dummy	-0.206***	-0.215***	-0.194***	-0.258***	-0.185***	-0.193***	-0.212***	-0.220***	-0.191***
	(0.059)	(0.054)	(0.048)	(0.046)	(0.050)	(0.047)	(0.047)	(0.046)	(0.049)
Average Downstream Use	-0.200***	-0.195***	-0.203***	-0.154***	-0.192***	-0.178***	-0.172***	-0.197***	-0.205***
	(0.042)	(0.044)	(0.043)	(0.047)	(0.040)	(0.045)	(0.043)	(0.041)	(0.046)
Share in Total	-0.092*	-0.073*	-0.069*	-0.027	-0.064*	-0.071**	-0.074**	-0.074**	-0.061
	(0.047)	(0.038)	(0.039)	(0.042)	(0.037)	(0.035)	(0.031)	(0.034)	(0.037)
Elasticity of Substitution	-0.076	-0.073	-0.08	-0.064	-0.078	-0.075	-0.07	-0.068	-0.078
	(0.061)	(0.061)	(0.062)	(0.058)	(0.061)	(0.059)	(0.061)	(0.062)	(0.060)
Labor Intensity	-0.113**	-0.129**	-0.126**	-0.135**	-0.122**	-0.121**	-0.114**	-0.124**	-0.110**
	(0.054)	(0.054)	(0.055)	(0.054)	(0.051)	(0.058)	(0.055)	(0.052)	(0.053)
Observations	415	415	423	432	435	436	436	434	437
R-squared	0.124	0.122	0.124	0.138	0.116	0.114	0.119	0.133	0.112

Notes: Standardized beta coefficients reported throughout. Robust standard errors in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%. The dependent variable is the percentage reduction in U.S. imports in a 6-digit NAICS category from 2008:2 to 2009:2 (year-to-year). *Average Downstream Use* is the average usage output in a sector as an intermediate input in other sectors; *Share of intra-firm imports* in total U.S. imports is computed from the BEA multinationals data, and averaged over the period 2002-2006. *Share in Total* is the share of a sector in total U.S. imports. *Elasticity of Substitution* between varieties in a sector is sourced from Broda and Weinstein (2006). *Labor Intensity* is the compensation of employees as a share of value added, from the U.S. 2002 Benchmark Input-Output Table. The financial variables are described in detail in the text.

Table 3: Exports and Financial Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dep. Var.: Percentage Change in Exports									
Accounts Payable/Cost of Goods Sold	0.012								
	(0.068)								
Accounts Receivable/Sales		0.105*							
		(0.063)							
External Finance Dependence			0.01						
			(0.050)						
Asset Tangibility				-0.156**					
				(0.062)					
TWCC					0.120*				
					(0.065)				
Average Distance Shipped						0.093			
						(0.064)			
Share Shipped by Truck and Pipeline							-0.093		
							(0.062)		
Share Shipped by Vessel							-0.083		
							(0.070)		
Average Time to Ship								-0.042	
								(0.056)	
Share of Intra-Firm Exports									0.016
									(0.050)
Durable Dummy	-0.094	-0.137**	-0.100**	-0.152***	-0.082	-0.111**	-0.125**	-0.104**	-0.106**
	(0.058)	(0.055)	(0.050)	(0.054)	(0.051)	(0.050)	(0.052)	(0.050)	(0.050)
Average Downstream Use	-0.098**	-0.090**	-0.100**	-0.054	-0.091**	-0.073*	-0.07	-0.095**	-0.098**
	(0.042)	(0.043)	(0.043)	(0.048)	(0.041)	(0.044)	(0.044)	(0.041)	(0.041)
Share in Total	-0.191***	-0.194***	-0.189***	-0.199***	-0.196***	-0.210***	-0.208***	-0.190***	-0.188***
	(0.067)	(0.064)	(0.067)	(0.062)	(0.064)	(0.068)	(0.061)	(0.065)	(0.064)
Elasticity of Substitution	-0.049	-0.042	-0.049	-0.036	-0.05	-0.062	-0.049	-0.045	-0.05
	(0.087)	(0.085)	(0.087)	(0.082)	(0.079)	(0.079)	(0.081)	(0.083)	(0.083)
Labor Intensity	-0.135**	-0.134***	-0.129**	-0.156***	-0.133***	-0.145***	-0.156***	-0.143***	-0.145***
	(0.054)	(0.050)	(0.050)	(0.052)	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)
Observations	415	415	423	432	437	436	436	436	437
R-squared	0.097	0.106	0.098	0.116	0.117	0.113	0.112	0.105	0.104

Notes: Standardized beta coefficients reported throughout. Robust standard errors in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%. The dependent variable is the percentage reduction in U.S. exports in a 6-digit NAICS category from 2008:2 to 2009:2 (year-to-year). *Average Downstream Use* is the average usage output in a sector as an intermediate input in other sectors; *Share of intra-firm exports* in total U.S. exports is computed from the BEA multinationals data, and averaged over the period 2002-2006. *Share in Total* is the share of a sector in total U.S. exports. *Elasticity of Substitution* between varieties in a sector is sourced from Broda and Weinstein (2006). *Labor Intensity* is the compensation of employees as a share of value added, from the U.S. 2002 Benchmark Input-Output Table. The financial variables are described in detail in the text.