Testing the Trade Credit and Trade Link: Evidence from Data on Insured Trade Credit

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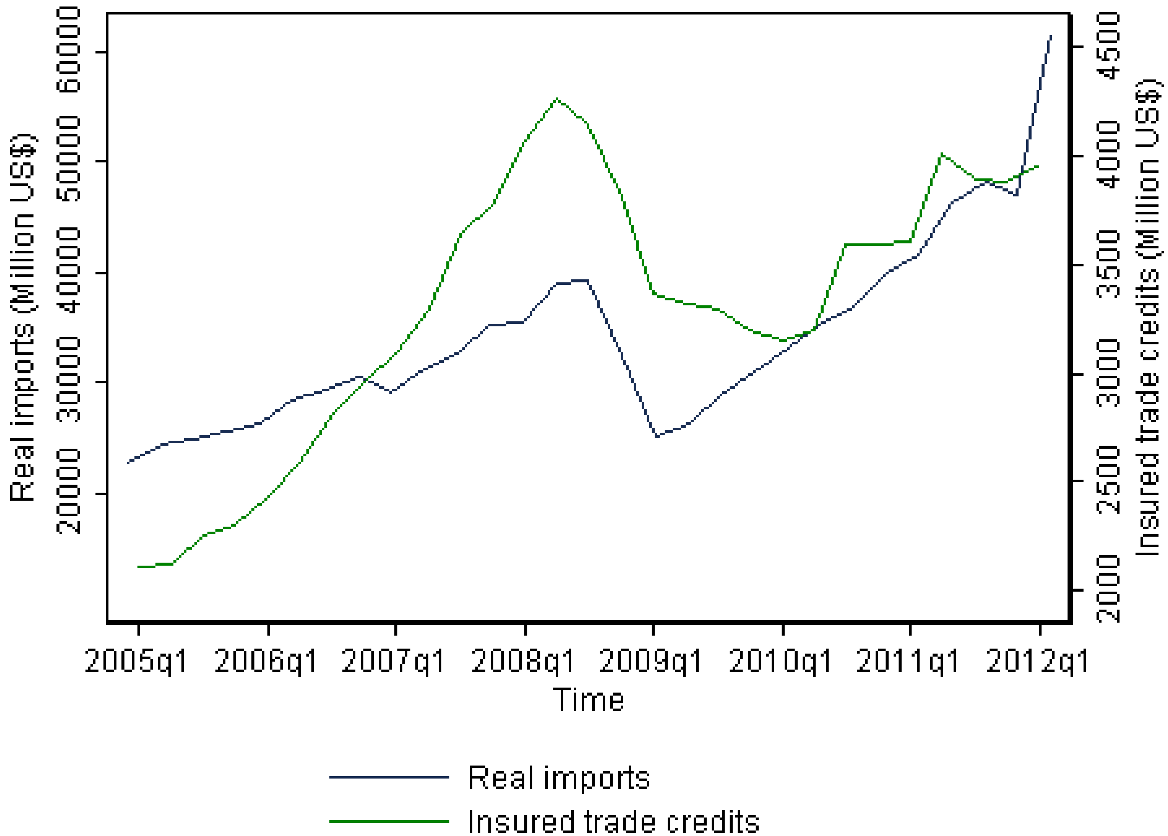
Correlation between insured trade credits and trade flows (imports)



Establishing the Relationship between Trade Credit Insurance and Trade

How important is insured trade credit, a proxy for trade credits, for international trade?

Advantages of Berne Union Data:

•Most extensive dataset on trade credits available, cover one full cycle (Q12005-Q4 2011)

•Covers a wide number of countries: 91 countries (35 high income, 26 upper-middle income countries, 21 lower-middle income , 9 low income countries

•Allows for a sufficient number of observations to be statistically significant: 28 quarters, 1776 country-quarter observations

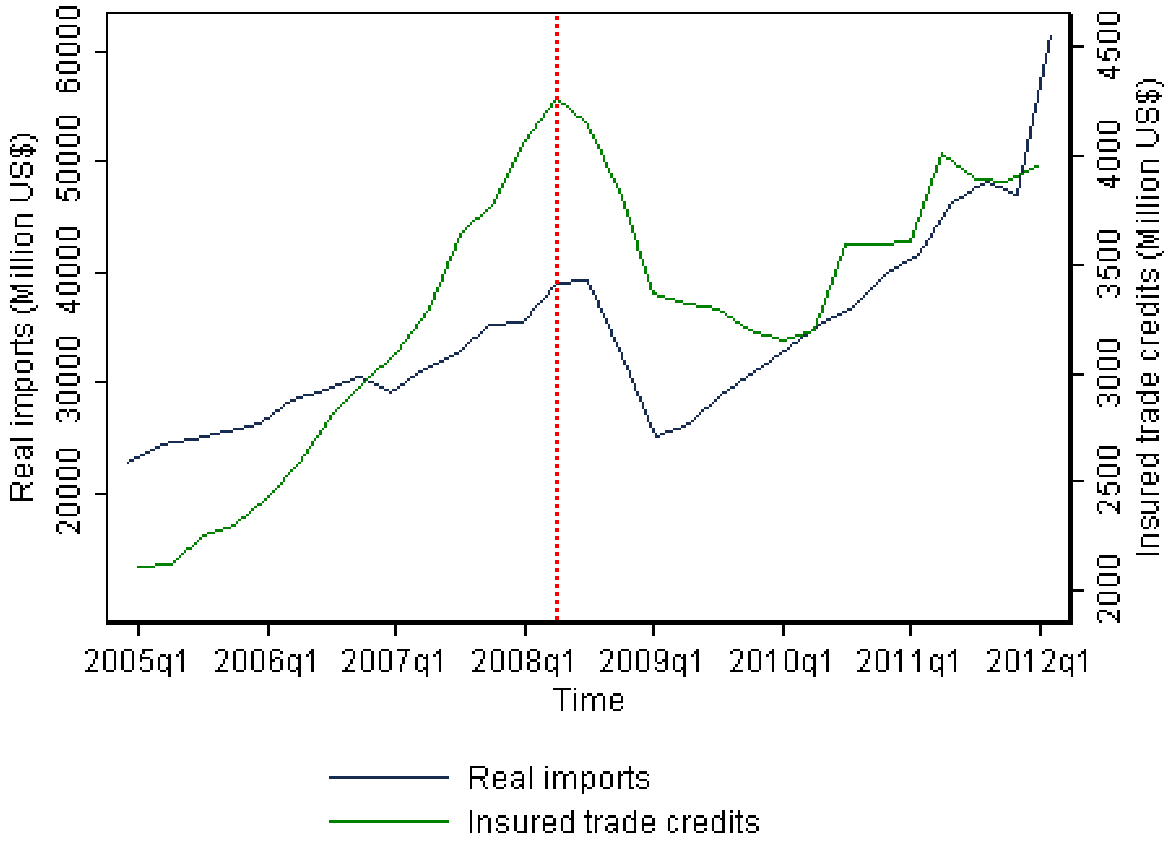
•Allows macro analysis: comparison with trade data, GDP, money, competitiveness

How to establish the causality?

1.Establish a link between financial sector conditions and the availability of trade credits

2.Estimate the effect of insured trade credits on trade

Trade Collapse and Decrease in Trade Credits



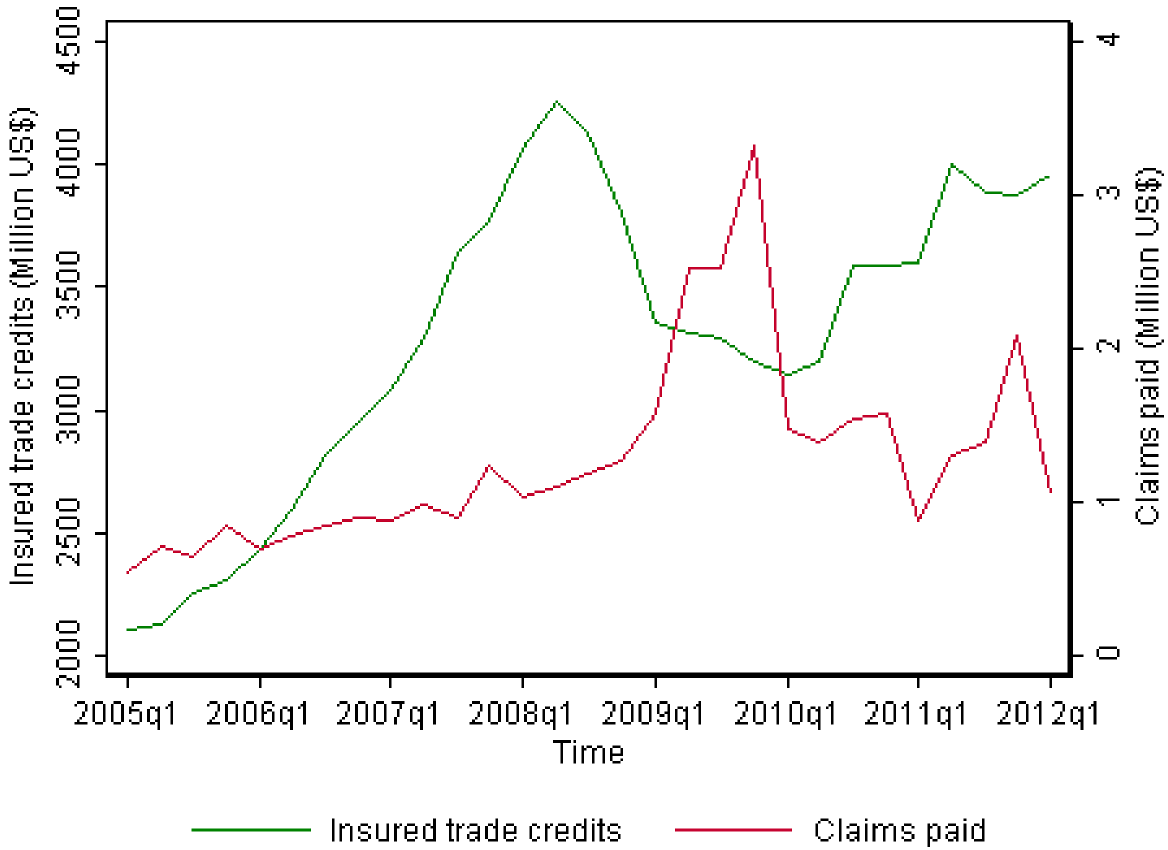
Trade Collapse and Decrease in Trade Credits

- Real imports and short-term insured trade credits increased till the beginning of 2008

- The drop in short-term trade credits preceded the one of real imports by one quarter
  - Hints at causal impact of trade credits on imports
  - But firms may have already anticipated the decline in orders for the next quarter and hence have adjusted their demand for trade credit insurance

- Strong positive correlation, but no causal interpretation admissible from simple examination of the figure

Insured Trade Credits and Claims Paid



Insured Trade Credits and Claims Paid

- Average amount of insured trade credits granted per country is about US $ 7 billion
- Average amount of claims per country is US $ 3 million
- Hence, on average only 0.05 % of transactions resulted in a claim to the insurance company

- During the financial crisis claims paid increased and insured trade credits somewhat decreased
- The two variables seem to be negatively correlated
- However, opposing volume and risk effect
  - Risk effect: negative correlation
  - Volume effect: positive correlation
- Therefore, we use the share of claims paid relative to total turnover of insured trade credits

Empirical Strategy

Two-Stage-Estimation:

$$TF_{jt-1} = \delta_0 + \delta_1\, STC_{jt-2} + \delta_2 D_{crisis} + \delta_3 L_{jt-1} + \delta_4 gdp_{jt-1} + \delta_5 reer_{jt-1} + \omega_j + u_{jt} \quad (1)$$

$$M_{jt} = \beta_0 + \beta_1 \widehat{TF}_{jt-1} + \beta_2 D_{crisis} + \beta_3 gdp_{jt-1} + \beta_4 reer_{jt-1} + \alpha_j + \varepsilon_{jt} \quad (2)$$

M_{jt}: real imports of country *j* in quarter *t*

TF_{jt-1}: insured trade credit of exports to country *j* in quarter *t-1*

STC_{jt-2}: short-term claims paid of insured exports to country *j* in quarter *t-2*

D_{crisis}: dummy being one for the crisis period and 0 otherwise

L_{jt-1}: monetary aggregate M1 of country *j* in quarter *t-1* as a liquidity measure

gdp_{jt-1}: real GDP of country *j* in quarter *t-1* (does only vary over years)

$reer_{jt-1}$: measure of country j's competitiveness in quarter *t-1*

α_j, ω_j: country fixed effects

What does this mean?

Stage 1:

Is Insured trade credit mainly determined by: liquidity in the economy, the level of risk, GDP ?

Stage 2:

Are imports determined by insured trade credit AND usual determinants (GDP/demand; competitiveness)?

Regression Results: First Stage

VARIABLES	(1) L.lSTtrade credit	(2) L.lSTtrade credit	(3) L.lSTtrade credit
L.lrealgdp	0.739***	1.133***	1.424***
	(0.0129)	(0.0313)	(0.050)
Crisis	0.039	0.072***	0.065***
	(0.0423)	(0.013)	(0.0131)
L.lreer	0.158	-0.221**	-0.497***
	(0.211)	(0.079)	(0.087)
L2.STclaimspercredit	-0.0184**	-0.0151***	-0.0143***
	(0.0071)	(0.0039)	(0.0038)
L2.lm1	0.223***	0.0158**	0.0057
	(0.0058)	(0.0078)	(0.0077)
Constant	-3.001***	-3.026***	-4.452***
	(1.007)	(0.379)	(0.416)
Estimation Method	2SLS	RE IV	FE IV
Observations	1,776	1,776	1,776
R-squared	0.887	0.859	0.855
Number of countries	91	91	91

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Results: First Stage

- Financial conditions as well as the overall level of real economic activity have strong effects on insured trade credits

Financial variables:

- Risk of credit insurance has a significantly negative effect on insured trade credits, albeit small
- Export credit agencies seem to aim at maintaining trade credit insurance on a high level even when risk environment aggravated
- Liquidity has a significantly positive effect on insured trade credits

Real Economic Activity:

- Roughly a 1-to-1 relation between real GDP and insured trade credits

Regression Results: Second Stage

	(1)	(2)	(3)
VARIABLES	lrealimports	lrealimports	lrealimports
L.lSTtrade credit	0.412***	0.365***	0.322**
	(0.0206)	(0.124)	(0.140)
L.lrealgdp	0.470***	0.459***	0.406**
	(0.0209)	(0.143)	(0.202)
Crisis	-0.153***	-0.146***	-0.140***
	(0.0230)	(0.0114)	(0.0112)
L.lreer	-0.302***	-0.0737	0.0218
	(0.0954)	(0.0494)	(0.0830)
Constant	2.870***	2.266***	2.647***
	(0.446)	(0.435)	(0.668)
Estimation Method	2SLS	RE IV	FE IV
Observations	1,776	1,776	1,776
R-squared	0.957	0.958	0.958
Number of countries	91	91	91

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Regression Results: Second Stage

Trade Credit Effect:

•Independently of the specification short-term insured trade credits have a positive significant impact on real imports

•The trade credit elasticity of imports is 0.3 - 0.4

•Hence, the 27.8 % drop of insured trade credits (US $ 1 trillion in 2. quarter 2008 to US $ 734 billion in 1. quarter of 2010) would be responsible for a reduction in real imports by about 11 %.

Other controls:

•Real GDP has a strong effect on real imports

•The financial crisis had a significantly negative effect on imports

Conclusion

- Strong causal link between short-term insured trade credits and trade on a macro level
- The significant positive effect does not vary between crisis and non-crisis periods
- Important role of export credit agencies

Trade finance matters!

Policy implications

- Market incentives for supplying trade credit must be maintained at a high level
- Access to trade credit insurance can be facilitated, taking into account the low-risk character of the trade credit industry