Credit Constraints, Heterogeneous Firms, and International Trade


Kalina Manova

University of Oxford, NBER and CEPR

Links: Kalina Manova’s [webpage](#) and [research portfolio](#), [this paper](#), and [these slides](#)
Motivation

- International trade models traditionally assume that resources are perfectly and instantaneously allocated in an economy
  - Comparative advantage based on cross-country differences in factor endowments and productivity leaves many trade patterns unexplained

- An important recent advance in the trade literature is the study of different market and institutional frictions
  - Rule of law, labor market rigidities, financial market imperfections
  - Motivated by results in the development, growth and finance literatures on the disruptive effects of financial constraints

- Growing evidence that credit conditions have a first-order effect on international trade and investment activity
This Paper

- Provide an integrated model of international trade with firm heterogeneity and financial market imperfections
  - Financial development is an important source of comparative advantage
  - Credit constraints interact with firm heterogeneity and reinforce the selection of only the most productive firms into exporting

- Empirical evidence and decomposition of the disruptive effects of credit constraints on trade
  - Establish causality by exploiting the variation in financial development across countries and in financial vulnerability across sectors
  - 80% of the impact of credit constraints on trade is above and beyond that on overall production
  - 1/3 of the trade-specific effect is due to less entry into exporting and 2/3 due to lower firm-level exports

Kalina Manova, Oxford
Exports and Countries’ Financial Development

- Financially more advanced countries export more in the average sector and destination (correlation coefficient 0.66)
Exports and Sectors’ Financial Vulnerability

- Financially advanced country (Italy) sells more than financially less developed country (Argentina), especially in financially more vulnerable industries.
Policy Implications

- Exporters depend more on external financing than domestic producers
  - Trade flows more sensitive than GDP to credit tightening during financial crises

- Important policy implications for developing countries that typically rely on trade for growth but suffer from weak financial institutions

- Under inefficient allocation of financial capital, the presence of heterogeneous firms can affect the welfare gains from trade
Why Exporters Require External Finance

- Firms routinely rely on external capital to cover upfront costs that cannot be financed out of retained earnings or cash flows from operations.

- Exporting even more dependent on external finance than manufacturing for the home country:
  - Additional upfront costs specific to export activities
  - Cross-border shipments take 30-90 days longer to process
  - International transactions are riskier

- Very active market for the financing and insurance of international transactions, worth $10-$12 trillion in 2008:
  - 90% of world trade relies on some form of trade finance.
Outline

1. Introduction and motivation

2. Theoretical framework

3. Data and empirical strategy

4. Results

5. Conclusion
Model Overview

- Exporters pledge collateral to raise required external capital, but financial contracts are not always enforced
  - More productive firms are less credit constrained because they can offer investors higher repayment when contracts are enforced

- Key implications
  - Financial frictions reinforce the selection of only the most productive firms into exporting and preclude potentially profitable firms from exporting
  - If firms require external finance for both fixed and variable costs, credit constraints also restrict the value of firm exports
  - With repeated fixed costs of exporting at the destination-product level, credit constraints limit firms’ export product scope and number of destinations
  - Bigger distortions in financially more dependent sectors
Model Set-Up

- A continuum of heterogeneous firms produce differentiated goods in each of $J$ countries and $S$ sectors
  - CES utility with elasticity $\varepsilon > 1$ summarizes consumers' love of variety

- Production
  - Firms draw productivity $1/a$ from $G(a)$ with support $[a_L, a_H]$, $a_H > a_L > 0$
  - $c_{jsa}$: cost of producing 1 unit in country $j$ in sector $s$
  - Sunk entry cost $c_{jsfej}$
  - Measure $N_{js}$ of firms in country $j$ and sector $s$

- Exporting
  - $c_{jsfi}$: fixed cost of exporting from $j$ to $i$
  - $\tau_{ij}$: variable iceberg cost of exporting from $j$ to $i$
Financing Constraints

- Firms require external finance for a fraction $d_s$ of the fixed trade cost, which they can raise by pledging a fraction $t_s$ of the entry cost as collateral
  - $d_s$ and $t_s$ are technologically determined sector characteristics

- Financial contracting is imperfect and depends on countries’ institutions
  - With probability $\lambda_j$ the financial contract is enforced and investors are repaid
  - With probability $(1 - \lambda_j)$ the firm defaults, investors claim collateral, and firms keep all revenues but need to replace collateral to continue operations
Firm Problem

Credit constrained exporters in country $j$ maximize profits for each market $i$

$$\max_{p,q,F} \pi_{ijs}(a) = p_{ijs}(a)q_{ijs}(a) - q_{ijs}(a)\tau_{ij}c_{js}a - (1 - d_s)c_{js}f_{ij} - \lambda_j F(a) - (1 - \lambda_j)t_s c_{js}f_{ej}$$

subject to

1. $$q_{ijs}(a) = \frac{p_{ijs}(a) - \varepsilon Y_i}{p_{is}^{1-\varepsilon}}$$
2. $$A_{ijs}(a) \equiv p_{ijs}(a)q_{ijs}(a) - q_{ijs}(a)\tau_{ij}c_{js}a - (1 - d_s)c_{js}f_{ij} \geq F(a)$$
3. $$B_{ijs}(a) \equiv -d_s c_{js}f_{ij} + \lambda_j F(a) + (1 - \lambda_j)t_s c_{js}f_{ej} \geq 0$$
Credit constraints increase the productivity cut-off for exporting \((a^* \rightarrow a^L)\) and preclude some firms \([1/a^L, 1/a^H]\) from exporting at their first-best level.

- Financial development mitigates both distortions, with a disproportionately stronger effect in financially vulnerable sectors.
Selection into Exporting

- Country \( j \) is more likely to export to country \( i \) in a financially more vulnerable sector \( s \) if \( j \) is more financially developed.

- Latent variable \( Z_{ijs} \): \( j \) exports to \( i \) in sector \( s \) if \( Z_{ijs} > 1 \)

\[
Z_{ijs} = \left( \frac{a_{ijs}}{a_L} \right)^{\epsilon-1}
\]

- Estimating equation

\[
z_{ijs} = \gamma_0 + \gamma_1 \text{FinDevt}_j \cdot \text{ExtFin}_s - \gamma_2 \text{FinDevt}_j \cdot \text{Tang}_s + 
+ (\epsilon - 1)p_{is} - \mu d_{ij} - \kappa \varphi_{ij} + \phi_i + \phi_j + \phi_s + \eta_{ijs}
\]
Product Variety

- Country $j$ exports a wider range of products to country $i$ in a financially more vulnerable sector $s$ if $j$ is more financially developed.

- Mass of firms exporting from $j$ to $i$ in sector $s$

$$X_{ijs} = N_{js}G(a_{ijs}^L)$$

- Estimating equation

$$x_{ijs} = \xi_0 + \xi_1 \text{FinDevt}_j \cdot \text{ExtFin}_s - \xi_2 \text{FinDevt}_j \cdot \text{Tang}_s +$$

$$+ \xi_3 n_{js} + \xi_4 p_{is} - \xi_5 d_{ij} - \xi_6 \phi_{ij} + \xi_i + \xi_j + \xi_s + \iota_{ijs}$$

Kalina Manova, Oxford
Trade Partners

- Country $j$ exports to more destinations in a financially more vulnerable sector $s$ if $j$ is more financially developed
  - Firms require outside capital for all their cross-border operations, and use limited financial resources to maximize total profits from global sales
  - Firms observe a pecking order of export destinations, and financial development allows firms to go further down this pecking order

- Estimating equation

$$I_{js} = \mu_0 + \mu_1 \text{FinDev}_t \cdot \text{ExtFin}_s - \mu_2 \text{FinDev}_t \cdot \text{Tang}_s + \mu_j + \mu_s + \epsilon_{js}$$
Export Volumes

- Aggregate firm-level exports from country $j$ to country $i$ in a financially more vulnerable sector $s$ are higher if $j$ is more financially developed

$$M_{ijs} = \left( \frac{\tau_{ij} c_{js}}{aP_{is}} \right)^{1-\varepsilon} \theta_s Y_i N_j s V_{ijs} E_{ijs}$$

$$V_{ijs} = \begin{cases} \int_{a_L}^{a_{ijs}} a^{1-\varepsilon} dG(a) & \text{for } a_{ijs} \geq a_L \\ 0 & \text{otherwise} \end{cases}$$

$$E_{ijs} = \frac{\left[ \int_{a_L}^{a_{ijs}} a^{1-\varepsilon} dG(a) + \int_{a_{ijs}}^{a_{ijs}} \beta_{ijs}(a) a^{1-\varepsilon} dG(a) \right]}{\int_{a_L}^{a_{ijs}} a^{1-\varepsilon} dG(a)}$$

- Estimating equation

$$m_{ijs} = \zeta_0 + n_{js} + w_{ijs} + e_{ijs} + (\varepsilon - 1)p_{is} - \mu d_{ij} + \zeta_j + \zeta_i + \zeta_s + u_{ijs}$$
Outline

1. Introduction and motivation
2. Theoretical framework
3. Data and estimation strategy
4. Results
5. Conclusion
Data

- 107 countries, 27 sectors, 1985-1995

- Financial development
  - Private credit (Beck et al 2000), repudiation of contracts, accounting standards, risk of expropriation (La Porta et al 1998)

- Trade data
  - Bilateral exports by sector (Feenstra 2000)
Sectors’ Financial Vulnerability

- Two commonly used indicators of sectors’ technologically determined level of financial vulnerability
  - Liquidity needs: external finance dependence
  - Availability of collateral: asset tangibility

- Measures constructed from data on all publicly traded US-based companies from Compustat
  - Standard practice in the literature
  - Median firm’s value of 1980-1999 average across firms in a sector
  - Measures and sector ordering stable over time
Three advantages to constructing sector measures from US firm-level data

1. Sophisticated financial systems, so that the measure reflect firms’ optimal choice over external financing and asset structure
2. Sector measures are not endogenous to countries’ level of financial development (possible downward bias)
3. Identification requires that ranking of sectors, not levels, remain stable across countries
Trade Volume Decomposition

- Decompose the effect of capital market friction on export volume
  - Selection into domestic production $n_{js}$
  - Selection into exporting $w_{ijs}$
  - Firm-level exports $e_{ijs}$

- Estimating equation
  \[ m_{ijs} = \zeta_0 + n_{js} + w_{ijs} + e_{ijs} + (\epsilon - 1)p_is - \mu d_{ij} + \zeta_j + \zeta_i + \zeta_s + u_{ij} \]

- Regression without $n_{js}$ and $w_{ijs}$ terms estimates the overall effect

- Controlling for the number of firms $n_{js}$ isolates the trade-specific effect
Two Stage Estimation

- Two challenges
  - $w_{ijs}$ and $e_{ijs}$ are not unobserved
  - selection bias due to unobserved trade costs

- Address both challenges with a two-stage structural procedure similar to Helpman et al (2008)
  1. Estimate the impact of financial frictions on the probability of exporting and use the predicted probability of exporting to infer the latent variable $z_{ijs}$, the extensive margin term $w_{ijs}$, and a Heckman-style selection correction
  2. Include $n_{ijs}$, imputed $w_{ijs}$ and Heckman correction in the regression for export volumes, so that the residual impact of financial frictions on trade reflects distortions to the intensive margin $e_{ijs}$

- Baseline second-stage MLE assumes normality of unobserved trade costs and Pareto distribution of firm productivity (relaxed in robustness checks)
Outline

1. Introduction and motivation
2. Theoretical framework
3. Data and estimation strategy
4. Results
5. Conclusion
### Bilateral Exports

Dependent variable: $m_{ijst}$, (log) bilateral exports by sector

Financial development measure: private credit

<table>
<thead>
<tr>
<th></th>
<th>Total effect of credit constraint</th>
<th>Controlling for selection into domestic production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin devt</td>
<td>0.167 (3.14)***</td>
<td>0.251 (4.25)***</td>
</tr>
<tr>
<td>Fin devt × Ext fin dep</td>
<td>1.752 (43.29)***</td>
<td>1.296 (28.31)***</td>
</tr>
<tr>
<td>Fin devt × Tang</td>
<td>-2.624 (-24.65)***</td>
<td>-2.130 (-16.41)***</td>
</tr>
<tr>
<td>(Log) # Establish</td>
<td></td>
<td>0.318 (40.47)***</td>
</tr>
<tr>
<td>(Log) Output</td>
<td></td>
<td>0.316 (18.52)***</td>
</tr>
</tbody>
</table>

Controls: LGDPE, LGDPI, LDIST, Exp, Imp, Sector FE

$R^2$ | 0.57 | 0.57 | 0.59

# observations | 861,380 | 621,333 | 703,743

# exp-imp clusters | 9343 | 7867 | 8031
### Bilateral Exports: Robustness

**Dependent variable:** $m_{ijst}$, (log) bilateral exports by sector

<table>
<thead>
<tr>
<th></th>
<th>Private credit</th>
<th>Repudiation of contracts</th>
<th>Accounting standards</th>
<th>Risk of expropriation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fin devt measure:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fin devt</td>
<td>0.225</td>
<td>-0.019</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.64)***</td>
<td>(-0.24)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fin devt × Ext fin dep</td>
<td>1.343</td>
<td>1.101</td>
<td>0.576</td>
<td>0.025</td>
</tr>
<tr>
<td></td>
<td>(29.01)***</td>
<td>(15.38)***</td>
<td>(19.34)***</td>
<td>(11.46)***</td>
</tr>
<tr>
<td>Fin devt × Tang</td>
<td>-2.204</td>
<td>-1.334</td>
<td>-1.488</td>
<td>-0.071</td>
</tr>
<tr>
<td></td>
<td>(-16.64)***</td>
<td>(-6.64)***</td>
<td>(-15.78)***</td>
<td>(-11.12)***</td>
</tr>
<tr>
<td>(Log) # Establish</td>
<td>0.321***</td>
<td>0.314***</td>
<td>0.302***</td>
<td>0.306***</td>
</tr>
</tbody>
</table>

**Controls:** LGDPE, LGDPI, LDIST, Exp, Imp, Sector FE, CPI, CPI × Sector FE, K, H, N, LGDPCE, Institutions, and Interactions

|                  |                |                          |                      |                       |
|------------------|----------------|--------------------------|                      |                       |
| $R^2$            | 0.58           | 0.59                     | 0.59                 | 0.61                  |
| # observations   | 579,485        | 428,444                  | 436,931              | 396,112               |
| # exp-imp clusters | 7452           | 4130                     | 4132                 | 3374                  |

Kalina Manova, Oxford
## Probability of Exporting

**Dependent variable:** $T_{ijst}$, indicator variable equal to 1 when positive bilateral exports in a sector

<table>
<thead>
<tr>
<th>Fin devt measure:</th>
<th>Private credit</th>
<th>Repudiation of contracts</th>
<th>Accounting standards</th>
<th>Risk of expropriation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin devt</td>
<td>-0.110</td>
<td>0.320</td>
<td>0.022</td>
<td>0.435</td>
</tr>
<tr>
<td></td>
<td>(-2.09)**</td>
<td>(19.51)**</td>
<td>(17.46)**</td>
<td>(21.06)**</td>
</tr>
<tr>
<td>Fin devt × Ext fin dep</td>
<td>1.029 (19.86)**</td>
<td>0.320 (19.51)**</td>
<td>0.022 (17.46)**</td>
<td>0.435 (21.06)**</td>
</tr>
<tr>
<td>Fin devt × Tang</td>
<td>-0.823 (-8.23)**</td>
<td>-0.537 (-14.00)**</td>
<td>-0.028 (-8.79)**</td>
<td>-0.522 (-11.08)**</td>
</tr>
<tr>
<td>(Log) # Procedures</td>
<td>0.007***</td>
<td>0.007***</td>
<td>0.007***</td>
<td>0.007***</td>
</tr>
<tr>
<td>(Log) # Days</td>
<td>4.682***</td>
<td>4.972***</td>
<td>7.388***</td>
<td>4.966***</td>
</tr>
<tr>
<td>(Log) Cost</td>
<td>0.369***</td>
<td>0.382***</td>
<td>0.403***</td>
<td>0.383***</td>
</tr>
</tbody>
</table>

**Controls:**
- LGDPE, LGDPI, LDIST, Exp, Imp, Year, Sector FE, CPI × Sector FE
- K, H, N, LGDPCE, Institutions, and Interactions

**Pseudo $R^2** | 0.51 | 0.51 | 0.51 | 0.51
**# observations** | 1,079,865 | 1,103,274 | 906,390 | 1,103,274
**# exp-imp clusters** | 3965 | 3965 | 3259 | 3965
## Product Variety

Dependent variable: $x_{ijst}$, (log) # SITC-4 products exported bilaterally by sector

<table>
<thead>
<tr>
<th>Fin devt measure:</th>
<th>Private credit</th>
<th>Repudiation of contracts</th>
<th>Accounting standards</th>
<th>Risk of expropriation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin devt</td>
<td>-0.089</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-3.17)***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fin devt × Ext fin dep</td>
<td>0.335***</td>
<td>0.176***</td>
<td>0.008***</td>
<td>0.190***</td>
</tr>
<tr>
<td></td>
<td>(16.37)***</td>
<td>(18.45)***</td>
<td>(11.74)***</td>
<td>(16.32)***</td>
</tr>
<tr>
<td>Fin devt × Tang</td>
<td>-0.400***</td>
<td>-0.272***</td>
<td>-0.014***</td>
<td>-0.268***</td>
</tr>
<tr>
<td></td>
<td>(-6.07)***</td>
<td>(-10.10)***</td>
<td>(-7.14)***</td>
<td>(-8.00)***</td>
</tr>
<tr>
<td>(Log) # Establish</td>
<td>0.092***</td>
<td>0.090***</td>
<td>0.091***</td>
<td>0.091***</td>
</tr>
<tr>
<td>Importer’s CPI</td>
<td>0.008***</td>
<td>0.008***</td>
<td>0.009***</td>
<td>0.008***</td>
</tr>
</tbody>
</table>

Controls: LGDPE, LGDPI, LDIST, Exp, Imp, Year, Sector FE, CPI × Sector FE K, H, N, LGDPCE, Institutions, and Interactions

$R^2$ | 0.64 | 0.64 | 0.65 | 0.64
--- | --- | --- | --- | ---
# observations | 428,444 | 436,931 | 396,112 | 436,931
# exp-imp clusters | 4130 | 4132 | 3374 | 4132
## Trade Partners

Dependent variable: $I_{js}$, number of trade partners by sector

<table>
<thead>
<tr>
<th>Fin devt measure:</th>
<th>Private credit</th>
<th>Repudiation of contracts</th>
<th>Accounting standards</th>
<th>Risk of expropriation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin devt</td>
<td>-2.23</td>
<td>-0.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-0.46)</td>
<td>(-0.14)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fin devt × Ext fin dep</td>
<td><strong>41.94</strong></td>
<td><strong>24.04</strong></td>
<td><strong>9.57</strong></td>
<td><strong>0.59</strong></td>
</tr>
<tr>
<td></td>
<td>(13.44)***</td>
<td>(3.66)***</td>
<td>(4.37)***</td>
<td>(3.58)***</td>
</tr>
<tr>
<td>Fin devt × Tang</td>
<td><strong>-17.04</strong></td>
<td><strong>-22.68</strong></td>
<td><strong>-15.11</strong></td>
<td><strong>-0.87</strong></td>
</tr>
<tr>
<td></td>
<td>(-2.12)**</td>
<td>(-1.55)</td>
<td>(-3.90)***</td>
<td>(-2.72)***</td>
</tr>
<tr>
<td>LRGDPE</td>
<td><strong>19.99</strong></td>
<td><strong>111.00</strong></td>
<td><strong>117.36</strong></td>
<td><strong>227.55</strong></td>
</tr>
<tr>
<td></td>
<td>(3.88)***</td>
<td>(2.56)***</td>
<td>(2.67)***</td>
<td>(5.42)***</td>
</tr>
</tbody>
</table>

Controls: Exporter, Year and Sector Fixed effects

K, H, N, LGDPCE, Institutions, and Interactions

$R^2$ | 0.90 | 0.87 | 0.87 | 0.88 | 0.87

# observations | 26,900 | 12,170 | 12,440 | 10,088 | 12,440

# exporters | 107 | 42 | 42 | 34 | 42
### Imputed Firm Exports

Dependent variable: $m_{ijst}$, (log) bilateral exports by sector (MLE)

<table>
<thead>
<tr>
<th>Fin devt measure:</th>
<th>Private credit</th>
<th>Repudiation of contracts</th>
<th>Accounting standards</th>
<th>Risk of expropriation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fin devt</td>
<td>0.028</td>
<td>0.369</td>
<td>0.012</td>
<td>0.277</td>
</tr>
<tr>
<td></td>
<td>(0.34)</td>
<td>(10.22)***</td>
<td>(4.71)***</td>
<td>(5.80)***</td>
</tr>
<tr>
<td>Fin devt × Ext fin dep</td>
<td>0.409***</td>
<td>-0.803***</td>
<td>0.012***</td>
<td>0.277***</td>
</tr>
<tr>
<td></td>
<td>(4.07)***</td>
<td>(-3.72)***</td>
<td>(4.71)***</td>
<td>(5.80)***</td>
</tr>
<tr>
<td>Fin devt × Tang</td>
<td>-0.803***</td>
<td>-1.182***</td>
<td>-0.052***</td>
<td>-1.123***</td>
</tr>
<tr>
<td></td>
<td>(-3.72)***</td>
<td>(-11.40)***</td>
<td>(-7.78)***</td>
<td>(-9.05)***</td>
</tr>
<tr>
<td>delta (from $w_{ij}$)</td>
<td>0.806***</td>
<td>0.820***</td>
<td>0.758***</td>
<td>0.817***</td>
</tr>
<tr>
<td></td>
<td>(7.91)***</td>
<td>(8.25)***</td>
<td>(8.55)***</td>
<td>(8.24)***</td>
</tr>
<tr>
<td>etaijs</td>
<td>0.909</td>
<td>0.877</td>
<td>0.874</td>
<td>0.875</td>
</tr>
<tr>
<td></td>
<td>(9.63)***</td>
<td>(9.49)***</td>
<td>(10.86)***</td>
<td>(9.55)***</td>
</tr>
<tr>
<td>(Log) # Establish</td>
<td>0.305***</td>
<td>0.294***</td>
<td>0.297***</td>
<td>0.297***</td>
</tr>
<tr>
<td>Importer’s CPI</td>
<td>0.004***</td>
<td>0.004***</td>
<td>0.005***</td>
<td>0.004***</td>
</tr>
</tbody>
</table>

Controls: LGDPE, LGDPI, LDIST, Exp, Imp, Year, Sector FE, CPI × Sector FE, K, H, N, LGDPCE, Institutions, and Interactions

# observations: 398,726
# exp-imp clusters: 3661

Kalina Manova, Oxford
Decomposition

- **Isolating trade-specific effect**
  - Compare the effect with and without the control for the number of establishments
  - Around 75–80% of the total effect of credit market imperfections on exports is independent of their effect on output

- **Extensive and intensive margins of trade**
  - Credit constraints significantly affect firm selection into exporting in terms of export probability, number of varieties shipped, and number of markets served
  - Second stage MLE suggests exporting firms from financially developed countries earn significantly larger foreign revenues on average
  - 30–40% of the trade-specific effect of financial development on export volumes results from extensive margin, 60–70% due to intensive margin
  - Implies credit constraints in the financing of both fixed and variable export costs
Economic Magnitudes

- When financial development increases by one standard deviation, the sector at the 75th percentile by external finance dependence ...
  - increases exports by 15 percentage points
  - increases the probability of positive exports by 14 percentage points
  - increases export product variety by 5 percentage points
  - increases firm level exports by 6 percentage points
  
  … more than the sector at the 25th percentile

- Financial development has similar magnitude of effect as human capital endowment and larger effect than the physical capital stock
Outline

1. Introduction and motivation
2. Theoretical framework
3. Data and estimation strategy
4. Results
5. Conclusion
Conclusion

- Weak financial institutions lead to trade distortions, especially in financially vulnerable sectors
  - Fewer destinations markets
  - Reduced export product variety
  - Lower aggregate trade volumes

- Export activity disproportionately more affected by credit constraints
  - Only 20-25% of the disruptions to trade flows due to reductions in total output

- Credit constraints affect both the extensive and the intensive margins of trade