The Impact of Credit Constraints on Exporting Firms: Evidence from the Provision and Subsequent Removal of Subsidized Credit

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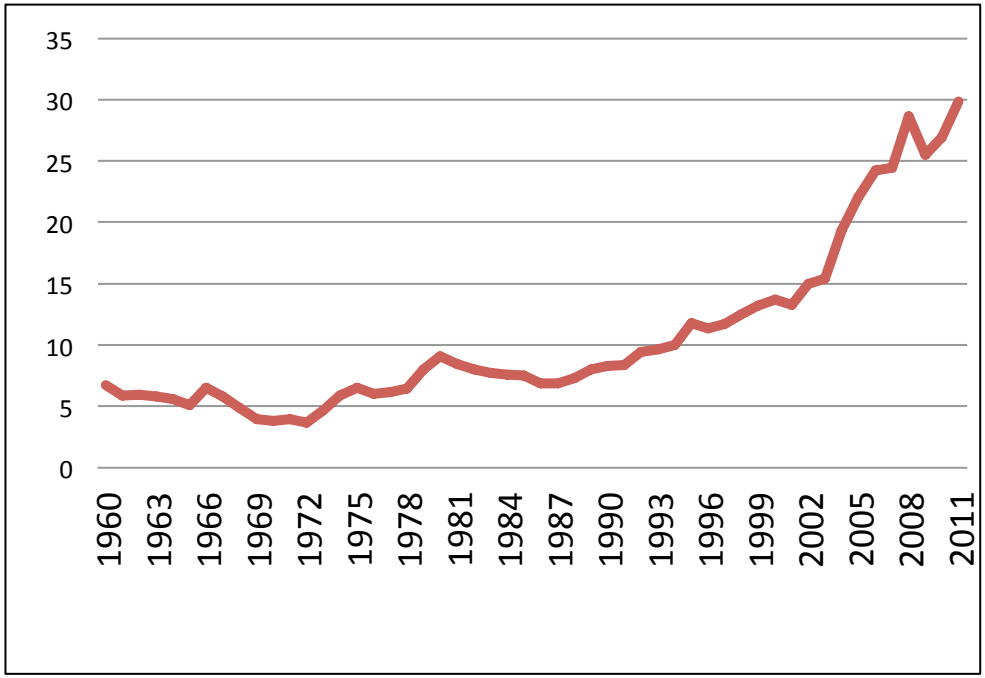
Motivation

- Government provision of subsidized credits for exporters to promote export oriented growth
- Trade – Finance linkage
- Export has become a very significant component of the GDP



Literature

- Impact of credit constraints on firms (Banerjee and Duflo, (2008))
- Manova (2011) uses a model of credit constrained heterogeneous firms (pioneered by Melitz (2003))
  - Countries with higher financial development export more
- Mull (2008) incorporates both internal and external credit constraints in Melitz (2003) framework
  - Extensive and Intensive margins of trade are affected by credit constraints
- Firms level study
  - Paravisini, Rappoport, Schnabl and Wolfenzon (2011): use firm level data from Peru

Our study

- We exploit a *Natural Experiment* by exploiting a change in government policy for subsidized credit

- Government of India mandates that 40 % of net bank credit should be for the priority sector (this limit is 32 % for foreign banks)
  - This can be in the form of either direct finance – short, medium or long term loans or indirect finance – credit lines made available to State Industrial Development Corporations for financing small firms
  - Priority sector includes small scale industrial units (SSI)

Natural Experiment

- Policy Change
  - Prior to 1998 firms with investment in plant and machinery less than Rupees 6.5 million were classified as SSI hence eligible for priority sector lending
  - In 1998, the government revised the definition of SSI – all firms with investment in plant and machinery less than Rupees 30 million were now classified as SSI
  - In 2000, this policy was reversed and now all firms with investment in plant and machinery less than Rupees 10 million were classified as SSI

Data

- Firm level data is from Prowess database from the Centre for Monitoring the Indian Economy (CMIE)
  - More than 10 years of time series data
  - Data contains information on firms production, sales, export earnings,, expenditure on capital goods, raw materials, etc.
  - It also contains data on financial variables: bank borrowing, other financial institutional borrowing, secured and unsecured debt, etc.
- We use firm level data from 1996 to 2006 for firms that have exported through out the period

Estimation Strategy: diff-in-diff

Credit Expansion

$$\ln(y)_{it} - \ln(y)_{it-1} = \alpha_0 + \sum_t \alpha_t Time_t + \beta_1 SizeDummy1_i$$
$$+ \beta_2 YearDummy1_t + \beta_3 SizeDummy1_i \times YearDummy1_t + X_{it\gamma} + \varepsilon_{it}$$

where *SizeDummy1* = 1 if the firm is classified in the priority sector in 1998

Credit Contraction

$$\ln(y)_{it} - \ln(y)_{it-1} = \alpha_0 + \sum_t \alpha_t Time_t + \beta_1 SizeDummy2_i$$
$$+ \beta_2 YearDummy2_t + \beta_3 SizeDummy2_i \times YearDummy2_t + X_{it\gamma} + \varepsilon_{it}$$

where *SizeDummy2* = 1 if the firm is declassified in the priority sector in 2000

Credit Expansion (1990-2000): Effect on firms newly made part of priority sector. Both large and small firms as control

OLS w/ Industry Dummies	Total Bank Borrowings	Total Borrowing	Forex earnings – Goods	Forex Earnings - Total
SizeDummy1*YearDummy1	0.19***	0.17**	0.21**	0.19**
	(3.59)	(3.01)	(2.99)	(2.82)
SizeDummy1	-0.04	-0.04	-0.13***	-0.11**
	(-1.39)	(-1.22)	(-3.66)	(-2.68)
YearDummy1	-0.09**	-0.13***	-0.16***	-0.17***
	(-3.48)	(-6.29)	(-5.47)	(-5.81)
No. of Obvs.	9259	9609	8970	9140

Credit Expansion (1990-2000): Effect on firms newly made part of priority sector. Only small firms always part of priority sector as control

OLS w/ Industry Dummies	Total Bank Borrowings	Total Borrowing	Forex earnings – Goods	Forex Earnings - Total
SizeDummy1*YearDummy1	0.39 (1.46)	0.44 (1.94)	0.25* (2.34)	0.28** (3.01)
SizeDummy1	-0.09 (-1.58)	-0.10 (-1.75)	-0.18* (-2.60)	-0.18* (-2.22)
YearDummy1	-0.30 (-0.97)	-0.39 (-1.58)	-0.31** (-2.97)	-0.37*** (-4.42)
No. of Obvs.	902	981	908	941

Credit Expansion (1990-2000): Effect on firms newly made part of the priority sector. Only large firms never part of priority sector as control

OLS w/ Industry Dummies	Total Bank Borrowings	Total Borrowing	Forex earnings – Goods	Forex Earnings - Total
SizeDummy1*YearDummy1	0.21***	0.20***	0.25***	0.22**
	(3.59)	(3.84)	(3.74)	(3.49)
SizeDummy1	-0.07	-0.07*	-0.18***	-0.15***
	(-1.93)	(-2.55)	(-5.57)	(-3.95)
YearDummy1	-0.09**	-0.12***	-0.16***	-0.17***
	(-3.16)	(-6.34)	(-5.45)	(-5.76)
No. of Obvs.	9100	9425	8792	8954

Credit Contraction (1999-2006): Effect on firms removed from the priority sector. Both large and small firms as control

OLS w/ Industry Dummies	Total Bank Borrowings	Total Borrowing	Forex earnings – Goods	Forex Earnings - Total
SizeDummy2*YearDummy2	-0.12*	-0.09	-0.05	-0.03
	(-2.18)	(-1.87)	(-0.56)	(-0.35)
SizeDummy2	0.14**	0.15***	0.16*	0.15*
	(2.97)	(4.01)	(2.19)	(2.28)
YearDummy2	0.02	0.02	0.05	0.05
	(0.85)	(1.16)	(1.83)	(1.97)
No. of Obvs.	8550	9089	8872	9023

Credit Contraction (1999-2006): Effect on firms removed from the priority sector. Firms with investment in plant and machinery below Rs 10 million as control

OLS w/ Industry Dummies	Total Bank Borrowings	Total Borrowing	Forex earnings – Goods	Forex Earnings - Total
SizeDummy2*YearDummy2	-0.24 (-1.15)	-0.30 (-1.98)	-0.29 (-1.87)	-0.22 (-1.68)
SizeDummy2	0.12 (0.49)	0.24 (1.63)	0.26 (1.85)	0.23 (1.87)
YearDummy2	0.12 (0.53)	0.16 (1.00)	0.21 (1.90)	0.21 (1.99)
No. of Obvs.	511	588	605	632

Credit Contraction (1999-2006):Effect on firms removed from priority sector. Firms with investment in plant and machinery above Rs 30 million as control

OLS w/ Industry Dummies	Total Bank Borrowings	Total Borrowing	Forex earnings – Goods	Forex Earnings - Total
SizeDummy1*YearDummy2	-0.10 (-1.69)	-0.06 (-1.29)	-0.03 (-0.38)	-0.01 (-0.10)
SizeDummy2	0.12 * (2.62)	0.12 ** (3.06)	0.15 (1.90)	0.15 (1.93)
YearDummy2	0.02 (0.68)	0.02 (1.02)	0.05 (1.70)	0.05 (1.81)
No. of Obvs.	8430	8942	8696	8839

Key Findings

- Expansion of subsidized credit in 1998
  - Increased the total bank borrowings of the beneficiary firms by approximately 20 percent
  - Increased the export earnings of the beneficiary firm by approximately 21 percent

- Contraction of subsidized credit in 2000
  - No impact on the bank borrowings or the export earnings of the firms of the firm

Policy Implications

- Financial Constraints affect the firms ability to export
- To promote export oriented growth strategy financial sector reforms that provide easy access to credit is very imperative