

Financing SME Exporters

**SME FDI Workshop
September 21, 2006**

**BETTER
UNDERSTANDING**



**SME
FINANCING**

**SME FINANCING
DATA INITIATIVE**

**Peter Hall
Export Development Canada
and
Brad Belanger
Industry Canada**



Government of Canada
Gouvernement du Canada

Canada

Research Questions



- Primary Issue
 - To what extent do Canadian SME exporter firms face disproportionate (lack of) access to finance?
- Ancillary Goals
 - Document breakdowns of the attributes of Canadian exporter SMEs.

Agenda



- What does the research literature say about exporters' access to financing, insurance?
- What does the FDI data say about attributes of SME exporters?
- What does the FDI data say about SME exporters' access to financing, insurance?

The Troublesome Definition of “Financing Gaps”



- The term “financing gap” means different things to different people: popular media (shortage); policy makers (results from choices); theoretical economists (results from imperfections).
- **OECD (2006) credit rationing exists if:**
 - a) among loan applicants who appear to be identical some receive credit while others do not; or,
 - b) there are identifiable groups in the population that are unable to obtain financing at any price.
- Focus here is on definition (b): do exporters (or some segment of firms among exporters) comprise an identifiable group of firms that are unable to access financing?

BDC Postulated Gaps (Based on focus group data)



<p style="text-align: center;">Perceived Gaps in the Debt Market</p>	<p style="text-align: center;">Perceived Gaps in the Venture Capital Market</p>
<ul style="list-style-type: none"> •A size gap is postulated such that business owners who seek small loans perceive that their borrowing needs are too small to be of interest to institutional lenders. 	<ul style="list-style-type: none"> •An early stage gap, which reflects the belief that small early-stage companies are not the strategic focus of most private investors.
<ul style="list-style-type: none"> •A risk gap is claimed, according to which lenders do not price loans to reflect risk (rather, they reject loan applications if risk exceeds a particular threshold or if insufficient collateral is available). 	<ul style="list-style-type: none"> •A dollar gap, according to which Canada was said to rank tenth among developed countries in terms of venture capital funds raised per capita.
<ul style="list-style-type: none"> •A flexibility gap is described in that some SME owners claim that financial institutions do not provide flexible terms and conditions on their loans. 	<ul style="list-style-type: none"> •An institutional gap that reflects the lack of involvement in the venture capital sector of pension funds, mutual funds, and other such institutions in Canada.
<ul style="list-style-type: none"> •A knowledge gap is asserted, that "financial institutions do not understand knowledge-based businesses. 	<ul style="list-style-type: none"> •A smaller appetite for IPOs in Canada compared with the US.

•Source: BDC, 2001.

What to do about “gaps” ...



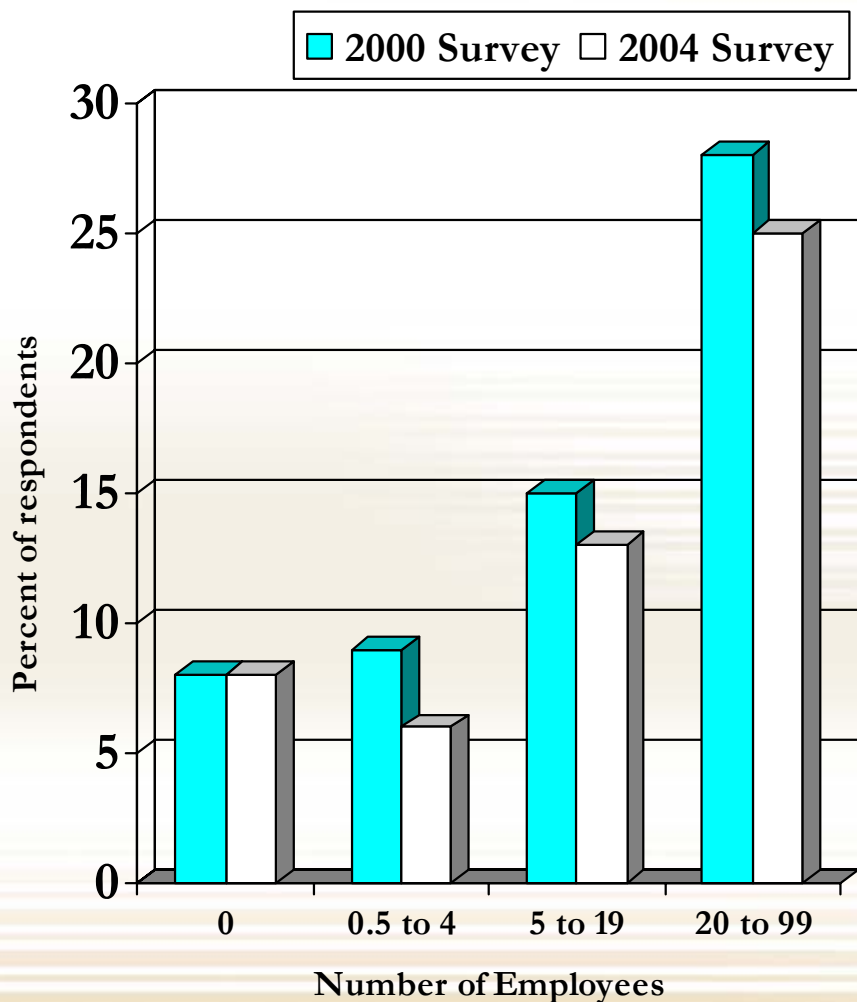
- Brierley, 2001:

“Public sector initiatives to support the financing of ...small firms ... may be justified if market imperfections mean that the private sector does not provide capital to firms on competitive terms. ... [However] In the absence of market failure, such initiatives may themselves cause distortions by subsidizing, at considerable public cost, non-viable firms which are not attracting enough capital because they do not offer good investment opportunities ...”



Attributes of Canadian SME Exporter Firms

“Did the business sell or export any of its goods or services outside Canada during the past 12 months?”



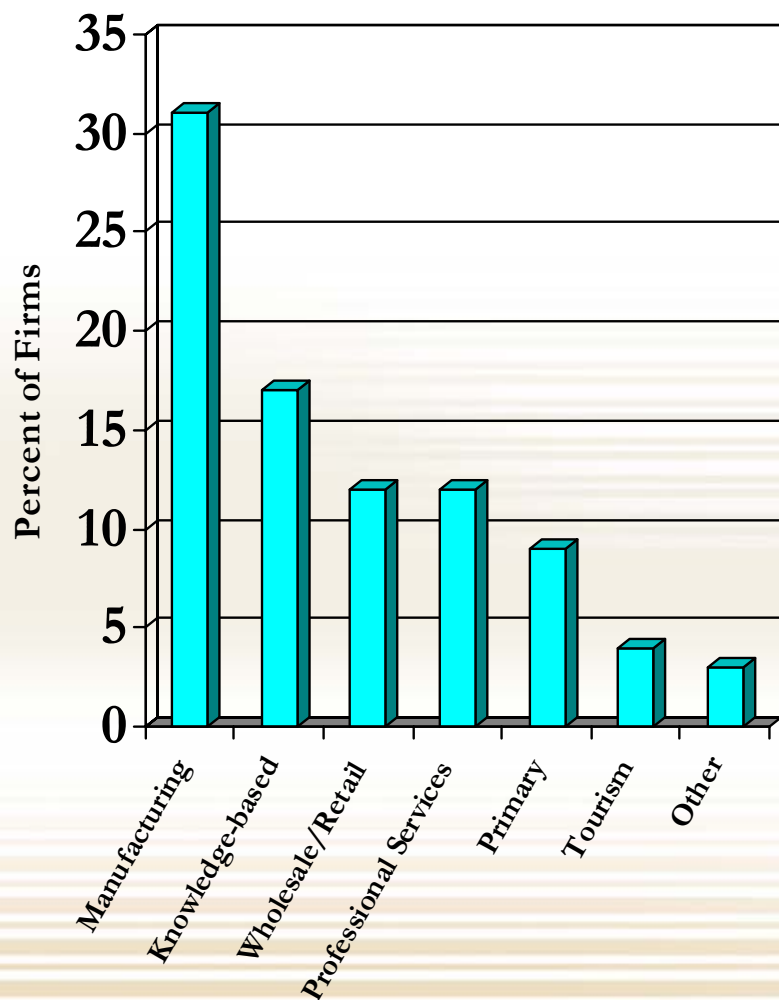
- Large firms export more often than small ones
BUT
- The vast majority of Canadian SMEs are small so small and medium-sized enterprises make a significant contribution to this export market, accounting for 85 percent of exporter firms. These smaller firms may be less able to raise financing than larger firms.

Exporters are larger ...



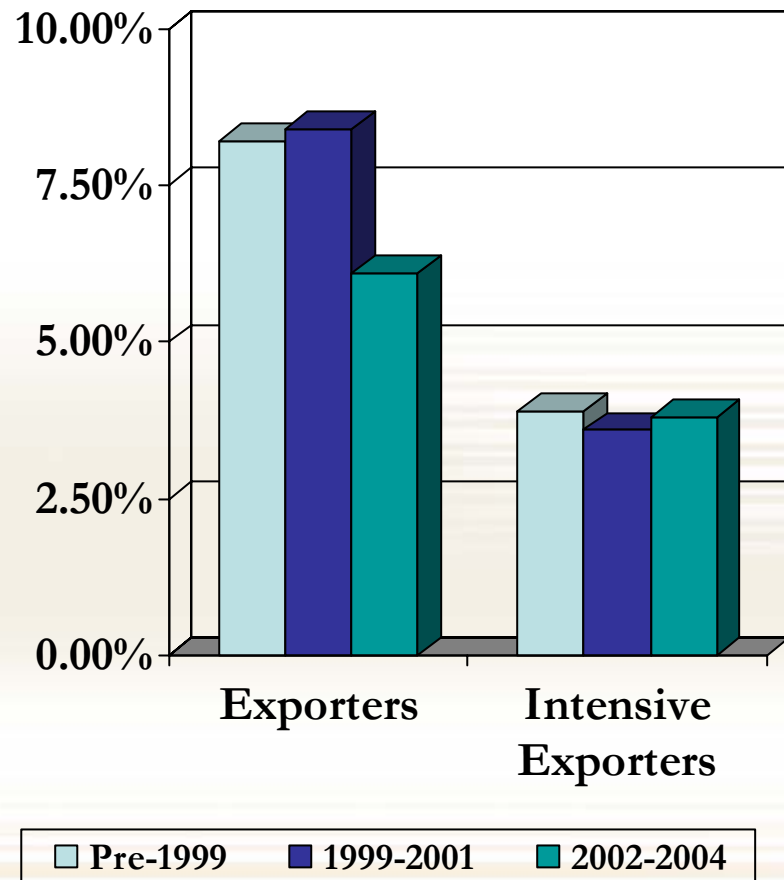
		SMEs that Export (Average \$)	Other SMEs (Average \$)
Revenue	Sales	1,196,453	505,761
	Total Revenue	1,221,842	552,052
Direct Expenses		849,584	344,433
Net Pre-Tax Profit		72,255	NA
Assets	Current	404,287	177,187
	Total	759,717	495,485
Liabilities	Current	231,321	105,688
	Total	409,523	241,237
Retained Earnings		176,697	131,308
Total Equity	Total	350,195	254,248

“Did the business sell or export any of its goods or services outside Canada during the past 12 months?”



- Exporting is more likely among manufacturers and knowledge-based enterprises
- HOWEVER**
- A high proportion of Canadian SMEs are in the service sectors, which may be less able to raise financing.
 - Because so many Canadian SMEs are in services sectors, absolute number of exporter firms is high for services sectors.

Export Propensity and Firm Age



- New firms (those started since 2002) are less likely to be exporters

HOWEVER

- New firms are just as likely as more established firms to be “intensive exporters,” those that derive more than 25% of sales from exports.
- New firms generally face greater difficulty with raising financing.

Growth-orientation & Innovation



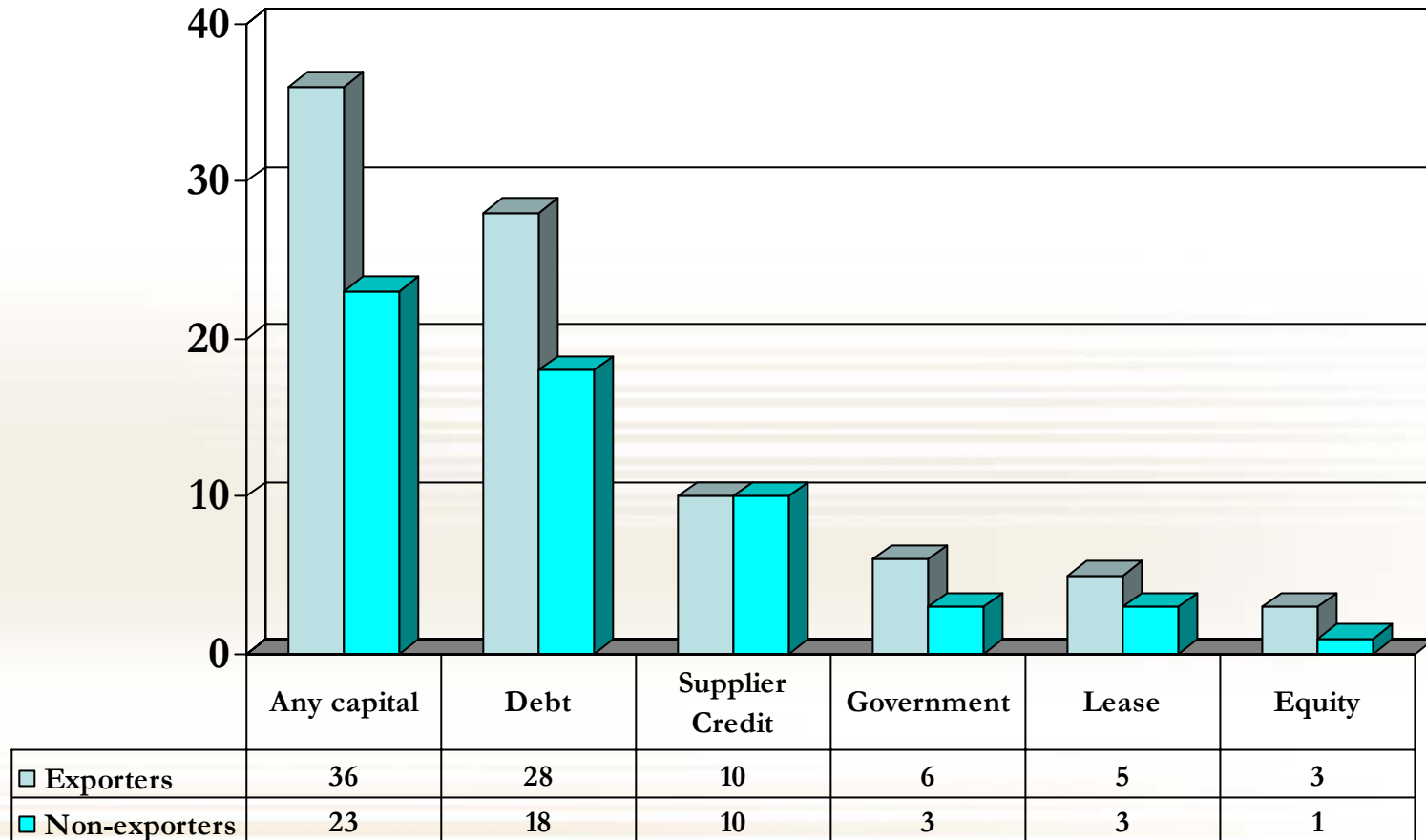
- Exporters are **more likely to report an intention of expand** (*“During the next two years, do you intend to expand the size and scope of your business?”*)
 - 66% of exporters replied in the affirmative
 - ➔ compared to 37% of non-exporters
- Exporters are **more likely to invest in R&D** (*“What percentage of total investment expenditure was devoted to research and development?”*)
 - 56% of exporters reported investments in R&D
 - ➔ compares with 27% of non-exporters

Perceived Obstacles to Growth

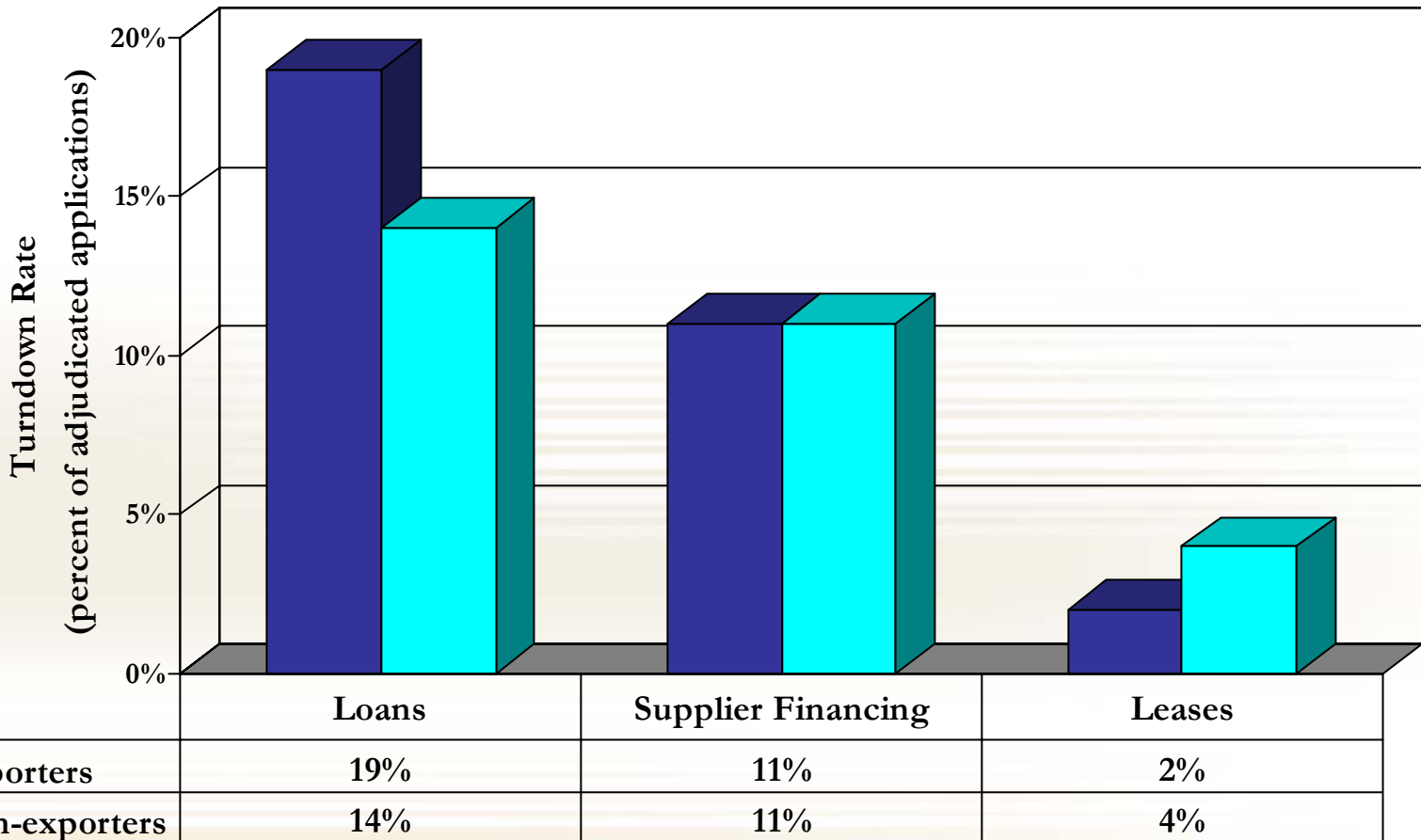


Obstacles to Growth	Non-exporters	Exporters
Levels of taxation	53%	55%
Insurance rates	41%	44%
Instability of consumer demand	40%	42%
Low profitability	39%	38%
Finding qualified labour	49%	36%
Obtaining financing	32%	36%
Government regulations	36%	32%
Management capacity	16%	22%

Financing Demands: Exporters are more likely to seek capital.



Exporters more likely to have applications for loans turned down





Putting it together

SME FDI

Exporters' Access to Capital



- On the one hand
 - Exporters are larger (+), but some are small (-)
 - Exporters, in **percentage** terms (+), tend to be in sectors where collateral is available – but not in terms of **total numbers** of firms (-)
 - Exporters can be established firms (+) or new firms (-)
 - Exporters tend to be growth oriented (- , according to Binks & Ennew) and spend relatively high amounts on R&D (-)
 - Exporters tend to be seeking working capital (+ for established firms, - for new firms, firms without collateral)
- Need to examine access to capital while controlling for the above factors

Additional Potential Lending Criteria



Criterion	Measure	Non- exporters	Exporters
Character	Length of relationship with financial institution	11.3	9.8
	Age of firm	20.2	20.4
	Age of owner	49.2	50.0
Capacity	Sales revenues	See Previous Slide	
	Profits		
	Full-time equivalent employees	3.5	7.8
Capital	Balance sheet data	See Previous Slide	
	Financial ratios		
Conditions	Industry sector		
Collateral	Availability of personal assets for collateral	41.8%	42.3%
	Availability of commercial assets for collateral	39.6%	46.2%
	Cosignature requirements	6.8%	8.2%



Methodology

Overall View of Methodology



- Have large number of potential determinants of creditworthiness (independent variables in credit scoring models)
- Used principal components analysis to reduce these to a manageable set of potential independent variables in derivation of credit scoring models
 - Trade off with respect to data availability (want to maximize the number of observations) vs. properties of variable
- Used logistic regression with dependent variable =0 if loan is approved, =1 if turned down
 - (a) for term loan applications
 - (b) operating loan applications
 - to estimate equivalent of credit scoring models.

Data Reduction



Variable	Factor Loadings (suppressed for ease of interpretation if less than 0.4)				
	1	2	3	4	5
Experience of primary owner	0.75				
Length of FI relationship	0.73				
Age of owner	0.71				
Year started trading:=1 if > 2002	-0.64				
Full-time equivalent employees		0.86			
Total Revenues		0.86			
Collateral: Personal Property Required			0.76		
Collateral: Commercial Property Required			0.62		
Co-signature Required			0.52		
Number of loan account managers				0.87	
Debt to Assets Ratio					0.78
R&D Expenditure >20%					0.63

Operating Loans



	Base Model		
	Coefficient Estimate	p-value	Exp(B)
Industry Sector		0.181	
Primary	-0.88	0.179	0.41
Construction	-0.44	0.444	0.65
Manufacturing	-0.15	0.782	0.86
Wholesale	-0.73	0.178	0.48
Finance etc.	-0.20	0.863	0.82
Professional Services	-0.75	0.171	0.47
Accommodation, food, etc	0.54	0.384	1.71
Other services	-0.18	0.732	0.83
Personal Collateral	0.64	0.007	1.90
Commercial Collateral	0.06	0.822	1.06
Co-signature	1.28	0.000	3.61
Urban location (vs Rural)	0.49	0.107	1.63
No R&D Investment	-0.38	0.128	0.68
Intensive R&D Investment	0.71	0.058	2.03
Full-time equivalent employees	-0.03	0.017	0.97
Constant	-1.90	0.001	0.15
Nagelkerke R ²	0.149	0.000	
Cox & Snell R ²	0.086		
Hosmer/Lemeshow		0.844	
In-sample prediction accuracy	84.3%		

Effect of Exporting



- Added categorical variable that connoted four types of firms:
 - firms that had started trading since January 2003 (**start-ups**) and that also reported **exporting**;
 - firms that had started trading since January 2003 (**start-ups**) but that **did not report exporting**;
 - firms that started trading prior to January 2003 (**non start-ups**) and that also reported **exporting**;
 - firms that started trading prior to January 2003 (**non-start-ups**) but that **did not report exporting**.

Operating Loans



	Expanded Model		
	Coefficient Estimate	p-value	Exp(B)
Industry Sector		0.145	
Primary	-1.15	0.075	0.32
Construction	-0.53	0.360	0.59
Manufacturing	-0.16	0.771	0.85
Wholesale	-0.90	0.100	0.41
Finance etc.	-0.32	0.784	0.72
Professional Services	-0.79	0.153	0.45
Accommodation, food, etc	0.33	0.596	1.39
Other services	-0.33	0.545	0.72
Personal Collateral	0.60	0.011	1.82
Commercial Collateral			
Co-signature	1.39	0.000	4.00
Urban location (vs Rural)			
No R&D Investment	-0.44	0.086	0.64
Intensive R&D Investment	0.72	0.058	2.06
Full-time equivalent employees	-0.03	0.023	0.97
Firm Category		0.004	
Start up / Exporter	1.45	0.004	4.27
Established / Exporter	-0.32	0.390	0.72
Start-up / Non-exporter	0.49	0.064	1.63
Constant	-1.52	0.003	0.22
Nagelkerke R ²	0.170	0.000	
Cox & Snell R ²	0.100		
Hosmer/Lemeshow		0.475	
In-sample prediction accuracy	84.4%		

Term Loans



	Base Model			Expanded Model		
	Coefficient Estimate	p-value	Exp(B)	Coefficient Estimate	p-value	Exp(B)
Industry Sector		0.000			0.000	
Primary	-0.16	0.794	0.85	-0.09	0.886	0.92
Construction	0.78	0.207	2.19	0.85	0.175	2.33
Manufacturing	1.54	0.006	4.66	1.55	0.007	4.72
Wholesale	1.49	0.008	4.45	1.57	0.006	4.80
Finance etc.	-18.67	0.999	0.00	-18.61	0.999	0.00
Professional Services	0.75	0.213	2.12	0.83	0.170	2.30
Accommodation, food, etc	2.14	0.000	8.50	2.17	0.000	8.78
Other services	0.56	0.366	1.75	0.63	0.315	1.88
Personal Collateral	-0.14	0.606	0.87			
Commercial Collateral	-0.31	0.268	0.74			
Co-signature	0.52	0.213	1.69			
Urban location (vs Rural)	0.17	0.554	1.19			
No R&D Investment	-0.36	0.198	0.70			
Intensive R&D Investment	0.59	0.225	1.80			
Full-time equivalent employees	-0.03	0.006	0.97	-0.03	0.007	0.97
Firm Category					0.471	
Start up / Exporter				0.98	0.160	2.66
Established / Exporter				-0.16	0.712	0.85
Start-up / Non-exporter				0.15	0.640	1.16
Constant	-2.22	0.000	0.11	-2.26	0.000	0.10
Nagelkerke R ²	0.166	0.000		0.172	0.000	
Cox & Snell R ²	0.088			0.092		
Hosmer/Lemeshow		0.092			0.110	
In-sample prediction accuracy	87.4%			86.9%		



Summary & Conclusions

Summary & Conclusions



- Empirical Results
 - Exporters tend to be large, older firms (typically relatively more creditworthy)
 - Proportion varies by sector with relatively high proportions of exporters among manufacturers, KBI but relatively high absolute numbers among services firms (typically less creditworthy)
 - Very few empirical studies of access to credit by exporters

Summary & Conclusions



• Empirical Results

- Exporters more likely than non-exporters to seek (all types of) financing.
- Overall, may be more likely to be turned down for loans, but need to control for other determinants of creditworthiness
- Doing so, using estimates of credit scoring models reveals that established exporter firms do not appear to face disproportionate difficulty with access to finance
- However, **new** firms that seek to export are much more likely to have loan applications turned down than **new** firms that do not seek to export:
 - consistent with Zahra's conception of problems faced by INVs