Loan Guarantee Schemes in the UK:

The Natural Experiment of the Enterprise Finance Guarantee and the 5 Year Rule

Abstract

Loan guarantee schemes have existed since 1953 (in the US) and are widely used throughout the world to provide financial support to smaller firms by guaranteeing loans from commercial banks. The UK government has been an active supporter of loan guarantees since 1981, and has a long track record of modifying its scheme to reflect changing market conditions and the financing needs of its SME sector. Arguably the two most significant changes occurred in 2008 when the 5 Year Rule on eligibility was removed and in 2009 when the long-standing Small Firms Loan Guarantee Scheme (SFLG) was replaced by the Enterprise Finance Guarantee Scheme (EFG). We treat the removal of the 5 Year Rule as a natural policy experiment and empirically question whether, on economic grounds, this was a sensible policy. Our findings suggest that the 5 Year Rule was a better policy choice with regard to employment but had no impact on sales growth.

Key Words: Small Business; Financing; Loan Guarantee Programmes; Experiment

JEL Classification: M21; G2; G3

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Introduction

Firms operate in increasingly competitive and challenging markets where owner-managers need to make difficult decisions in the obtaining and allocating of resources, including access to finance (Cowling et al., 2012; Keasey et al., 2015). The 'pecking order hypothesis' of Myers and Majluf (1984) suggests that firms will prefer debt to equity capital. Berger and Udell (1998), in their life-cycle theory of small business financing, predict and empirically validate that younger and smaller firms will tend to rely more on debt financing for information based reasons, and Diamond (1991) suggests that use of debt helps build credibility through bank monitoring. All these theories are widely supported empirically (Cole 2011, Bitler et al. 2001; La Rocca et al. 2009; Williams and Cowling, 2009). The inadequacy of internal funds to finance productive investment opportunities has led to the common concern raised in the small business literature that capital market imperfections exist and limit the availability of finance to small firms (Laeven, 2003; Love 2003; Cowling et al., 2012).

Credit rationing refers to the phenomenon where some borrowers receive loans while others do not, all else being equal (Stiglitz and Weiss, 1981; Wellalage and Locke, 2016; Mertzanis, 2016; Gu et al., 2016). The most widely used, and long-standing, public policy mechanism worldwide for supporting small firms is, the loan guarantee scheme. Concerns about the impact on SME growth arising from credit rationing have been used to support the case for loan guarantee programmes throughout the developed (Cowling and Mitchell, 2003; Riding, 2006) and developing, world (Klapper, 2006; Honaghan, 2008). The common feature of this type of intervention in debt capital markets has been the provision of loan security to

smaller firms who would not otherwise be able to obtain debt finance through conventional means (Riding, 1998). The major benefits of public financing initiatives have been identified as supporting growth that would not have been achieved in the absence of interventions and acting as a catalyst for broader economic development (Wonglimpiyarat, 2006). Well established examples of these schemes include the SBA 7(a) loan programme in the US, founded in 1953; the Canadian core guarantee programme (CSBFP), founded in 1961; and the UK Small Firm Loan Guarantee (SFLG) programme, founded in 1981. The most active loan guarantee program in the world is the Japanese Credit Supplementation System (Nitami and Riding, 2005).

The SFLG has been analysed in a series of empirical papers by Cowling (2007; 2008; 2010), Cowling and Siepel (2013) and Cowling and Mitchell (2003). Cowling and Mitchell (2003) found that default increases with the banks cost of capital (the loan rate) but not with the government premium. In addition, default was also found to increase in periods of macroeconomic growth, suggesting that in economic upturns the marginal SFLG borrower is of lower quality as banks relax their lending criteria. Cowling (2007) explored the role of loan commitments (overdrafts) on the UK SFLG as a means of insuring borrowers against future credit rationing. The key findings were; that *ex post* default had no bearing on initial credit volumes advanced, nor was there an obvious trade-off between loan margins (risk premia) and loan amount. But the availability of collateral for firms which wish to borrow debt under commitment contracts is absolutely crucial to their ability to raise substantial amounts of funding. Holding all else constant, not having any collateral reduces a firm's maximum borrowing by half. This is supportive of the role of SFLG in allowing certain types of small firm borrower's access to bank funding under commitment. In a further two papers, Cowling (2008; 2010), replicated the Berger and Udell (1992) US loan market study using UK SFLG data. The author concluded that in the presence of the SFLG, credit rationing in

not an explanation consistent with the loan market for most small businesses in the UK. However, there is a small pool of borrowers who, due to information problems, will always find it more difficult to raise bank funds when credit markets are tightening, even in the presence of SFLG.

In the last decade experiments have become increasingly popular because they allow the overcoming of many identification concerns that may arise with nonexperimental approaches (McKenzie and Woodruff, 2008). The literature has developed in management (Mayo, 1933; Bakker et al., 2013), strategy (Chatterji et al., 2016), economics (Bloom et al., 2013; Levitt and List, 2009; Prendergast, 1999), and public policy (Ludwig et al., 2011).

Arguably, the two most significant changes to the SFLG occurred in 2008 when the 5 Year Rule on eligibility was removed and in 2009 when the longstanding SFLG was replaced by the Enterprise Finance Guarantee Scheme (EFG). EFG saw a raising of the maximum firm and loan size thresholds and provides the basis of our experiment. Given that credit guarantee programmes are such a widely used form of policy intervention in developed, and developing, countries it is important to assess their effectiveness in the light of a long-standing research base that shows that growth of small firms is generally constrained by access to internal capital (Carpenter and Peterson, 2002).

Our experiment poses the following research question: What would have happened if the 5 Year Rule had remained in place and the maximum firm, and loan, size restrictions had been maintained at the original thresholds?

Our findings indicate that the 5 Year Rule was a better policy choice in respect of job creation, but had no impact in regard to sales growth. We contribute to extending experiments to the national decision-making level and provide suggestions for practitioners and policy makers on loan support schemes which are arguably the most important vehicle to ameliorate the problem of credit rationing.

Experiment background and hypothesis

UK Small Firm Loan Guarantee Scheme (SFLG)

The empirical context for our paper is the UK Small Firm Loan Guarantee scheme. The SFLG, established in 1981, was the government's primary debt finance instrument until its name change in 2009 to the Enterprise Guarantee Scheme (EGS). SFLG addressed the market failure in the provision of debt finance by providing a Government guarantee to banks in cases where a business with a viable business plan is unable to raise finance because they cannot offer security for their debt and/ or lack a track record. This rationale still underpinned the SFLG at the time of the change to EFG. In the SFLG, the government pays covers 75% and borrowing businesses pay a premium which is 2% over the commercial bank rate. Over the last decade, take up of the scheme has averaged around 4,500 loans per year, although there have been fluctuations between individual years. In January 2009, SFLG was replaced by the Enterprise Finance Guarantee (EFG), which opened the scheme to a wider number of businesses, with the specific objective to facilitate new bank lending in response to the Credit Crunch.

The Five Year Rule and the Graham Review

After 22 years from 1981, during which SFLG loan take-up had exhibited considerable volatility, reaching a nadir in 1985 of 543 loans and a peak in 1995 of 7,680 loans, the UK government announced a major review of the operations of its SFLG scheme led by Teresa Graham in December 2003. Concern was expressed by Her Majesty's Treasury (HMT) that default rates were excessively high at a rate of 34% compared to normal commercial bank loans to SMEs and that this high default rate exposed the Treasury to a much larger capital commitment (contingent liability) than was acceptable on an ongoing basis given the guarantee rate of 75% on outstanding balances against a maximum loan size under guarantee

of £250,000. The Review published its interim findings in February 2004 after wide consultation, and to a large extent these findings remained in the final report.

The key recommendation of the Graham Review (2004) which was accepted by HMT, and implemented on 1st December 2005, was that;

> The focus of the scheme will move to start-ups and young businesses. This will see the availability of SFLG limited to those SMEs under five years old, as these are the businesses which have had least opportunity to build up a financial track record and assets against which to secure borrowing.

The Reviews recommendation for focusing the SFLG on firms up to five years old was well grounded in both theory and empirical evidence in that capital structure theories predicted that younger and smaller firms would have a preference for debt funding once they had exhausted all available sources of internal funds, and that credit rationing, if observed, would be most apparent amongst younger and smaller, information opaque, firms (Ughetto, 2009). Equally, it was also evident that it was younger and smaller firms that were most likely to be constrained in obtaining conventional bank loans by a lack of collateralisable assets. Both of these criteria were enshrined in the rationale for the original SFLG. There was also a belief in HMT and more widely that by restricting access to a subset of the SME population that were likely to face the most severe rationing in debt markets the net economic benefits (additionality) per £1 of public money would be proportionally higher as partially rationed, lower growth, older and larger SMEs would be excluded. Finally, by restricting the scheme HMT capital exposure to default under guarantees would be proportionately smaller.

So what happened after the introduction of the 5 Year Rule in December 2005? The data on loan issue (Fig 1) shows a dramatic collapse from 6,698 loans in 2005 to 2,647 by 2008, a fall of 60.5% in loan numbers. This collapse in SFLG loans under guarantee had the desired effect of reducing HMT contingent liabilities to a historically low figure of £183

million on 4,305 defaulting loans, but questions about its' relevance as a public sector financial support instrument were asked given its new operational scale. These questions led directly to an Early Stage Assessment of the 5 Year Rule (Cowling et al., 2008) which concluded that;

> The majority, but not all, those interviewed did not consider the introduction of Five Year Rule as a change for the better, and the general feeling was that the rules about what constitutes a new business are too basic and restrictive.

These considerations were taken into account in the Enterprise Strategy, published in March 2008, which announced a relaxation of the 5 Year Rule to allow for older, growth orientated, small businesses. The effect was immediate and loan numbers rose significantly and immediately (see Fig 1). With the additional shock of the financial crash in September 2008, loans under guarantee returned to their pre-5 Year Rule levels within that year. In the face of the global financial crisis in the banking sector the UK government response was immediate and in January 2009 the Enterprise Finance Guarantee replaced the original SFLG. But the remit of EFG was much broader and allowed a maximum loan under guarantee of £1m (from £250,000 under SFLG). Firm size restrictions were also raised from £5.6m sales to £41m. The explicit aim was to broaden support for the SME sector in raising bank loans in the face of an increasing unwillingness to lend by commercial banks faced with uncertain liabilities.

Insert Figure 1 Here

It is these two policy changes, the removal of the 5 Year Rule and the raising of the maximum firm and loan size thresholds under EFG that provide us with our natural experiment. Our experiment poses one simple question and one working hypothesis;

Question: What would have happened if the 5 Year Rule had remained in place and the maximum firm, and loan, size restrictions been maintained at original SFLG thresholds?

Hypothesis H1: As younger and smaller firms grow faster on average than older and larger firms, those firms that would have fallen within the original SFLG scope will outperform those firms that only became eligible under the new rules and EFG.

Data and Methodology

To address our first research question, we draw upon two sets of linked data. The first set of data is drawn from the UK Department for Business Innovation and Skills (BIS) Enterprise Finance Guarantee (EFG) scheme Management Information records. This is supplemented by survey data from a recent evaluation of EFG (Allinson et al. 2013) which includes 500 EFG recipient firms and 899 non-EFG firms. The data was weighted to allow the evaluation team to generalise their findings back to the total EFG population.

The research was conducted by IFF Research via telephone interviews with businesses who had received an EFG backed loan in 2009 and also with a matched sample of non-EFG users from the general business population. The non-user sample was matched in terms of business age, legal status of business i.e. whether limited or unlimited and by broad business sector. The 'non-user' businesses were sourced from Dun & Bradstreet's business database. The main fieldwork was conducted during February and March 2012. The questionnaire was fully piloted prior to the start of the main fieldwork.

Table 1 shows the number of sample records available, the number of EFG businesses for whom we were able to source a telephone number for (using both automated and manual telephone look-up approaches), the approximate number of records lost due to unusable sample (unobtainable telephone number, duplicate records etc.) and the number of interviews

completed within each of the sample groups along with the associated response rates. Response rates have been calculated by dividing the number of completed interviews by the total number of contacts for which a definite outcome was achieved during the fieldwork period. Overall, 71% of EFG users and 41% of non-EFG users responded to the survey.

Insert Table 1 Here

Response Bias Tests

We employed chi-square and Mann-Whitney U tests and found no statistically significant response bias between EFG user respondents and EFG non-respondents with regard to the location of the businesses as captured by the Government Office Region (GOR), industrial activity, and the number of employees at the 0.05 level or better. The same tests were also undertaken between the control group respondents and control group non-respondents, and there was no evidence of response bias at the 0.05 level or better.

Measures

Dependent variables

We focus on two dependent variables that are commonly used – employment growth and sales revenue growth (Achtenhagen et al, 2010; Delmar, 1997; Unger et al, 2011; Weinzimmer et al, 1998). Respondents were asked to provide information on the number of employees in 2009 and 2012. Using a simple change from base year to current year measure has the potential to capture regression to the mean effects and pick up transitory shocks to the firms employment. To address this potential problem we adopt the 'current year average size' measure outlined in Davis, Haltiwanger, and Schuh (1996). This takes a firm employment average of t-1 and t. Respondents were also given questions relating to the level of sales revenue in 2009 and 2012. The firm sales average for 2009 and 2012 was also calculated (Sales Growth).

Independent variable

The next step was to create a dummy variable to test our natural experiment (EXPERIMENT DUMMY). Taking the full set of 500 EFG recipient firms, we then created our new policy dummy variable by coding those EFG recipients that were 5 years old or less at the point of loan receipt and had a loan not exceeding £250,000 with a '1'. This reflects the original SFLG scheme parameters when the so called "Graham 5 Year Rule" was in place. All other recipients of EFG not falling within these original parameters were coded as '0'. Here we note that of the 492 EFG recipients with full data, 142 were coded as '1' in our Experiment dummy variable, which represents 28.86% of the EFG sample, and 350 firms were coded '0' as they would have been ineligible under the old scheme rules.

Control variables

The following control variables were included in our models because of established precedent. Firms' activities and environment may shape their capacity to grow and accordingly the main business activities were coded into their main division categories as follows: Mining and Quarrying; Electricity, Gas and Water Supply, C and E (Mining Utilities), Manufacturing, D (Manufacturing), Construction, F (Construction), Wholesale and Retail Trade; and Repairs, G (Retail-Wholesale), Hotels and restaurants, H (Hotels), Transport, Storage and Communication, I (Transport), Real Estate, Renting and Business Activities, K (Real Estate), and Other Community, Social and Personal Service Activities, O (Other Services). The number of employees in 2009 was reported (Firm Size). The firm age was also reported (Firm Age).

Entrepreneurs' human capital may influence employment and sales revenue growth and the following general and specific human variables were operationalized: entrepreneurs aged 18-44 were coded as '1' and otherwise '0' (18-44 Years), those aged 45-54 years old

were coded as '1' and otherwise '0' (45-54 Years), those aged 55-65 years old were code as '1' and '0' otherwise, and entrepreneurs aged 66 years or older were coded as '1' and otherwise '0' (AGE 66+ Years). Entrepreneurs for whom their highest level of educational achievement was a university degree or higher were coded as '1' and otherwise '0' (Degree). The number of years of entrepreneurial experience was used to create three variables. Entrepreneurs with 0-9 years of entrepreneurial experience were coded as '1' and otherwise '0' (0-9 Years EE); those with 10-15 years of entrepreneurial experience were coded as '1' and '0' otherwise (10-15 Years EE); and those with 16 or more years of entrepreneurial experience were coded as '1' and otherwise '0' (16+ Years EE). Entrepreneurs were asked, 'In the last 2 years, has your business introduced any new or significantly improved products or services?' Entrepreneurs who indicated that they had 'improved products or services' were coded as '1' and otherwise '0' (Improved Products-Services). Entrepreneurs who indicated 'new products or services' were coded as '1' and otherwise '0' (New Products-Services). Entrepreneurs who responded that they had 'new and improved products or services' were coded as '1' and otherwise '0' (New and Improved Products-Services). Entrepreneurs who had 'no innovation' were coded as '1' and '0' otherwise (No Innovation). We also include firm age as a continuous variable.

Data and multicollinearity

Summary statistics and a correlation matrix was computed and is shown in Table 2. The correlation coefficients and variance inflation factor scores suggest that the results reported in Table 2 are not subject to multicollinearity.

Insert Table 2 Here

Results

Model 1 in Table 3 shows the results of the employment growth between 2009 and 2012. The experiment dummy is statistically significant at the 0.001 level in Model 1. Model 2 in Table 3 presents the results for the model of sales revenue growth between 2009 and 2012. The experiment dummy is statistically insignificant, but has a positive sign. Thus, the results presented in Table 3 support hypothesis H1 with regard to employment growth but reject it for sales revenue growth.

Discussion

Key findings

Our aim has been to perform an experiment to answer the question: what would have happened if the 5 Year Rule had remained in place and the maximum firm, and loan, size restrictions had been maintained at the original SFLG thresholds. In order to answer our research question and provide an indication of the causality between the 5 Year Rule and the performance of firms a variety of approaches could be employed. Instrumental variable (IV) approaches are problematic because of the need to identify instruments which can serve the designated purpose (Bascle, 2008), and the use of the wrong variables as instruments can generate problematic results. Experiments offer an alternative route to IV approaches.

Specifically, our paper has tested and found support for hypothesis H1 with regard to employment. This did not hold for sales growth. Our results suggest that the UK government would have had a greater impact on employment growth if they had maintained the 5 Year Rule. Credit guarantee schemes continue to be a popular form of intervention around the world but in the case of the UK the decision to replace the 5 Year Rule was not consistent with maximising the employment effects of intervention. Our results suggest that policy makers in the USA, Canada, France, Germany and Sweden as well as Asian countries such as

India, Korea and Indonesia should also reflect upon the eligibility criteria for their credit guarantee schemes in their quests to ameliorate the problem of credit rationing.

Limitations and implications for future research

This study has looked at an experiment related to employment and sales revenue growth. But, clearly there are a wide range of other measures of business performance which can be used such as the level of profitability, exporting and non-economic measures including satisfaction of owner-managers and employees with various dimensions of their jobs. These limitations offer opportunities to replicate and extent our study to the relaxing of the 5 Year Rule with regard to other measures of business performance. Future studies could also include qualitative case studies of firms to see whether firms which were 5 years old or less at the point of loan receipt and had a loan not exceeding £250,000 did have superior economic and non-economic business performance compared to other types of firms who were, and were not in receipt of government loans. This experiment was applied to the UK but changes in similar loan guarantee programmes schemes such as the SBA in the USA and the CSBFP in Canada or the other 43 countries identified by Beck et al. (2008) can also be explored using an experiment framework. By looking at experiments in different continents and countries with similar, as well as different cultures this can help to see how different business environments and cultures influence changes in policy using experiment frameworks of analysis. Clearly policy makers face difficult decisions but applying experiment frameworks will assist them in the allocation of resources and facilitate employment retention and employment growth. Furthermore, extending the study by tracking the EFG users and non-users over time will allow longitudinal studies to see whether the insights suggested in our paper hold over the longer time period. Additionally, in tracking the EFG users and non-users

questions can be harvested on management strategies and practices to see how those measures influence business performance within the experiment set up in this paper.

Implications for practice and policy and conclusions

Our research has contributed to the experiment literature and to provide recommendations for policy makers and practitioners with regard to the UK provision of credit guarantee schemes which have been championed as a way to overcome, in part, the credit rationing phenomenon. The UK has since 1981 provided a loan guarantee scheme but the relaxing of the 5 Year Rule and the replacement of the SFLG with the EFG was questionable if maximising the employment effects of the intervention was a primary motivation. The maximum firms, and loans, size restrictions which are operated by the EFG might be reduced to the previous levels operated with the SFLG if job creation is the main policy objective. Our research findings have found that the 5 Year Rule was a good policy choice for jobs and created more employment value to those small firms with the greatest need and potential.

Central government support schemes and development agencies (Bennett, 2014) can provide important assistance for SMEs. Credit guarantee schemes represent one of the most widely used form of policy intervention, globally, in developed as well as developing countries. The credit rationing problem continues to be a global problem, both before, and after, the credit crunch and the need for credit guarantee schemes continues. Without the capital formation of small firms (Graham, 2004) firms less than required levels of capital will result in less jobs being created, and lower levels of sales revenue. The Graham Review (2004) recommendations of focusing upon SMEs under five years has been at least partially vindicated by our results. Credit schemes beyond the UK will benefit from the lesson that focusing upon younger and smaller sized firms may also achieve better output performance with regard to employment.

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Fig 1: UK Loan Guarantee Scheme Take-Up of Loans, 2002-2009

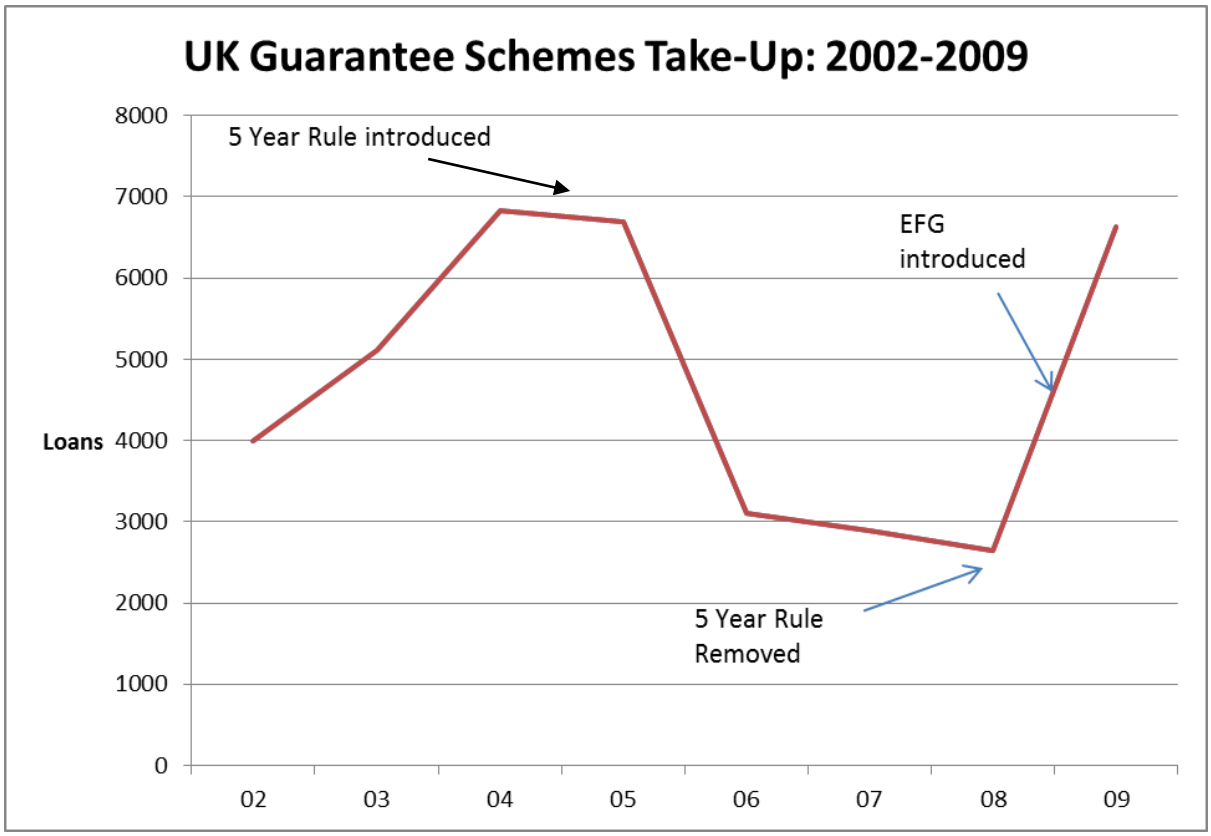

Table 1: Comparison of EFG Users and Non-Users

	EFG Users	Non-Users
	SAMPLE CLEANING	
Total in-scope records provided (guaranteed/repaid)	6,504	11,306
Telephone number found	3,398	n/a
	CATI SCREENING	
Selection for CATI	3,398	11,306
Unusable – ineligible for interview, business contact details incorrect, number unobtainable, etc.	855	1,495
	ACHIEVED INTERVIEWS/RESPONSE RATE	
Total useable sample	2,543	9,811
Sample with a definite outcome (completed interview, refusal, terminated interview)	709	2,254
Interviews achieved	500	899
Response rate (%)	71%	41%

Table 2

	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Employment Growth	28.026	55.080												
2. Sales Growth	2312113	4401826	.558											
3. Mining Utilities	0.03	0.17	.098	.003										
4. Manufacturing	0.22	0.41	-.055	-.022	-.092									
5. Construction	0.07	0.26	-.046	-.001	-.048	-.146								
6. Retail-Wholesale	0.23	0.42	-.082	.005	-.096	-.294	-.152							
7. Hotels	0.05	0.22	.026	-.049	-.040	-.121	-.063	-.126						
8. Transport	0.05	0.22	.129	.140	-.041	-.124	-.064	-.129	-.053					
9. Real Estate	0.24	0.43	-.005	.014	-.098	-.298	-.154	-.310	-.128	-.129				
10. Other Services	0.11	0.31	.063	-.069	-.060	-.183	-.095	-.191	-.079	-.080	-.194			
11. Firm Size	25.95	49.46	.932	.552	.096	-.055	-.047	-.072	.032	.150	.000	.024		
12. Firm Age	11.203	19.025	.243	.234	.105	.016	-.013	-.024	-.018	.051	-.034	-.009	.275	
13. 18-44 years	0.29	0.46	-.094	-.042	-.038	-.038	-.027	.073	.001	-.063	.003	.035	-.124	-.166
14. 45-54 years	0.35	0.48	.098	.070	.012	.000	-.037	.035	.030	.040	.001	-.023	.111	.019
15. 55-65 years	0.28	0.45	.003	-.019	.044	.018	-.012	-.029	-.051	.024	.014	.000	.011	.102
16. 66+ years	0.08	0.27	-.005	-.021	.011	.034	.001	-.014	.031	.003	-.029	-.018	.004	.079
17. Degree	0.56	0.50	.141	.132	.031	-.034	-.080	-.141	-.035	-.022	.164	.090	.128	.010
18. 0-9 years EE	0.22	0.41	-.119	-.088	-.029	-.047	-.063	.069	.068	-.07	-.068	.043	-.159	-.179
19. 10-15 years EE	0.22	0.41	-.043	-.055	-.018	.006	-.027	-.008	-.029	-.019	.044	.010	-.031	-.056
20. 16+ years EE	0.57	0.50	-.133	.118	.040	.034	-.075	-.050	-.033	.072	-.034	-.044	.159	.195
21. Improved products-services	0.12	0.33	-.011	.041	-.026	.053	-.022	-.073	-.043	-.007	-.051	-.033	-.013	-.056
22. New and improved products-services	0.24	0.40	.024	.007	-.039	-.003	-.043	-.062	.026	.012	.021	.091	.030	-.005
23. New Products Services	0.21	0.43	.013	.005	-.038	.026	-.042	.004	.051	-.032	-.016	.024	-.007	-.048
24. No innovation	0.43	0.50	-.020	-.043	.080	-.062	.084	-.020	-.025	.026	.043	-.062	-.002	-.086
25. EXPERIMENT DUMMY	0.29	0.45	-.152	-.164	-.039	-.092	.034	.089	-.016	-.043	.020	-.014	-.235	-.280

Notes: n=221; P<0.10=0.11, P< 0.05=0.14, P<0.01=0.18

Table 2 Cont.

	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.
14. 45-54 years	-.471											
15. 55-65 years	-.398	-.544										
16. 66+ years	-.191	-.218	-.184									
17. Degree	.038	-.026	.030	-.076								
18. 0-9 years EE	.416	-.111	-.213	-.150	.057							
19. 10-15 years EE	.171	.050	-.150	-.124	.049	-.270						
20. 16+ years EE	-.487	.052	.301	.227	-.089	-.604	-.602					
21. Improved products-services	-.004	.037	-.010	.041	.072	-.006	.048	.051				
22. New and improved products-services	-.011	-.026	.032	.011	.044	-.075	.014	-.053	-.210			
23. New Products Services	.047	.046	-.078	-.030	.072	.052	.013	-.035	-.209	-.021		
24. No innovation	-.031	-.050	.053	.053	-.154	.007	-.061	-.045	-.325	-.487	-.032	
25. EXPERIMENT DUMMY	.110	.019	-.134	-.036	.048	.137	.002	-.120	-.083	.018	.018	-.001

Table 3: Estimates of OLS Models of Growth in Employment and Sales Revenue

	Model 1 (Employment Growth		**Model 2 (Sales Growth)**	
	Coef.	**Std. Err.**	**Coef.**	**Std. Err.**
Manufacturing	0.770	1.532	**-1707.184[a]**	333.804
Construction	1.653	1.664	**-1692.770[a]**	359.185
Retail-Wholesale	0.196	1.535	**-1722.416[a]**	334.760
Hotels	0.735	1.623	**-2168.121[a]**	351.336
Transport	**3.596[c]**	2.111	91.273	425.454
Real Estate	0.088	1.519	**-1808.579[a]**	331.563
Other Services	1.415	1.578	**-1916.976[a]**	341.116
Firm Size_2009	**1.041[a]**	0.009	**56.760[a]**	1.597
Firm Age_2009	-0.010	0.008	0.352	1.591
Entrepreneur Age: 45-54 years	-0.403	0.402	-110.018	80.697
Entrepreneur Age: 55-65 years	-0.543	0.515	**-212.538[b]**	98.446
Entrepreneur Age: 66+ years	-1.587	1.072	**-761.562[a]**	223.838
Entrepreneur Degree	**0.889[a]**	0.327	16.495	65.459
Entrepreneur 10-15 years exp.	-0.071	0.430	73.419	85.226
Entrepreneur 16+ years exp.	0.118	0.466	**191.230[b]**	90.685
Improved products-services	-0.074	0.516	**-192.257[c]**	101.447
New and improved products-services	-0.098	0.414	-121.331	81.932
No innovation	-0.641	0.437	-136.773	88.140
EXPERIMENT DUMMY	**0.891[a]**	0.354	44.650	69.024
Constant	-0.293	1.579	**2117.484[a]**	346.275
N Obs	279		233	
F stat	**851.98[a]**		**79.93[a]**	

Robust standard errors are reported. [a] Significant at the 0.01 level; [b] Significant at the 0.05 level; and, [c] Significant at the 0.10 level. Comparison variables: Industrial Activity, Mining Utilities; Entrepreneur Experience, 0-9 Years EE; Entrepreneur Age, 18-44 Years; Innovation, New Products Services.