Firm growth and ICT-related intangibles of Greek SMEs in times of crisis: A quantile approach

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Abstract

The main objective of this paper is to examine the impact of the adoption of intangible Information and Communication Techmologies (ICT) on firm growth using conditional quantile approach and a rich data survey of 3,500 Greek SMEs at the peak of the economic crisis in Greece. To this end, we estimate 3 alternative models corresponding to different forms of ICT-related intangible assets, that is SME organizational commitment towards ICT adoption, ICT intangible resources, and internet integration. The main findings suggest that ICT organizational commitment has a positive and significant impact at the extreme quantile of the firm growth distribution, indicating that high-growth SMEs which are engaged in ICT plans grow faster than high-growth SMEs with limited ICT intentions. In addition, a higher investment in ICT intangible resources and internet integration favors substantially the growth of SMEs in the middle and the higher quantiles compared to the similar SMEs with limited investments in ICT resources and internet integration.

Keywords: ICT-related Intangible Assets; Firm Growth; SMEs; Crisis; Quantile Regressions

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1. Introduction

Information and Communication Technologies (ICT) evolve rapidly and function as a catalyst for the competitiveness and productivity of firms and especially in SMEs (Cardona et. al, 2013; Koski, 1999) both in the long and short run (Al Mamun and Wickremasinghe, 2014). ICT may facilitate the entrance of new firms in markets and stimulate incumbents to be evolved in a creative destruction process in order to sustain their competitive advantage . Put differently, ICT provide great challenges for competitive and dynamic effects related to firm turbulence in terms of firm entry, firm exit, and the mobility of market shares of incumbents. In general, ICT generate significant opportunities for firms not only to survive but also to grow (Weill, 1992; Swamidass, and Kotha, 1998). The adoption of ICT provides a wide range of benefits to SMEs, enabling firms to restructure their business activities and improve their products and services. Specifically, ICT within firms favors access to new markets and the establishment of new business models (Corbitt, 2000; Javalgi and Ramsey, 2001). Extant research has explored the substantial role that ICT play in shaping the performance of economies (e.g., Colecchia and Schreyer, 2001; VanArk et al., 2003b), sectors (e.g.,Van Ark et al., 2003a; Pilat et al., 2002; Inklaar et al., 2005), and firms (Pilat, 2005; Hempell, 2005; Bayo-Moriones and Lera-López, 2007). Some of the main findings highlight that ICT investments contribute to the capital deepening, growth performance, firm efficiency, knowledge spillovers, and rapid innovation.

Exploring how various forms of ICT adoption shape the growth performance of SMEs appears of high policy interest and relevance in designing entrepreneurship and competitiveness programs and related policy instruments intended to improve SME performance. The issue is particularly relevant in the context of the ongoing global pandemic crisis which is linked to even greater challenges for SMEs in order to survive, highlighting the potentially crucial role of the development of digital capabilities in their effort to gain competitive advantage and improve their performance. At the forefront of these challenges, an increasing number of businesses redefine their organizational procedures and business models in their attempt to be competitive and resilient in turbulent times (Pal et al., 2014; Sabatino, 2016). In this regard, this paper focuses on investigating "whether" and "how" the growth sales of SMEs can be improved by adopting different forms of ICT-related intangibles in the year 2012 which has been characterized as the peak of the economic crisis in Greece. To address these research questions, we utilize a conditional quantile regression methodology contributing, therefore, to the relevant literature. Hence, this paper is the first attempt to estimate at the firm-level the relationship between ICT adoption and growth by using quantile regressions. Further, there are several studies that explore the impact of ICT adoption on firm productivity (Arvanitis, 2005b; Bayo-Moriones & Lera-López, 2007; Corrado, et al., 2017; Díaz-Chao et al., 2015) and firm profitability (Kossaï, and Piget, 2014), but less on firm growth (Locke, 2004). To our knowledge, this paper fills a crucial gap in the literature regarding the impact of ICT adoption on firm growth in times of crisis.

Notably, the Greek case may provide key inshights on how high-growth SMEs respond in terms of ICT adoption under turbulent conditions for the following reasons. First, the global financial crisis of 2008 created a far more turbulent and difficult environment for the Greek economy (Meghir et al.), being particularly deminishing for the growth performance and survival for a high number of Greek firms (Giotopoulos et al., 2017; Williams & Vorley, 2015). The Greek economy, after a deep and prolonged downturn that it experienced in the past decade, was struggling to maintain a recovery growth path in the period just before the COVID-19 crisis. In fact, the crisis that Greece faced during the 2010-2013 period resembles in its severity the pandemic crisis, at least in terms of GDP losses. These two crises share common features, such as double-digit GDP losses, high unemployment rates around 20%, negative inflation rates, and significant increases in government deficits and public debt (European Commission, 2020). In both cases, the regulatory frameworks, institutions, and investors were unprepared for the magnitude and the persistent consequences of the crises (Lustig and Mariscal, 2020). Both crises appear to also have devastating effects on business activity resulting in business exits, supply chain disruptions, redundancies, and loss of key customers (Acs et al., 2020; Newman et al., 2020). Small businesses tend to be more vulnerable compared to their larger counterparts when major exogenous shocks jeopardize markets due to lack of resources known as liability of smallness (Eggers, 2020). This means that the previous economic crisis Greece faced offers a unique case study to explore how such exogenous shocks to an economy affect SMEs and their response. Despite the fact that the sources of each crisis are different, the effects on firm performance and the relevant business decisions may have common characteristics and could offer some insights to policy making for the post-COVID era.

The remainder of the paper is structured as follows: Section 2 briefly reviews the literature related to the linkages of ICT adoption with firm performance; Section 3 describes the firm-level survey data, the variables and the methodology used; Section 4 presents the results of the empirical part; Section 5 provides the main conclusions and some policy implications.

2. ICT Adoption and Firm Performance: Past Evidence

In the modern economies the wide use of ICT at the firm level are considered to benefit businesses in multiple dimensions of performance with respect to firm survival, organizational performance and labor productivity (Arvanitis, 2005a, 2005b). The ICT adoption by firms contribute to the direct savings of resources, the development of new and improved products, the reduction of production cost (), and the higher flexibility of production processes (Arvanitis and Loukis, 2009). According to Arvanitis & Loukis (2009), ICT adoption can further reduce the cost of capital, either through the reduction in inventories and the saving of space, or by the continuous usage of machinery. ICT help

SMEs to be engaged successfully in better and more effective business models and processes and thus ICT may foster SME growth (Barba-Sánchez et al, 2007).

Nevertheless, the digital readiness of firms depends, to a great extent, on the technological competencies and employee skills (Díaz-Chao et al., 2015; Falk and Biagi, 2017; Pacchini et al., 2019). Especially in the case of SMEs, barriers exist to the use of ICT related to the required financial resources as well as the lack of prompt awareness and exploitation of the opportunities linked to the adoption of the specific technologies (Nasco et al., 2008; Raj et al., 2020; Thong, 2001). These aspects for the Greek case may explain why a substantial number of SMEs continue to lag behind, compared to the European average, in the adoption of these technological resources (European Commission 2016).

The role of internet integration and telecommunications infrastructure on firm performance and productivity has been highlighted in the literature (Bertschek et al., 2013). Firms that successfully use and adopt internet infrastructure can be more productive and more innovative, as they have better access to partnerships; moreover, internet integration also facilitates the communication between employees and employers (Majumdar et al., 2010). In particular, internet is a technology that fosters the development of new business relationships and the identification of new market opportunities for firms (Hinson and Adjasi, 2009; Petersen et al., 2002). Through the channels of better communication inside and outside the organization and a higher probability for firms to recognize opportunities, internet may enhance the growth performance of firms (Mathews and Healy, 2008). Moreover, internet has a positive impact on the international performance through e-commerce and e-sales (Gibbs and Kraemer, 2004). Litan and Rivlin (2001) describe how the use of internet within firms promotes their productivity growth. They identify several mechanisms like the reduction of transaction costs, the improvement of management efficiency in product development, increased marketing and pricing efficiency; finally, internet is likely to show up better customer choice and satisfaction.

Bertschek et al. (2013) provide evidence that broadband internet does not have a significant impact on labour productivity, but positively affects firms' probability of releasing process or product innovations. Bertschek and Niebel (2016) find that the use of mobile internet is positively and significantly associated with firms' labour productivity explained by improvements in information flows and greater flexibility at work. Haller and Siedschlag (2011), based on a sample from Irish manufacturing firms from 2001 to 2004, suggest a significant association between ICT adoption and high-growth performance.

To this end, the main goal of this paper is to examine the impact of ICT adoption on firm growth, by using conditional quantile regressions and a rich data survey of 3,500 Greek SMEs in the period 2012, the peak of the Greek economic crisis. To this end, we estimate three alternative models

corresponding to different ICT-related intangible factors, that is, SME organizational commitment towards ICT implementation, ICT intangible resources, and internet integration.

3. Data and Methodology

3.1 Description of the survey

The empirical analysis resides on a firm-level dataset of 3500 SMEs that operate in Greece. The dataset was collected in 2012 on behalf of the Hellenic Organization for Medium-and Small-Size Enterprises and Handicrafts, referred in Greek by its acronym, EOMMEX . The research project opted to (a) measure the competiveness level of the Greek SMEs, (b) pinpoint the determinants of competitiveness, and (c) build a methodological tool to monitor the evolution of the firms' competitiveness. The survey was conducted by personal interviews via telephone based on the CATI system. Hence, the questionnaire had a structured form with four separate sections corresponding to the internal organization, the human capital, the ICT usage, and the innovation activities. Prior to the official kick off of the survey, 50 pilot questionnaires were answered. The questionnaires were filled on line by the interviewees referring to the CEO, the general manager or the owner of SMEs through a web-based application.

The project's researchers had to contact more than 20 thousands SMEs from specific industries of the Greek economy in order to reach the target of 3,500 responses. The response rate of the firms amounted to 16%. The sample is covered to a great extent by micro firms (57.6% of the total sample); small firms have a share of 32.9%, while medium-sized firms cover less than 10% of the total sample, thus being representative of the business population in Greek economy. Although 3,500 firms responded in general, some have not answered all the questions. Consequently, our sample had to include only 1,215 observations as these were the firms that had provided complete answers related to our examined variables. The sample includes firms operating in manufacturing and services sectors, the two dominant economic activities of the Greek economy. The dependent variable in the examined regressions is *Growthsales* based on the annual turnover data for 2012 and 2011 collected from Hellastat. The common VAT code variable was used to merge the two databases.

3.2 Methodology

In this study, we use a conditional quantile approach enabling us to take into account potential heterogeneity which usually is observed in firm growth estimations (Koenker, 2004; Coad and Rao, 2008). For the purposes of our research, five different quantiles were chosen, 10%, 25%, 50%, 75% and 90%. The percentages of 10% and 25% refer to SMEs with low growth rates. The 50% quantile refers to the firms at the median of the firm growth distribution, while the percentages of 75% and

90% refer to the firms characterized as high growth firms. Table 1 presents the growth rates for each different quantile based on our data together with its descriptive statistics.

-Insert Table 1 about here-

Our quantile model is based on the growth model introduced by Coad and Rao (2008), but instead of innovation we make use of ICT adoption as the variable of primary interest. The heterogeneous effects across firms of diverse growth rates is considered using conditional quantile regressions which allows to get distinct estimated coefficients at several points of the firm growth distribution, i.e. from low to medium and high growth firms, conditional on ICT adoption. In order to capture different forms of ICT-related intangible assets we estimate respectively three alternative models as described below:

$$GrowthSales_i = a_0 + \alpha_1 ICTComm_i + a_2 Age_i + a_3 Size_i + a_4 Sector_i + \varepsilon_\iota \quad (1)$$

$$GrowthSales_i = \beta_0 + \beta_1 ICTRes_i + \beta_2 Age_i + \beta_3 Size_i + \beta_4 Sector_i + u_\iota \quad (2)$$

$$GrowthSales_i = \gamma_0 + \gamma_1 IntInteg_i + \gamma_2 Age_i + \gamma_3 Size_i + \gamma_4 Sector_i + v_\iota \quad (3)$$

The dependent variable $GrowthSales_i$ denotes the growth of firm i, measured by the difference of the natural logarithms of sales between two subsequent years 2012 and 2011. Firm size ($Size_i$) is proxied by the natural logarithm of sales for firm i in the year 2011. Firm age (Age_i) is measured by the natural logarithm of age of firm i, defined as the difference between the survey year and the year of the incorporation of firm i. $Sector_i$ is a binary variable, taking the value of 1 if a firm belongs to the manufacturing sector and 0 in the case that a firm operates in the services sector. *ICT Commitment* ($ICTComm_i$) represents the organizational adaptation and flexibility of firms to the new ICT conditions; *ICT Resources* ($ICTRes_i$) includes the ICT systems and softwares within a firm; *Internet Integration* ($IntInteg_i$) includes all the internal processes and functions for which internet is used. Table 2 describes in detail the main independent variables corresponding to the ICT adoption and presents their frequency distributions. Finally, ε_i, u_i , v_i are the random error terms and α, β, γ, denote the vectors of the coefficients to be estimated.

-Insert Table 2 about here-

In addition, the correlation matrix provided in Table 3 indicates the lack of high correlations among the independent variables, thus implying that our empirical estimations do not suffer from multicollinearity problems.

-Insert Table 3 about here-

4. Empirical Results

The empirical results obtained from conditional quantile regressions are provided in Tables 4-6. In these tables, the parameters under esimation and the standard errors are presented, in order to identify whether ICT-related intangible assets play any significant role in explaining firm growth. Our empirical findings corresponding to the growth model of the first equation suggest that ICT organizational commitment facilitates substantially the growth of SMEs in the highest quantile of the relevant distribution, implying that a higher degree of ICT adoption favors high growth firms to grow faster compared to those with low intensity of ICT orientation. Focusing on the other factors, we notice that firm size has a negative and statistically significant impact on firm growth for all the firms. This means that small firms which adopt ICT grow faster than the largest ones, which is reasonable, taking into consideration their absolute number of employees. Further, firm age affects firm growth in all quantiles of distribution with a positive sign. The empirical findings corresponding to the second equation are presented in Table 5. Hence, focusing on the impact of ICT itangible resources of SMEs on their growth, our findings suggest that this factor affects positively and significantly the growth of SMEs apart from those SMEs being in the lowest quantile. The positive and significant coefficient at the top quantile and at the same time the non-significant coefficients at the low quantiles reveal that under conditionality the right tail of the firm growth distribution tends to become longer as ICT intangible resources intensity increases. Regarding the other factors, size links negatively with growth, thus indicating that smaller firms tend to grow faster compared to firms of larger size. What is more, our findings suggest that firm age has a significant and positive impact on the upper quantiles. In other words, older high growth SMEs tend to grow faster than younger ones. Finally, Table 6 presents the regression results of equation (3). Internet integration affects the dependent variable positively and significantly in the 75% and 25% quantiles of firm growth distribution. Hence, SMEs that utilize to a great extent internet integration tend to grow faster compared to the respective ones characterized with low intensity of internet integration. Firm size appears to affect negatively all the quantiles of our distribution and firm age positevely.

In sum, the findings of this study suggest that ICT organizational commitment, ICT intangible resources and internet integration positively affect the growth of SMEs in the middle and the higher quantiles in most cases. In this vein, many studies indicate a positive contribution of innovative intangible assets and innovative activities on sales growth (Geroski & Toker, 1996; Roper, 1997; Freel, 2000) and especially this positive impact holds for high-growth firms but not for low-growth firms (Coad and Rao, 2008). Hence, in times of a crisis, SMEs that proceed with more intense ICT expansion processes can achieve a high growth performance. Hence, this category of small firms have the ability to identify, evaluate and exploit opportunities in times of crisis (Beliaeva et al., 2020; Davidsson and Gordon, 2016; Shepherd and Williams, 2020) and the flexibility to respond

successfully to a crisis by using valuable information based on the close relationships between customers and managers/owners (Eggers et al., 2012). In contrast, in an unfolding crisis, SMEs which are reluctant to invest their limited resources into high-cost intangible assets with an uncertain outcome (Lee et al., 2015) or are less able to adopt new technologies and methods that will increase their financial leverage (Thorgren and Williams, 2020), lag behind in terms of growth performance.

In addition, we found that older firms tend to grow faster compared to younger firms. One possible explanation is that mature firms benefit from learning experience which allows them to build efficiently on past organizational routines and capabilities (Coad et al., 2016) and, as a result, to outperform in terms of sales growth (Glancey, 1998). Over time, SMEs can redesign and refresh older areas of technological opportunity and are able to accumulate managerial knowledge and resources and manage effectively the uncertainty (Levitt and March, 1988; Wiklund and Shepherd, 2003) that accompanies SMEs in times of crisis (Eggers, 2020). In addition, we provide evidence that SMEs of smaller size may grow faster in times of crisis compared to their larger counterparts. In other words, the smaller they are the faster they tend to grow, since they have to act fast in order to reach at the minimum efficient scale (Audretsch and Mahmood, 1994; Fotopoulos and Giotopoulos, 2010) as part of a cost-reduction and viability strategy in crisis times. Finally, during crisis SMEs operating in the manufacturing sector grow more rapidly compered to their counterparts in the service sector.

To conclude, this analysis provides evidence that ICT-related intangible assets boost SMEs growth and especially in the case of high growth firms. We demonstrate that fast growing SMEs that fully adopt ICT tend to grow faster than those ones with a lower degree of ICT adoption.

5. Conclusions

The present study aims to analyze the link between ICT adoption and SME growth in the Greek manufacturing and services sectors. Especially in order to examine the role that different forms of ICT-related intangible assets play in shaping high and low growth performance in crisis times, we use a rich dataset of 3,500 Greek SMEs applying conditional quantile regressions. Prior research on ICT adoption and firm performance does not use quantile regression approach. We attempt to fill this gap, based on Coad and Rao (2008) who utilize a quantile approach to capture the linkages between innovation and high and low growth performance of firms.

The results suggest that the high-growth firms achieve a faster growth speed in SMEs characterized by a higher intensity of ICT-related intangibles compared to high-growth SMEs with low ICT adoption. In contrast, looking at low-growth firms, we provide evidence that ICT adoption has no effect on firm growth. In other words, increasing ICT adoption and more specifically ICT

organizational commitment, ICT resources and internet integration, favors the growth success of high-growth firms. Regarding the control variables, firm size affects negatively firm growth across all the quantiles examined, firm age impacts firm growth positively across quantiles and finally manufacturing SMEs grow facter compared to services SMEs at the low quantiles.

Future research could provide additional analysis and insigths. Our research is limited only to SMEs - although the great majority of Greek firms is small and medium-sized; it would be interesting for further research to test our models also in larger firms. Additionally, it may be interesting to revisit the research question also within the context of the ongoing Covid-19 crisis, that has followed the previous deep crisis in Greece, and see if the incentives may have changed.

At a policy level, our results suggest that a special focus should be given on the ICT adoption especially on small and medium firms. The potential effect on growth on that specific part of firms' population could be significant. On the other hand, since the large majority of SMEs usually lacks access to finance, or knowledge and skills to successfully adopt and use ICT, additional support measures are required. Of course, policy makers have already developed special tools and instruments to support SMEs. Nonetheless, our analysis reinforces the fact that the benefit on them could be significant and lead to their growth and hence to an economic growth. In this repsect, policy actions in the form of training programs and more efficient and flexible funding programs should be a priority for policy makers – this is also a central direction of EU policies, in order to strengthen business activity in Europe, through the NextGenerationEU and other finance tools. In addition to government policies, it would be important to strengthen the engagement of entrepreneurs in ICT adoption activities. Due to the additional costs required for equipment installation, employee training, and related, SME owners and managers should be convinced of the long-term benefits of ICT adoption. Thus, policies aimed at mitigating these costs and further revealing the benefits of ICT adoption could result to increase performance and lead to an overall growth to the economy.

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Table 1: Summary statistics of the dependent variable

Quantiles	**Growth**
10%	-0.4023
25%	-0.1530
50%	0.1699
75%	2.6487
90%	3.5684
Obs	1273
Mean	1.1783
Std. Dev.	1.7296
Skewness	0.6205
Kurtosis	2.5873

Table 2: Frequency distributions of the independent variables

		Frequency	Cumulative Frequency
ICT Organizational Commitment (ICT Comm)	To what extent the firm has an organizational commitment to adopt new ICTs		
	1. No attempt is made to adapt to the new conditions by incorporating new information and communication technologies.	17.91	17.91
	2.Another intermediate answer	5.57	23.49
	3. Limited efforts are being made to incorporate new information and communication technologies, the most widespread technologies in the industry are being adopted.	18.2	41.69
	4.Another intermediate answer	10.49	52.17
	5. Significant efforts are being made to incorporate new information and communication technologies, all the technologies used by the main competitors are being adopted immediately.	28.91	81.09
	6.Another intermediate answer	4.11	85.2
	7. Every new technology, in all the company's activities, is adopted immediately and before the competitors.	14.8	100
ICT Intangible Resources (ICT Res)	To what extent the following ICT intangible resources have been installed by the firm: information resource management system, information systems manager, software systems, security back up plan for information systems		
	1.None of them	27.89	27.89
	2.One of them	21.77	49.66
	3.Two of them	13.46	63.11
	4. Three of them	13.37	76.49
	5.All of them	23.51	100
Internet Integration (Int Integ)	In how many business functions (information search, e-mails, teleworking, e-training, teleconferences, banking transactions, e-commerce, online catalog of products and services, customers service and support, e-invoicing) the firm makes use of the internet		
	1. None	5.86	5.86
	2. In one business function	3.51	9.37
	3. In two business functions	13.66	23.03
	4. In three business functions	17	40.03
	4. In four business functions	16.69	56.71
	5. In five business functions	11.94	68.66
	5. In six or more business functions	31.34	100

Table 3: Correlation matrix for the independent variables

	(1)	(2)	(3)	(4)	(5)	(6)
ICT Comm (1)	1.0000					
ICT Res (2)	0.4697	1.0000				
Int Integ (3)	0.5016	0.4289	1.0000			
Size (4)	0.2125	0.3097	0.1999	1.0000		
Age (5)	-0.0647	-0.0819	-0.0581	0.0374	1.0000	
Sector (6)	0.1970	0.2473	0.1993	0.2749	-0.1402	1.000

Table 4: Firm growth and ICT organizational commitment

		Quantile Regressions				
	OLS	10%	25%	50%	75%	90%
ICT Comm	0.0654*** (0.0228)	0.0151 (0.0106)	0. 0270* (0.0151)	0.3942 (0.0290)	0.0729*** (0.0286)	0.0696*** (0.0282)
Size	-0.5083*** (0.0216)	-0.0677** (0.0235)	-0. 1353*** (0.0269)	-0.5966*** (0.0269)	-0.5889*** (0.0223)	-0. 783*** (0.0201)
Age	0.4195*** (0.0910)	0.1285 (0.0994)	0.1428** (0.0712)	0.5510*** (0.1380)	0.5628 *** (0.1779)	0.4531*** (0.1044)
Sector	0.5069*** (0.0909)	0. 1043 (0.0845)	0.2105*** (0.0808)	0.6837*** (0.1491)	0.3275** (0.1558)	0.0796 (0.1212)
Constant Term	5.9301*** (0.3770)	-0.022 (0.2790)	1.0101*** (0.3275)	6.7251*** (0.6045)	7.6953*** (0.5458)	8.8768*** (0.5144)
Obs	1215	1215	1215	1215	1215	1215

*Notes: *Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level. Standard errors are reported in parentheses*

Table 5: Firm growth and ICT intangible resources

	OLS	Quantile Regressions				
		10%	25%	50%	75%	90%
ICT Res	0.0915***	0.0113	0. 0233*	0.0942**	0.1110**	0.1001***
	(0.0204)	(0.0143)	(0.0124)	(0.0370)	(0.0349)	(0.0307)
Size	-0.5247***	-0.0691***	-0. 1302***	-0.1302***	-0.6289***	-0.6147***
	(0.0220)	(0.0162)	(0.0230)	(0.0230)	(0.0282)	(0.0290)
Age	0.4344***	0.1725**	0.1238	0.5241***	0.6034***	0.4175***
	(0.0906)	(0.0867)	(0.0886)	(0.0617)	(0.1403)	(0.1044)
Sector	0.4679***	0. 0904	0.2061***	0.6405***	0.3101**	0.1304
	(0.0912)	(0.0813)	(0.0681)	(0.1596)	(0.1214)	(0.1555)
Constant Term	6.0134***	-0.1074	1.0283***	6.8076***	7.9174***	9.2694***
	(0.3710)	(0.2432)	(0.3058)	(0.3955)	(0.5254)	(0.4443)
Obs	1215	1215	1215	1215	1215	1215

*Notes: *Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level. Standard errors are reported in parentheses*

Table 6: Firm growth and internet integration

	OLS	Quantile Regressions				
		10%	25%	50%	75%	90%
Int Integ	0.0842***	0.0138	0. 0381**	0.0362	0.0928***	0.0557*
	(0.0264)	(0.0223)	(0.0167)	(0.0311)	(0.0277)	(0.0345)
Size	-0.5085***	-0.0675***	-0. 1330***	-0.6180***	-0.5947***	-0.5959***
	(0.0216)	(0.0190)	(0.0309)	(0.0289)	(0.0244)	(0.0253)
Age	0.4180***	0.1456**	0.1455**	0.5284***	0.5754***	0.4896***
	(0.0909)	(0.0638)	(0.0474)	(0.0929)	(0.1018)	(0.1113)
Sector	0.4992***	0. 1022	0.2214***	0.6875***	0.2855**	0.1634
	(0.0910)	(0.0637)	(0.0748)	(0.1079)	(0.1398)	(0.1105)
Constant Term	5.7734***	-0.0801	0.8749**	6.9836***	7.5653***	8.9548***
	(0.3858)	(0.2388)	(0.3461)	(0.5743)	(0.3938)	(0.4270)
Obs	1215	1215	1215	1215	1215	1215

*Notes: *Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level. Standard errors are reported in parentheses*