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Abstract

This study examines the relationship between access to finance and growth in sales for Micro, Small, and Medium Enterprises (MSMEs) in Iran. Using data from 486 firms in five provinces, our findings indicate that external financing positively impacts sales growth for MSMEs. The results suggest that financing for research and development expenditures, production diversification, new employment and advertising can significantly contribute to increased sales growth. We also find that spending on intellectual property, labor training and land and building acquisition have a negative moderating effect on the relationship between finance and sales growth.

Keywords: Finance-sale growth nexus; Micro, Small, and Medium Enterprises (MSMEs); Iranian economy; External financing

JEL Classification: G21, G32, G38, O16, O53

1. Introduction

The relationship between financing and firm growth has been widely studied in both developed and developing economies. A significant body of literature has focused on developed economies (e.g., Rahaman, 2011; Butler and Cornaggia, 2011; Siemer, 2019; Lee, 2020) and several studies have examined the relationship between financing and firm growth in the context of developing and transition economies (e.g., Ullah and Wei, 2017; Adomako et al., 2016; Fowowe, 2017; Regasa et al., 2020). These studies have highlighted the importance of various growth channels, such as R&D expenditures, production diversification, new employment, and labor training in allowing firms to identify optimal investment opportunities, promote innovation and productivity, and expand their operations (e.g., Rajan and Zingales, 1998; Beck et al., 2005, 2006). Despite its relevance, previous studies have not thoroughly examined the moderating role of these growth channels on the relationship between external financing and firm growth in the case of Iran.

This study aims to investigate the link between financing and growth in Micro, Small and Medium Enterprises (MSMEs) in Iran, and how various growth channels (such as R&D expenditures, intellectual property, production diversification, advertising, increase in working capital, new employment, labor training, and land and building acquisition) moderate this relationship. We anticipate that each growth channel has a distinct impact on the connection between external financing and firm growth. For instance, it is expected that spending on land and building acquisition may have a negative effect on the relationship between financing and sales growth, due to the low productivity of real estate assets for businesses (Pawson et al., 2021).

Our research focuses on the Iranian economy, which has recently faced two major challenges: the withdrawal of the U.S. from the Joint Comprehensive Plan of Action (JCPOA) and the return of economic sanctions in May 2018, leading to a sharp decline in the nominal GDP growth rate from 8.82% in 2016 to -2.25% in 2018 (World Bank, 2021). Additionally, the onset of the COVID-19 pandemic resulted in a 50% decline in sales growth for Iranian firms in the first two months of the outbreak (SRTC, 2020). However, since early 2022, firms have been seeking new sources of financing through bank loans and government grants, with the ratio of bank loans to deposits reaching over 82% (CBI, 2022a). Central Bank of Iran (CBI) data also shows that banking loans to the industrial sector grew by 160% from 2014-2019 (CBI, 2022b).

The aim of this study is to explore the impact of financing on growth in MSMEs during the challenging times of international sanctions and the COVID-19 pandemic. This paper makes a two contributions: first, it develops a new and comprehensive framework for assessing the moderating factors on the relationship between access to finance and firm growth. To achieve this, we utilize a unique dataset gathered from a survey of 486 MSMEs conducted between December 2019 and September 2020. Second, it provides an empirical examination of the finance-growth nexus in Iran in the context of the COVID-19 pandemic lockdown and the re-imposition of sanctions following the U.S. withdrawal from the JCPOA in May 2018. To the best of our knowledge, this is the first micro-level study of the Iranian business sector in this context.

In order to assist firms during crisis, the Iranian government has implemented policies aimed at providing financing through the banking network. By incentivizing banks and financial institutions, the government sought to increase their lending capacity and mitigate the negative effects of economic recession. Two policies were specifically implemented in this regard. First, the government has sought to accelerate the sale of banks' surplus assets in order to increase their reserves and enable more lending to firms. Second, the government aimed to improve the capital adequacy of state-owned banks, providing a stronger basis for lending to qualified firms (IPRC, 2019).

Despite these efforts, access to external financing remains a major obstacle for business success in Iran, even more than issues such as policy instability and inflation (WEF, 2017). This may be due to a mismatch between access to financing and the way financial resources are utilized in the business sector, as Beck et al. (2005) argue that the way in which financial resources are spent is more critical than access to finance for small firm growth.

Our analysis, using binary regressions, demonstrates a positive association between access to finance and growth in sales for MSMEs. Our findings indicate that external financing leads to overall growth for firms, with particularly strong growth rates for those firms that allocate financial resources to R&D expenditures, production diversification, new employment, and advertising. However, our results also suggest that firms' spending on intellectual property, labor training, and land and building acquisition may weaken the positive impact of external financing on firms' growth.

The structure of the paper is as follows: In section 2, we review the relevant theories and literature on the finance-growth nexus at both the national and firm level, and explore the main determinants of firm growth. In section 3, we describe the data and methodology. In section 4, we present and discuss the empirical results. Finally, in section 5 we offer our conclusion.

2. Theory and evidence

2.1. Finance-growth nexus at national level

Since the seminal work of Schumpeter (1911), a growing strand of literature has investigated the links between financial development and economic growth (for a review, see Levine, 1997; Ang, 2008; Valickova et al., 2015; Bijlsma et al., 2018). As a conclusion, it is shown that evolution of financial systems (as a mixture of financial markets, instruments, and intermediates) can lead to higher economic growth. Financial development may promote economic growth through various transmission channels. It may reduce transaction costs through effective provision of financial services and then provide more savings to invest in production processes that are economically attractive. Before making investment decisions, investors usually face large costs related to evaluating enterprises, ownerships, and market conditions. Due to that, investors may be reluctant to invest in projects with lower level of reliable information (Levine, 2005). In this situation, efficient financial intermediaries may decline the costs of acquiring and processing information and hence cause to optimal resource allocation (Boyd and Prescott, 1986).

In economies with more efficient financial system, resources usually allocate to the most profitable investment projects that may also raise the productivity of capital.[1] The provision of liquidity may also create incentives to invest a large body of savings in profitable long-term projects. In this situation, the average duration of investment projects usually raises which is likely to raise the productivity of capital stock (Thiel, 2001). In well-developed financial systems, policy initiatives with aiming to remove obstacles to allocate capital to the most profitable projects will stimulate economic growth (Khan and Senhadji, 2000). In this regard, banks and financial institutions can play a channel role to allocate financial resources to the most productive activity. In well-developed economies, more financial institutions, services, and products emerge due to increasing

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[1] For more discussion about this approach, see Greenwood and Jovanovic (1990).

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demand for financial services by firms and households, thereby cause to progress of the financial systems (Ang, 2008) and economic growth subsequently.

2.2. Finance-growth nexus at firm level

In addition to the macro-level analysis of the link between financial development and economic growth, a large body of empirical studies provides evidence on the positive role of finance on firms' growth. Table A1[2] overviews the recent and relevant studies divided by geographical scope, time period, methodological approach, and main findings. Most of these studies find that firms with access to financial resources have experienced faster growth than firms with financial constraints. This result is similar for both kinds of external and internal financial sources.

One of the most influential works on the subject is conducted by Beck et al. (2008) which use a cross-country data (44 countries and 36 industries in the manufacturing sector) and investigates the links between finance, firm size and growth. They argue financial development may disproportionately boost the growth of the firms. More specifically, the growth of small firms is disproportionately faster in countries with more advanced financial systems. They also find that in countries with well-developed financial system, small firms represent a higher proportion of total manufacturing value added than those in countries with lower-level of financial development. Beck et al. (2005) also investigate the role of legal and financial constraints as well as corruption on firms' growth in 4000 firms in 54 developed and developing countries. Their results show that the extent to which corruption and financial and legal imperfection constrain firms' growth is related to the size of the firms in the way that the smallest type of firms affected by all mentioned obstacles adversely. They also find interesting results about the national differences between the degree of obstacles and firms' growth. In details, firms that located in countries with higher level of underdeveloped systems are more affected by all obstacles than those operating in countries with less constraints. These results are in line with Demirgüç-Kunt and Maksimovic (1998) who find that active stock market and well-developed financial systems are the key factors in facilitating firm growth.

Over the last decade, a new strand of literature has discussed the importance of finance in firm entry (Cheratian et al., 2021), survival, and growth in time of economic and financial crisis (see

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[2] See Appendix A.

Cowling et al., 2012; Lee et al., 2015; Cowling et al., 2016; Cowling et al., 2018; and Eggers, 2020 survey study). As a common point of view, it is argued that small firms are the most vulnerable sector in face of financial crisis (Latham, 2009). During economic downturns, SMEs survival and growth may affect by financial constraints through some channels. Unlike large firms which are more able to absorb cyclical fluctuations in aggregate demand, SMEs are more sensitive to revenue growth uncertainty. In such negative economic conditions, SMEs usually suffer lack of competitive advantage in production and market share than their larger counterparts that may threaten their survivability (Bakhtiari et al., 2020). During the prolonged economic crisis, banks and financial institutions may retract on new lending to small firms because of liquidity freezes or imposing severe capital requirements by regulators (Bartoli et al., 2013). In this situation, small firms may suffer performance disruptions regarding their limited internal financing and higher dependency to external liquidity (Cheratian et al., 2022). Cowling et al. (2012) examine the SMEs financial constraints from the pre-recession (2007-2008) to the post-recession (2008-2010) period by using a UK longitudinal data source. They find that in time of recession, firms which have experienced revenue decline are more likely to increase demand for external finance. However, just a small proportion of larger and older firms succeed in accessing to external credit. In a similar study, North et al. (2013) analyse the effect of financial collapse on UK technology-based SMEs. As they argue, in time of economic volatility, these type of firms are financially more challenged than others due to the nature of R&D intensity and innovation in their activities. The results show that technology-based SMEs are especially face to more difficulty to access external credit as lenders are hardly accept to finance them. Similar results have been found in Lee et al. (2015) who examine the differential impact of financial constraints in two groups of UK innovative- and non-innovative SMEs.

The current literature clearly shows how financial characteristics of small firms such as liquidity, profitability, leverage, debt ratio, asset structure and credit worthiness change in time of economic recessions (Balios et al., 2016; Lisboa, 2017; Duarte et al., 2018). In this line, some studies have investigated the differences of financial characteristics between SMEs and large firms (Lisboa, 2017; Kudlyak and Sanchez, 2017), innovative and non-innovative SMEs (Lee et al., 2015) as well as young and old SMEs (Lisboa, 2017; Serrasqueiro et al., 2018).

2.3. Debates on firm growth channels

Research and Development (R&D)

Some studies find a positive relationship between R&D expenditures and firm growth (García-Manjón and Romero-Merino, 2012), whereas some other studies found insignificant (Winters and Stam, 2007; Stam and Wennberg, 2009) or negative (Freel and Robson, 2004) association between two variables. A number of studies show that R&D can be known as a driver of firm growth just among of fast-growh firms (Coad and Rao, 2008; Hölzl, 2009). As the growth of new start-ups causes to job creation and structural economic changes, entrepreneurial policies attempts to create favorable conditions for start-ups (Fischer and Reuber, 2003; Henrekson and Johansson, 2008). Growth-oriented firms are not able to keep their growth path unless they renovate or expand their resources with reference to alliances and product development (Baldwin and Gellatly, 2003; McKelvie and Davidsson, 2009).Thus, R&D activities make firms able to generate new goods and services, allied with other firms, and act as a growth driver (Stam and Wennberg, 2009). In accordance with this argument and if the R&D is known as a driver of firm growth, we have the following hypothesis:

H1: *Firms that utilize their funds for R&D expenditures experience stronger growth than their counterparts.*

Land and building

Recent evidence has documented that real estate boom has dual effects on firm performance. On the one side, real estate boom increases the value of firm-owned land and buildings and then result in firm's more innovation (Mao, 2021) and capital investment (Chaney et al., 2012) through enhancing external finance capacity. On the other side, real estate boom may cause firm's performance negatively. This is because price boom makes housing investment opportunities more attractive and divert capital resources from innovative sectors to non-tradeable sectors (Miao and Wang, 2014). In this line, Rong et al. (2016) examine the impact of housing price appreciation on Chinese manufacturing firms, and argue that real estate booms negatively affected manufacturing firm's innovation propensities. Therefore, our second hypothesis is:

H2: *Firms that utilize their funds for land and building purchases experience slower growth than their counterparts.*

Intellectual property

In new century that characterized by high technological innovation, product's short life cycle, and significant worldwide competition, firm competitive advantage is highly dependent on their ability to develop innovation (Artz et al., 2010). To benefit from innovation rights, firms need to protect their private knowledge from imitation through market rivals. Intellectual property rights (IPRs) in terms of patents, trademarks, trade secrets, and industrial designs keep firms' private innovation from immediate imitation during the period of their temporary monopoly (Gooderham, 2007). However, as the IPRs are costly to acquire and enforcement, it is usually argued that SMEs are disadvantaged to apply and enforce IPRs (Jensen and Webster, 2006) to suitable returns from their innovative activities (Macdonald, 2004). SMEs are usually face to financial barrier to allocate their limited investment funds for high-risk ventures such as IPRs right. Therefore, it has argued that using IPRs system does not equally suitable for all types of firms and industries, as it may be more appropriate for large and innovative firms rather that small and traditional ones.

Some studies examined the relationship between patents (as a main proxy of IPRs) and firm performance (Hughes and Mina, 2010; Chang et al., 2012; Bessler and Bittelmeyer, 2008; Artz et al., 2010). However, the overall findings of these studies are inconclusive. On the one hand, some indicate that patents have negative (Artz et al., 2010) and significant effect on firm growth and performance (in terms of sales growth, market value, or return on assets) (Rivette and Kline, 2000; Kretschmer and Soetendorp, 2001). On the other hand, a few studies find the positive and significant effect of patents on firm performance (Bessler and Bittelmeyer, 2008). Thus, we propose the following hypothesis:

H3: *Firms that utilize their funds for intellectual property rights may (or may not) experience stronger growth than their counterparts.*

Product diversification

Since the seminal works of Coase (1937) and Penrose (1959), many studies have investigated the role of diversification on firms' expansion from its original scale into other product markets. In this line, some studies suggest that there is not any relationship between diversification and firm performance, as they have no special advantages in time of starting. However, other studies show that diversification may generate multiple benefits (such as more access to financial resources and

reduce portfolio risk) for firms (Palich et al., 2000; Qian, 2002). To analyze the diversification-performance linkage, researchers have proposed a wide range of measurements for product diversification such as entry into new markets with new products (Ansoff, 1965), degree of market and product involvement (Kamien and Schwartz, 1975), and product lines expansion (Rumelt, 1974). According to the market-power vision, diversification may improve firms access to conglomeration power and then, diversified firms will thrive at the expense of non-diversified ones (Montgomery, 1994). Under this vision, growth-oriented managers undertake diversification strategies that may exploit scope economies and increase firms' market power. Thus, we propose that:

H4: *Firms that utilize their funds for product diversification (in terms of product line development and production expansion) experience stronger growth than their counterparts.*

Advertising

Advertising plays an important role in determining firm performance (Rust et al., 2004; Srivastava and Reibstein, 2005). Key elements of firm's intangible assets such as product differentiation and brand value are the main outcomes of investment in advertising. Advertising can stimulate the creation process of brand value and thus makes a competitive advantage for firm via product differentiations (Eng and Tat Keh, 2007). Therefore, importance of advertising in firm's reputational capital and market value may result in manager's considering to firm performance through increased advertising (Srivastava et al., 1999). There are other studies which showthat advertising can affect firm growth through of new product introduction (Nijs et al., 2001; Sridhar et al., 2014) and creation of new brand. This leads to our fifth hypothesis:

H5: *Firms that utilize their funds for advertising experience stronger growth than their counterparts.*

Working capital

There is consensus on the importance of working capital for all types of firms irrespective of their size, kind of activity, location, and degree of economic level. Working capital becomes a strategic function of a firm as it constitutes required funds to finance revenue-generating activities of firms. In this regard, the way of working capital management influences firm survival and its' overall financial performance (Cielen et al., 2004). As the profit maximization is the main target of firms

in the long-run, it cannot be achievable unless the firms enhance their efficiency strategies that measured by working capital (Bhatia and Srivastava, 2016). An efficient working capital policy may improve firm liquidity along with an implication on profitability (Smith, 1980). There is a strand of literature that investigates the role of working capital as a determinant of firm liquidity (Chiou et al., 2006; Kim et al., 1998), firm value (Smith, 1980), firm profitability (Gill et al., 2010; Abuzayed, 2012) and firm performance (Bhatia and Srivastava, 2016; Ren et al., 2019). With this in mind, we propose the sixth hypothesis as follows:

H6: *Firms that utilize their funds for working capital experience stronger growth than their counterparts.*

Human capital

Human capital can yield positive effect on firm performance (Le et al., 2007; Subramony et al., 2008). Qualified employees (in terms of education, knowledge, experience, and skills) usually constitute main body of the value of innovative new ventures and thus, firms with more human capital are able to implement new technologies and be more efficient than their counterparts (Shrader and Siegel, 2007). Human capital can increase owner's capability to exploring new opportunities. It also helps firms to acquire other strategic resources such as physical and financial capitals and assist them to collect new knowledge and skills (Unger et al., 2011). Since the last four decades, a large body of studies has investigated the relationship between human capital and firm success (see Crook et al., 2011 and Unger et al., 2011). Although a positive relationship between human capital and firm performance has been established in the most previous studies, the magnitude and circumstances which human capital may associated with firm performance has not been discussed well. Based on above discussion, we hypothesize that seventh hypothesis as follows:

H7: *Firms that utilize their funds for new employment experience stronger growth than their counterparts.*

Training

Regarding the rapid evolutionary changes in products, technologies, and systems, updating of workers' knowledge and skill is known as an important element of business performance (Kozlowski et al., 2000). According to the resource-based vision, firm utilizes resources (physical

and human capital) that enable it to improve their efficiency and effectiveness. Among the firm resources, human capital is known as a primary source that helps firms to reach a sustainable competitive advantage as it cannot be imitated or bought by market competitors (Barney, 1991). In this regard, training can provide required skills and knowledge for workers that may lead to higher firm performance (Thang et al., 2010). A growing body of empirical studies has investigated the link between training and firm performance and shows a positive relationship between them[3]. The importance of training in SMEs performance is also stressed in some studies. At the firm level, it is suggested that enhancing employees' skill and knowledge contribute to the firm's competitiveness, improve team working, interpersonal relations and reduce employee turnover (Blundell et al., 1999; Carmeli and Schaubroeck, 2005).

H8: *Firms that utilize their funds for training may experience stronger growth than their counterparts.*

3. Data and Methodology

3.1. Sample and data collection

The sample for this study was drawn from a survey of 500 Iranian Micro, Small, and Medium Enterprises (MSMEs) that employ 1-49 employees[4], of which 14 questionnaires were unusable due to missing responses, leaving 486 questionnaires for analysis.[5] The study employed a simple random sampling method, selecting five provinces out of 31 in Iran, taking into account both geographical distribution and level of development. The survey, conducted by the Academic Center for Education, Culture, and Research (ACECR), was administered between December 2019 and September 2020, and the respondents were the owners or senior managers of firms.[6] The sample firms from each province were proportionally selected based on the total number of firms in that province[7] and the data was collected through face-to-face interviews. The definition of each variable is provided in Table 1, and Table 2 presents the descriptive statistics of the variables.

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[3] See Thang et al. (2010) and Jiang and Messersmith (2018) survey studies.

[4] According to the definition of the Ministry of Industry, Mine and Trade, the small and medium enterprises are industrial and service units that have less than 50 employees.

[5] The population size of this study for five selected provinces is about 12,000 firms and the minimum sample size is calculated based on Cochran's formula. The unit of analysis is firm and the sample size is 486.

[6] A background on this project is available at the website of the ACECR: http://ergtm.acecr.ac.ir/fa/news/41121 (in Persian).

[7] The key characteristics of the collected survey are listed in Appendix B – Table B1.

Table 1 Variable definition

Group	Variable Name	Definition
Dependent variable		
Sale growth	SALE	1 if firm has sale growth in the past 12 months; 0 otherwise
Independent variable		
Access to external finance	AXF	1 if firm access to external finance in the past 12 months; 0 otherwise
Control variables		
Dependence to internal finance	DINF	1 if firm highly dependent to Internal finance; 0 otherwise
Age 1-5	A (1-5)	1 if age of firm between one to five years old; 0 - otherwise
Age 6-10	A (6-10)	1 if age of firm between six to ten years old; 0 - otherwise
Age 11-more	A (11-n)	1 if age of firm eleven years old and more; 0 - otherwise
Size_Micro	S(M)	1 if number of firm's employees between 1 to 9; 0 otherwise
Size_Small and Medium	S(S&M)	1 if number of firm's employees between 10 to 49; 0 otherwise
Access to technology	ATCH	1 if firm access to required technology; 0 otherwise
Owner education	OEDU	1 if the business owner has university degree; 0 otherwise
New employment	NEM	1 if the firm employed new labor in the past 12 month; 0 otherwise
Labor adjustment	LADJ	1 if the firm had a forced adjustment in the past 12 month; 0 otherwise
Cooperation	COP	1 if the firm has cooperative ownership; 0 otherwise
ISIC code dummy	ISIC(D)	1 if the firm classified on specific 2-digit ISIC code; 0 otherwise
Location dummy	LO(D)	1 if the firm located in specific province; 0 otherwise
Moderators		

Table 1 Variable definition

Group	Variable Name	Definition
R&D	RD	1 if the firm allocated external finance to research and development; 0 otherwise
Land and building	LB	1 if the firm allocated external finance to land and building; 0 otherwise
Intellectual property	INPR	1 if the firm allocated external finance to intellectual property; 0 otherwise
Production line development	PLD	1 if the firm allocated external finance to production line development, buy equipment, and or raw materials; 0 otherwise
Advertising	AD	1 if the firm allocated external finance to advertising; 0 otherwise
Increase working capital	INWC	1 if the firm allocated external finance to working capital; 0 otherwise
Increase production	INPD	1 if the firm allocated external finance to increase amount of production; 0 otherwise
Employment	EM	1 if the firm allocated external finance to employing new labor; 0 otherwise
Labor training	LAT	1 if the firm allocated external finance to labor training; 0 otherwise

3.2. Measures

3.2.1. Outcome variable

In this study, the primary focus is on the firm's sales growth as the dependent variable. To measure this variable, we use a binary indicator, which takes the value of "1" if the firm experienced sales growth in the past 12 months, "0" otherwise. The mean value of this variable is 0.248. We follow the approach adopted by Jones and Jayawarna (2010) and Rahaman (2011) by using sales growth over the past year as the dependent variable instead of other productivity measures, as it has been found to be less prone to measurement error (Ayyagari et al., 2008).

3.2.2. Explanatory variable of interest

In the survey, the respondents were queried about their access to external financing. To measure this variable, we adopt a binary indicator based on the approach used by Lopez-Garcia and Puente (2012) and Cowling et al. (2012). The variable takes the value of "1" if the firm's recent loan application was approved and was funded by the bank within the past 12 months, and "0" otherwise.

3.2.3. Explanatory moderating variables

The moderating variables in this study are the ways in which external financing is utilized by firms which include R&D, land and building acquisition, intellectual property investments, production line development, advertising, increases in working capital, production expansion, new employment, and labor training. To measure these factors, we use binary variables with value of 1 indicating that the firm's owner or manager stated "Yes" they have invested in that particular area, and 0 indicating "No".

3.2.4. Control variables

In addition to the variables of interest, access to external finance, and moderating variables, we also control for other important factors that have been identified to have an impact on firms' sales growth in our estimation models. These factors include a firms' dependence on internal finance (e.g., Lee et al., 2015), age of the firm broken down into three categories (1-5 years, 6-10 years, and 11 years or older) (e.g., Coad, et al., 2018), firm size (e.g., Cowling et al., 2018), access to technology (e.g., Sakas, et al., 2014), owner education level (e.g., Maliranta and Nurmi, 2019), new employment (e.g., Panayotopoulou et al., 2010), labor adjustment (e.g., Qiu, 2019), and cooperation (e.g., Cowling et al., 2015). The definitions of these variables can be found in Table 1.

Table 2 Descriptive Statistics

Variables	Abbreviation	Mean	S.D.	Min	Max	Obs.
Outcome variable						
Sale Growth	SALE	0.248	0.432	0	1	486
Explanatory variable of interest						
Access to External Finance	AXF	0.209	0.407	0	1	486
Explanatory control variables						
Dependence to Internal finance	DINF	0.772	0.448	0	1	486
Age 1-5	A (1-5)	0.234	0.424	0	1	486
Age 6-10	A (6-10)	0.234	0.424	0	1	486
Age 11-more	A (11-n)	0.493	0.500	0	1	486
Size_Micro	S(M)	0.401	0.490	0	1	486
Size_Small and Medium	S(S&M)	0.549	0.498	0	1	486
Access to Technology	ATCH	0.658	0.474	0	1	486
Owner Education	OEDU	0.656	0.475	0	1	486
New Employment	NEM	0.668	0.471	0	1	486
Labor Adjustment	LADJ	0.524	0.499	0	1	486
Cooperation	COP	0.020	0.142	0	1	486
Explanatory Moderators						
R&D expenditures	RD	0.491	0.500	0	1	486
Land and building	LB	0.407	0.491	0	1	486
Intellectual property	INPR	0.545	0.498	0	1	486
Production line development	PLD	0.664	0.472	0	1	486
Advertising	MA	0.648	0.478	0	1	486
Increase working capital	INWC	0.662	0.473	0	1	486
Increase production	INPD	0.658	0.474	0	1	486
Employment	EM	0.594	0.491	0	1	486
Labor training	LAT	0.512	0.500	0	1	486

3.3. Model

The empirical model is specified as follows:

$$
\begin{aligned}
Sales\ Growth_i \qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad \text{Eq.(1)}\\
= \beta_0 + \beta_1 \cdot Access\ to\ External\ Finance_i + \beta_2\\
\cdot Type\ of\ spending\ of\ external\ financing_i + \beta_3\\
\cdot [Access\ to\ external\ finance\\
\times Type\ of\ spending\ of\ external\ financing]_i + \sum \beta_c \cdot Controls_c\\
+ \varepsilon_i
\end{aligned}
$$

3.4. Estimation method

Given the binary nature of our dependent variable, sale growth, we have chosen to use Probit regression with robust standard errors, as advised by Long (1997), Aldrich and Nelson (1984), and Cameron and Trivedi (2010). According to Cohen et al. (2014), moderation takes place when the independent variable and the moderating variable have mutual effects on variance of dependent variable than that explained by the direct effect.

Our next step is to explore the interaction effects of moderators by conducting separate tests for each individual moderator.[8] This approach enables us to evaluate the impact of each moderator on a larger sample size and detect any potential interaction effects among the moderators, as outlined by Wilson (2010).

4. Empirical Results

4.1. Probit Regression

The results of our Probit regressions are presented in Table C1[9]. Column 1 lists the key independent variable, control variables, moderators, and interaction terms. Column 2 shows the model estimated without any moderating effect, while columns 3 to 11 of Table C1 repeat the estimation by including each moderator separately. In each specification, we have included the

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[8] It should be noted that we checked the VIF values of the explanatory varibales and there is no issue of multicolleanirity in our estimations.
[9] See Appendix C.

same control variables. Across the ten estimations, the results indicate a significant and positive relationship between access to external finance and firms' sale growth in Iran, a finding that aligns with previous research such as Beck et al. (2005, 2008), Cowling et al. (2012, 2016, 2018), and Eggers (2020). Additionally, the main effects in Table C1 reveal that spending on land and building has a negative association with sale growth, while spending on production expansion has a positive relationship. Furthermore, we observe a positive interaction term between access to external finance and new employment on firm sale growth in the Table C1. In terms of the control variables, our findings reveal that dependence on internal finance has a significantly positive relationship with the sales growth of firms, which aligns with the research of Rahaman (2011) that constrained firms can overcome financing-induced growth constraints by accumulating more internal funds. Additionally, the results suggest that young firms (those within the age range of 1 to 5 years old) experience greater growth compared to older firms, a finding consistent with Navaretti et al. (2014). Furthermore, we find evidence that access to technology positively impacts the sales growth of a firm, a result that supports the claims of Sakas et al. (2014) that firms can gain a sustainable competitive advantage through access and utilization of technology. Our results also indicate that owner education is positively linked to sales growth, in line with the findings of Maliranta and Nurmi (2019). Additionally, our findings reinforce the evidence that firm growth and productivity can be enhanced through the hiring of new labor, as per the research of Subramony et al. (2008). Our results also show that the relationship between labor adjustment and firm growth is negative, which concurs with the idea that job insecurity can lead to lower effort of other workers, reduction of employees' involvement in their jobs, and weaker commitment to the company as stated by Arocena et al. (2007).

4.2. Marginal Effects

The following discussion of results examines the Probit marginal effect of moderators. Using coefficient estimates from the Probit model does not allow for any statistical inferences about independent and interaction variables for two reasons. Firstly, an independent variable's marginal effect does not equal the variable's estimated coefficient. Secondly, an interaction variable in a nonlinear model has its own marginal effect, which is conditional on all values of the independent variable in the sample. Therefore, in a nonlinear model such as Probit, the effect of a moderator variable on the relationship between the independent variable and the dependent variable is

examined by testing the statistical significance of the values of the moderator variable's marginal effect across all sample values, as per Brambor et al. (2006). Table 3 summarizes the average marginal effects after Probit estimates, with robust standard errors, on the probability that a firm spends on R&D, land and building, intellectual property, production line development, advertising, increasing working capital, production expansion, hiring new labor and finally training.

Table 3 Average marginal effects after Probit estimation, dependent variable: sale growth

	at (0)	at (1)
dydx (AXF) at RD = (0 1)	0.182***	0.294***
	[0.064]	[0.082]
dydx (AXF) at LB = (0 1)	0.199***	0.269***
	[0.063]	[0.086]
dydx (AXF) at INPR = (0 1)	0.217***	0.234***
	[0.070]	[0.073]
dydx (AXF) at PLD = (0 1)	0.203**	0.246***
	[0.080]	[0.065]
dydx (AXF) at AD = (0 1)	0.231***	0.226***
	[0.088]	[0.061]
dydx (AXF) at INWC = (0 1)	0.085	0.286***
	[0.078]	[0.064]
dydx (AXF) at INPD = (0 1)	0.156**	0.260***
	[0.076]	[0.064]
dydx (AXF) at EM = (0 1)	0.122*	0.317***
	[0.072]	[0.069]
dydx (AXF) at LAT = (0 1)	0.241***	0.211***
	[0.068]	[0.073]

Note: (a) *** $p<0.01$, ** $p<0.05$ and * $p<0.1$. (b) Standard Error are reported in brackets. (c) AXF: Access to External Finance, RD: R&D expenditures, LB: Land and building, INPR: Intellectual property, PLD: Production line development, AD: Advertising, INWC: Increase working capital, INPD: Increase Production, EM: Employment, LAT: Labor training.

The results of our analysis reveal that the marginal outcomes from the interaction terms are more informative than the Probit model. Specifically, the marginal effect of all interaction terms is statistically significant, except for increasing working capital, which is insignificant. To further understand these significant marginal effects, Figure 1 presents the marginal effect plots for the interaction term. These plots illustrate the relationship between access to finance and sale growth, depending on firms' expenditures on moderating factors.

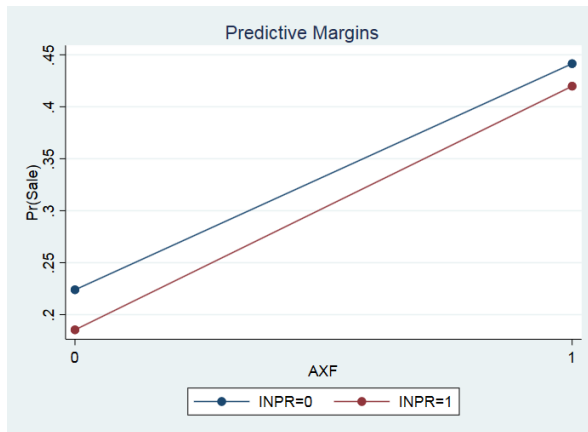**Figure 1 (A)-(H)** Probit marginal effect plots for the interactive variables
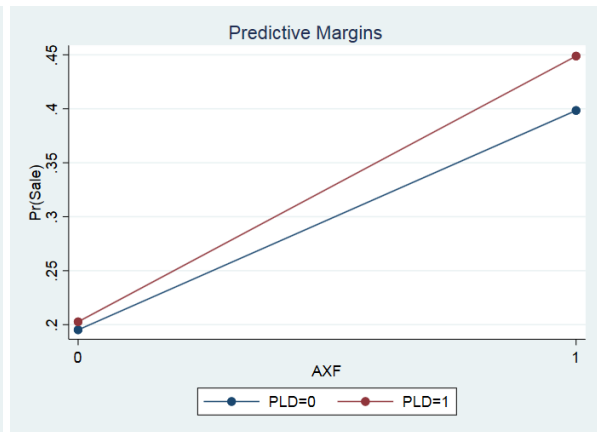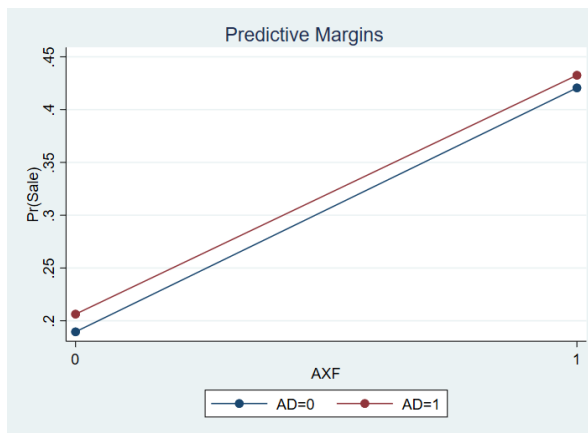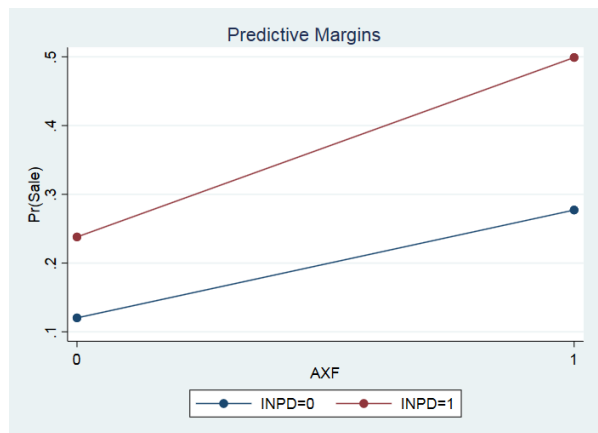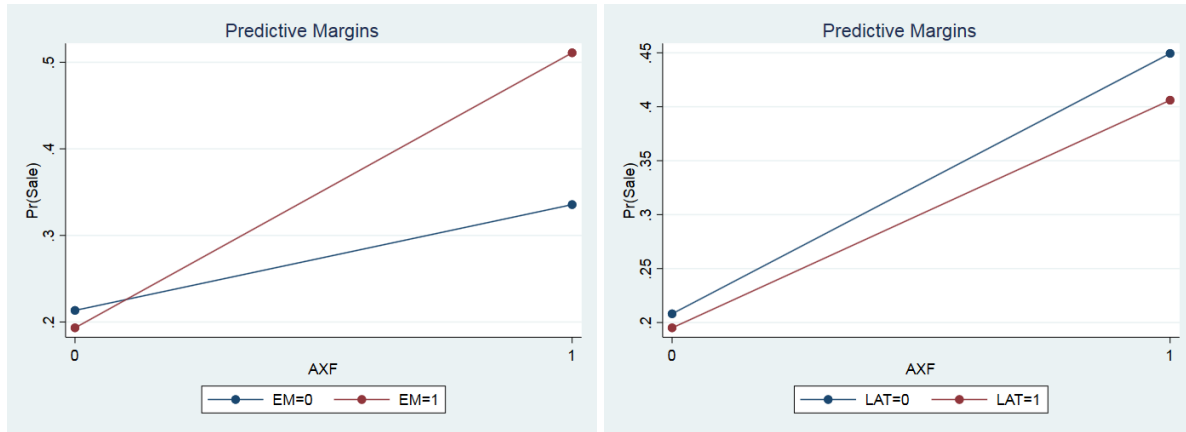
(A)
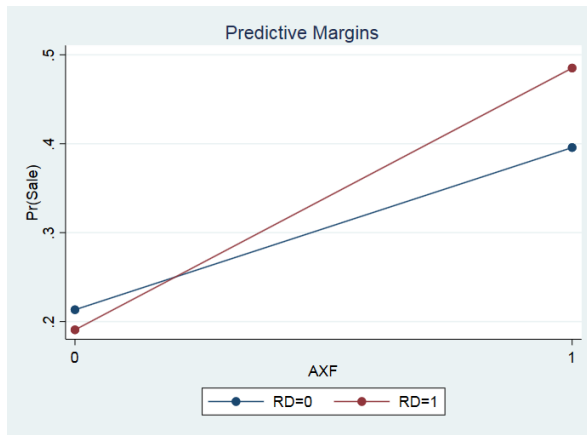
(B)
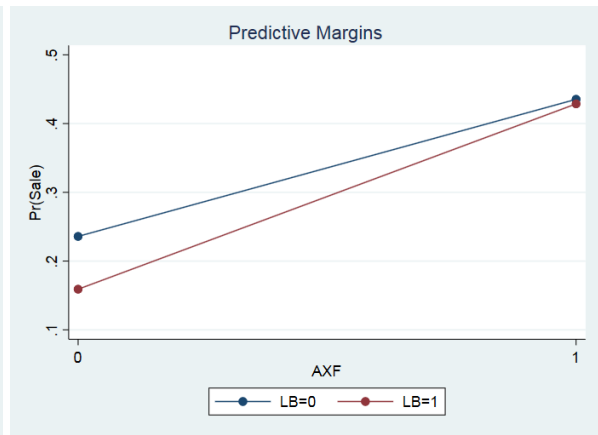
(C)

(D)

(E)

(F)

(G)

(H)

Notes: All Figures show the positive relationship between access to external finance (AXF) and sales growth (Sale) with interaction effects of R&D expenditures (Figure A), Land and building (Figure B), Intellectual property (Figure C), Production line development (Figure D), Advertising (Figure E), Increase production (Figure F), Employment (Figure G) and Labor training (Figure H).

Plot A of Figure 1 shows the relationship between R&D expenditure and sales growth. Firms that have access to external finance experience higher sale growth than firms without access, regardless of whether or not they spend on R&D. Furthermore, financed firms that expend on R&D experience more sales growth than financed firms that do not expend on R&D. However, not financed firms that spend on R&D experience slightly lower sales growth than those firms that do not spend on R&D. Thus, our results support H1 hypothesis (*Firms that utilize their funds for R&D expenditures experience stronger growth than their counterparts*).

Plot B of Figure 1 illustrates the relationship between the spending on land and building and sales growth. Expending on buying building property and land does not have a significant impact on sales growth of financed firms. However, when firms without external financing spend on real estate acquisitions, they have lower sale growth compared to firms without external financing that do not spend on buying land and building. Therefore, the results support H2 hypothesis (*Firms that utilize their funds for land and building may experience slower growth than their counterparts*).

Plot C of Figure 1 illustrates the relationship between spending on intellectual property and sales growth. Regardless of whether or not a firm expends on intellectual property, not financed firms have less sale growth than financed firms, and financed firms that expend on intellectual property have less sale growth than financed firms that do not expend on intellectual property. Therefore,

our findings support H3 hypothesis (*Firms that utilize their funds for intellectual property rights may experience slower growth than their counterparts*).

Plot D and E of Figure 1 depict the relationship between product diversification (in terms of spending on production line development and production expansion) and sales growth. Allocating external finances for diversification has a significantly greater impact on sale growth compared to financed firms that do not expend on diversified activities. However, when firms are not financed, spending on production line development does not have a significant impact on sales growth. Therefore, we can accept H4 hypothesis (*Firms that utilize their funds for product diversification (in terms of product line development and production expansion) experience stronger growth than their counterparts*).

Figure 1, Plot E illustrates the correlation between advertising expenditures and sales growth. It is observed that, regardless of whether they have external financing or not, firms with low expenditure on advertising have lower sales growth compared to those that do. Additionally, firms with external financing and high advertising expenditure have higher sales growth compared to those without. Overall, the results suggest that advertising has a positive impact on sales growth, thereby supporting the H5 hypothesis that *firms that invest in advertising experience stronger growth than their counterparts*.

Similarly, Figure 1, Plot G showcases the relationship between spending on new hires and sales growth. It is found that firms with external financing have higher sales growth regardless of whether they spend on new hires or not. Further, financed firms that invest in new hires have higher sales growth compared to those that do not. However, for non-financed firms, spending on new hires leads to a decrease in sales growth. These findings support the H7 hypothesis that *firms that invest in new hires experience stronger growth than their counterparts*.

"Figure 1, Plot H illustrates the correlation between spending on labor training and sales growth. It is observed that external financing for labor training has a negative impact on sales growth, and firms that invest in labor training experience lower sales growth. This trend is also observed in firms that do not have external financial sources. These findings reject the H8 hypothesis that *firms that invest in training may experience stronger growth than their counterparts*. Our results align with previous studies, such as Le et al. (2010), who found that public expenditure efficiency is lower in oil-rich countries compared to other developing countries. Farzanegan and Thum (2020)

also found that dependency on oil rents has a dampening effect on the quality of education, particularly in countries with weaker institutions. Akbarian and Famkar (2011) found that public expenditures on education in Iran are negatively associated with economic growth. It is possible that the effect of training on sales growth of firms is only observable in the long-term, which is not possible to estimate within our survey sample.

Overall, our findings suggest that there is a positive relationship between access to finance and firm growth. External financing is beneficial for firm growth, particularly for financed firms that invest in R&D (García-Manjón and Romero-Merino, 2012), production line development, advertising (Rust et al., 2004; Srivastava and Reibstein, 2005), production expansion and hiring new employees (Le et al., 2007; Subramony et al., 2008). However, it is important to note that while these investments have a positive impact on firm growth, spending on buying land and building (Miao and Wang, 2014; Rong et al., 2016), intellectual property (Jensen and Webster, 2006; Macdonald, 2004) and training (Farzanegan and Thum, 2020) have a significant negative effect on the finance-growth relationship. .

5. Conclusion

We investigate the impact of external financing on sale growth of Micro, Small, and Medium Enterprises (MSMEs) in Iran. Utilizing survey data from 486 MSMEs conducted between December 2019 and September 2020, we employ Probit regression to analyze the relationship between access to finance and sales growth. Additionally, we examine the role of the type of spending on the final association between finance and sales growth.

Our findings reveal that external financing has a positive association with the sales growth of MSMEs in our sample. Furthermore, we show that allocating funds towards R&D expenditures, production line development, production expansion, employment, and advertising can enhance the positive association between finance and sales growth. On the other hand, the results suggest that spending on land and building, intellectual property, and labor training are less likely to amplify this positive association.

Banking with MSMEs encompasses a broader range of services beyond just providing loans and facilities. These services can include financial support, legal support, training, counseling, information, technical and technological support. However, many Iranian banks do not offer these

additional services, and there is a lack of clear regulations or frameworks for financial monitoring, evaluation, and consulting services (IPRC, 2016). Furthermore, existing regulations and procedures for providing financial support to MSMEs through Iranian banks are uncoordinated and lacking in efficiency (IPRC, 2016).

In order to address these issues, it is essential for banks and MSMEs to establish strong collaborative relationships. Banks should implement centralized monitoring and evaluation against pre-set targets of firms or outsource loan screening to ensure the proper use of funds and minimize risks (De la Torre et al., 2010). As of 2021, a significant portion of loans granted by banks have been for working capital of firms (CBI, 2022c).[10] In 2022, the government has implemented a credit management policy in the banking system transformation document, aimed at diversifying financing methods, strengthening bank supervision structures, directing credit towards knowledge-based production, and facilitating access to loans for households and businesses. Based on the findings of this study, it is recommended that banks direct credit towards R&D, product diversification, new employment, and advertising.

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[10] https://cbi.ir/page/24637.aspx

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Appendix A – Table A1 Access to finance and firm growth: review of related studies

Author(s) and year	Sample size and time period	Methodology	Main findings
Rahaman (2011)	UK (1991-2001)	Dynamic panel regression	The results show that the effect of internal financing on firms 'growth reduces with more access to external bank credit. It means that external financing is known as the primary source of financing for firm growth.
Regasa et al. (2020)	Ethiopia (2011-2015)	OLS, Logit, and IV models	The result shows a negative relationship between access to external finance and firm growth. Regarding the Ethiopian financial system which is dominated by state-owned banks and financial institutions, the financial sources may not allocate to the firms with the highest rate of return to capital.
Ullah and Wei (2017)	Transition economies (2002-2014)	OLS and Panel fixed effect	Firms with access to formal financial sources have experienced faster growth that their counterparts with informal finance. This result holds after controlling for country economic development, firms' characteristics, and potential endogeneity.
Fowowe (2017)	30 African countries (2006-2012)	Panel data	Regarding the findings, financial constraints lead to a significant and negative effects on firm growth. Furthermore, firms with no financial constraints have experienced faster growth than firms with financial constraints.
Beck et al. (2015)	China (2009)	OLS and Probit	There is a positive relationship between access to external finance and initial investment for microenterprises. Furthermore, access to informal finance leads to firm growth in terms of sale and number of employees.
Yazdanfar (2012)	Sweden (2006-2007)	Seemingly unrelated regression model	Access to internal finance is positively related to Swedish firm growth. In addition, some of firm characteristics such as age, size, and industry affiliation influence firm growth.
Girma and Vencappa (2015)	India (1998-2008)	Several econometric issues	Bank and non-bank financial sources affect positively on firm productivity growth. However, among the financial sources, bank loans have the largest and government borrowings have the least effects on firm growth.

Appendix A – Table A1 Continued

Author(s) and year	Sample size and time period	Methodology	Main findings
Carpenter and Petersen (2002)	US (1980-1992)	Panel data	There is a slight relationship between growth and internal finance for those kinds of firm with a little or no use of external finance. It means that small firm growth is constrained by internal finance.
Kiendrebeogo and Minea (2017)	Egypt (2003-2008)	Probit model	According the results, access to financial liquidity improve export participation of Egyptian firms, whereas constraints decrease it.
Siemer (2019)	US (2007-2009)	Difference in Difference	During the great recession, financial constraints decreased small firms' employment growth by 4-8 percentage points relative to large ones and by 7-9 percentage points in young firms in comparison of old ones.
Lee (2020)	Korea (2008-2017)	Panel data	Firms with internal cash flow constraints tend to grow more slowly than those without any constraint.
Adomako et al. (2016)	Ghana (-)	Moderated hierarchical regression	The results show that financial literacy (as a moderator) positively improve the finance-firm growth nexus.
Beck et al. (2005)	54 countries (1995-1999)	Panel data	The findings show that the extent to which corruption, legal and financial underdevelopment constraint firm growth is highly depended to the firm size. In other words, the smallest firms are the most adversely affected by legal and financial obstacles.
Kiani et al. (2012)	Taiwan (1997-2003)	Principal component analysis	The results suggest that firms with self-financing (and those which are not rely heavily to external sources) may grow slower in time of booms. However, these types of firms may keep their surviving and outperform after the bust.

Appendix A – Table A1 Continued

Author(s) and year	Sample size and time period	Methodology	Main findings
Yazdanfar and Turner(2013)	Sweden (2007-2008)	Seemingly unrelated regression model	The authors found that access to liquidity has positively related to the firm growth.
Nizam et al. (2021)	ASEAN 5 countries (2015-2016)	OLS with threshold	The results show a non-linear effect of financial inclusion on firm growth. In detail, after a certain threshold point, financial inclusion put a negative effect on firm growth.
Hyytinen and Pajarinen (2005)	Finland (1997-1998)	Panel data	The results show that firm excess growth made possibly by external finance and is associated with high quality disclosure.
Guariglia et al. (2011)	China (2000-2007)	GMM	In China, the state owned enterprises have not affected by liquidity constraints. Furthermore, financial slack represents a binding constraint for those kind of private firms which operating in coastal regions.
Levine and Warusawitharana (2021)	European countries (2000-2010)	GMM	Firms with higher financial constraints face a higher sensitivity of future productivity growth to debt growth. It means that financial constraints put negative effect on firm productivity growth.
Du and Girma (2012)	China (1998-2005)	OLS	Firm size plays an important role in the way financial structure affects the growth process. Furthermore, access to external finance is more important for large firms, while small firm growth is more relative to their self-financing.
Butler and Cornaggia (2011)	US (2000-2006)	Triple differences	According to the results, firm production growth is more in areas with relatively more access to finance.

Appendix A – Table A1 Continued

Author(s) and year	Sample size and time period	Methodology	Main findings
Beck et al. (2008)	44 countries (1980-2000)	Panel data	The overall results show that financial development put a disproportionately positive effect on small firm growth.
Bellone et al. (2010)	France (1993-2005)	Probit and GMM	Access to health financial resources encourage firms to become exporters. The results also show that financial constraints known as a main barrier of firm export participation.
Brown and Earle (2017)	US (1990-2009)	OLS and IV	The results show an increase of 3-3.5 jobs in US firms in the first 3 years after loan reception. This finding is highly robust across all the variations and different econometric methods.
Hossain et al. (2020)	Bangladesh (2015)	Partial least square	The authors found that both finance and financial literacy have positive and significant effect on small firm financial growth.
Kumarasamy and Singh (2018)	Asia-Pacific countries (2002-2006)	Probit	Access to finance (in term of more benefit from bank credits) enable firms to enter export markets easily.
Edjigu (2016)	Ethiopia (2000-2008)	GMM	The results indicate that cash flow and leverage ratio are the main determinants of firm growth. In addition, financial slack significantly affects the growth of smaller firms.
Ayyagari et al. (2021)	70 developing countries (2004-2011)	Linear probability model (LPM)	The overall results show that increased access to finance leads to employment growth especially among MSMEs.

Appendix B – Table B1 Survey of technical data

	Tehran	Mazandaran	Ilam	Kerman	Razavi	Total
Firms*	5576	1850	259	1780	2621	12086
Sampling	159	99	29	100	99	486
Size						
Micro (1-9)	65	31	15	34	50	195
Small and Medium (10-49)	94	68	14	66	49	291
Age						
Less than 5 years old	22	27	8	27	21	115
6-10 years old	41	29	9	30	22	131
11 years old and more	86	43	12	43	56	240

Note:* total registered firms in each province

Appendix C – Table C1 Results of Probit Regression Models

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Dependent Variable: Sale Growth										
Independent Variable										
AXF	0.800***	0.634***	0.682***	0.748***	0.726***	0.821***	0.364	0.697**	0.447*	0.835***
	[0.175]	[0.221]	[0.212]	[0.238]	[0.277]	[0.298]	[0.270]	[0.309]	[0.256]	[0.230]
Control Variables										
DINF	0.333*	0.332*	0.361**	0.356**	0.329*	0.323*	0.302*	0.283	0.349**	0.344**
	[0.171]	[0.173]	[0.171]	[0.176]	[0.171]	[0.349]	[0.174]	[0.174]	[0.171]	[0.170]
A (1-5)	0.839*	0.806*	0.917**	0.863**	0.816*	0.836*	0.719*	0.846**	0.798*	0.862**
	[0.431]	[0.425]	[0.429]	[0.425]	[0.429]	[0.430]	[0.410]	[0.416]	[0.417]	[0.434]
A (6-10)	0.676	0.649	0.746*	0.699	0.654	0.674	0.565	0.696*	0.692	0.692
	[0.433]	[0.427]	[0.432]	[0.428]	[0.431]	[0.434]	[0.411]	[0.417]	[0.421]	[0.436]
A (11-n)	0.488	0.449	0.526	0.497	0.462	0.674	0.378	0.518	0.471	0.505
	[0.424]	[0.420]	[0.422]	[0.419]	[0.422]	[0.434]	[0.400]	[0.407]	[0.409]	[0.427]
S(M)	0.225	0.212	0.209	0.222	0.238	0.239	0.252	0.277	0.234	0.228
	[0.319]	[0.321]	[0.322]	[0.321]	[0.320]	[0.322]	[0.326]	[0.327]	[0.325]	[0.320]
S(S&M)	0.108	0.105	0.100	0.102	0.133	0.124	0.192	0.167	0.119	0.113
	[0.298]	[0.299]	[0.300]	[0.299]	[0.301]	[0.299]	[0.304]	[0.305]	[0.304]	[0.299]
ATCH	0.269*	0.271*	0.294*	0.280*	0.263	0.264*	0.189	0.231	0.281*	0.274*
	[0.158]	[0.158]	[0.158]	[0.160]	[0.159]	[0.158]	[0.160]	[0.160]	[0.161]	[0.159]
OEDU	0.347**	0.330**	0.308*	0.343**	0.338**	0.338**	0.293*	0.330**	0.346**	0.346**
	[0.160]	[0.161]	[0.162]	[0.160]	[0.161]	[0.161]	[0.163]	[0.160]	[0.161]	[0.160]
NEM	0.863***	0.873***	0.868***	0.882***	0.848***	0.860***	0.831**	0.852***	0.849***	0.870***
	[0.175]	[0.175]	[0.177]	[0.175]	[0.176]	[0.175]	[0.176]	[0.183]	[0.176]	[0.178]
LADJ	-0.424***	-0.429***	-0.443***	-0.415***	-0.422***	-0.428***	-0.430***	-0.431***	-0.421***	-0.432***
	[0.144]	[0.145]	[0.147]	[0.145]	[0.144]	[0.145]	[0.145]	[0.147]	[0.144]	[0.146]
COP	-0.451	-0.462	-4.79	-0.431	-0.460	-0.457	-0.575	-0.526	-0.468	-0.449
	[0.568]	[0.565]	[0.0835]	[0.571]	[0.562]	[0.569]	[0.585]	[590]	[0.551]	[0.572]

Appendix C – Table C1 Continued

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
D ISIC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
D LOC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Moderators: main										
RD		-0.096 [0.169]								
LB			-0.338** [0.171]							
INPR				-0.164 [0.178]						
PLD					0.032 [0.189]					
AD						0.072 [0.298]				
INWC							0.270 [0.186]			
INPD								0.551*** [0.205]		
EM									-0.085 [0.177]	
LAT										-0.055 [0.168]
Interaction terms										
AXF×RD		0.374 [0.340]								
AXF×LB			0.317 [0.358]							

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Appendix C – Table C1 Continued

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Interaction terms										
AXF×INPR				0.096						
				[0.334]						
AXF×PLD					0.124					
					[0.339					
AXF×AD						-0.035				
						[0.349]				
AXF×INWC							0.582			
							[0.364]			
AXF×INPD								0.162		
								[0.361]		
AXF×EM									0.637*	
									[0.332]	
AXF×LAT										-0.079
										[0.325]
Model fit statistics										
C	-6.487***	-6.358***	-6.199***	-6.410***	-6.479***	-6.533***	-6.514***	-6.768***	-6.397***	-6.496***
	[0.669]	[0.682]	[0.687]	[0.682]	[0.684]	[0.697]	[0.682]	[690]	[0.684]	[0.682]
N. Obs.	478	478	478	478	478	478	478	478	478	478
W. chi2	422.20	420.61	407.94	425.74	422.50	421.50	427.02	393.44	423.71	422.70
Prob	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Log L.	-217.09	-216.46	-215.28	-216.70	-216.93	-217.01	-212.83	-210.83	-214.99	-216.93

Note: (a) *** $p<0.01$, ** $p<0.05$ and * $p<0.1$. (b) Robust Standard Error are reported in brackets. (c) AXF: Access to External Finance, DINF: Depencence to internal finance, A(1-5): Age 1-5 years, A(6-10): Age 6-10 years, A(11-more): Age 11-more years, S(M): Size Micro, S(S&M): Size Small and Medium, ATCH: Access to technology, OEDU: Owner education, NEM: New employment, LADJ: Labour adjustment, COP: Cooperation, D ISIC: Dummy ISIC code, D LOC: Dummy Location, RD: R&D expenditures, LB: Land and building, INPR: Intellectual property, PLD: Production line development, AD: Advertising, INWC: Increase working capital, INPD: Increase Production, EM: Employment, LAT: Labor training.