# Financing Gap and SME Employment Growth: Beyond Access to Finance

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**Abstract**

The key aim of the research is to investigate the relation between the perceived changes in financing gap and employment growth by SMEs in the EU. The paper builds on and extends the analysis of SAFE survey data to focus on the question of employment creation which is at the core of the current economic policy debate in the EU. The study uses European firm-level data of micro, small and medium-sized firms employing less than 250 employees from the 11th wave of the EC/ECB Survey conducted in 28 countries of the European Union. We hypothesize that there is a negative relation between perceived constraint in access to finance and job creation, however, when controlling for firm turnover changes, this relationship becomes insignificant. To test the hypotheses, we construct a multinomial logistic regression model with the dependent variable being a self-reported direction of a change in the number of employees in the last 6 months.

The main finding from the research is that changes in the financing gap do not appear to be a constraint for growth in employment but is strongly correlated with job destruction. Other factors are important for employment growth, such as turnover growth, availability of customers and skilled workers, and innovations. Access to finance is, therefore, important specifically for the stability of the employment.

The novel aspect of our research is that it analysed the role of the perception of accessibility of external finance. While many papers studied the influence of the actual availability of financing or the actual constraints, our study points to the relationship between the opinion of the business owners and business growth. To an important degree business decisions are influenced by the perceptions of the business owners to receive financing which may or may not materialize in the reality. Creating access is a necessary condition but appears to be tempered by the perceptions of business owners. Correcting for misperceptions which lead to self-exclusion may contribute to reducing job destruction by small firms.

**Key Words:** financing gap, employment, SME, SAFE database

## 1. Introduction

Persistent high unemployment in many EU countries prompts governments to seek new job creation options. Promoting jobs through self-employment and small businesses is an alternative strategy that carries high hopes and attracts a lot of policy attention on the theory that small businesses create the majority of jobs in the economy.

About 60% of the population in the EU member states is employed in firms of less than 250 staff. However, when looking at the job dynamics there is high volatility in employment creation, net contribution to job creation by micro, small and medium-sized companies varies from country to country and from year to year (Eurostat). Access to finance is one of the crucial determinants of business expansion (Beck et al. 2006). Liquidity constraints influence firm's investment expenditure, demand for products, labor and services. However, the link between financing and the decisions of business owners on staff employment in different sales or turnover growth scenarios has not been extensively studied. The majority of research focuses on the determinants of firm growth using changes in the level of employment and turnover interchangeably. Finding key factors for both employment and turnover growth may help the policy makers to create efficient policies.

In this paper we examine the influence of contextual factors on the changes in employment by SMEs using firm-level data from 28 countries of the European Union. Our main concern is to investigate the direct impact of constraints in access to finance on employment controlling for the effect of changes in turnover. Our paper contributes to the growing literature on finance and job creation.

The rest of the paper is organized as follows: Section 2 summarizes the findings on the role of access to finance and firm-level factors employment creation. Section 3 describes the data and measurements. Section 4 presents the empirical findings, and Section 5 concludes.

## 2. Literature review

There have been numerous studies on the impact of access to finance on firm growth, specifically on employment creation.

Nickell et al. (1999) focused on impact of financial pressure on several aspects of company behavior and found that increases in interest payments have large negative effect on employment. Benito et al. (2002) expanded the types of corporate behaviour by identifying identified significant effects of financial pressure on fixed investment, inventories and employment, distinguishing between both permanent and temporary employment. The other study (Fernandes et al. 2014) which analysed the impact of financial pressure, defined as interest burden, found that it negatively affects firms' employment decisions. The impact of the financial pressure on employment was more potent for firms classified as financially constrained and operating in periphery economies during the financial crisis. Yazdafar et al. (2012) who empirically examined the firm-level creation determinants among Swedish microfirms also concluded that increased availability of liquidity is positively related to job creation.

However, the studies on the relationship between firm's leverage and job creation have been mixed. While some researchers found that employment decreases with leverage ((Nickell et al. 1991, Sharpe 1994). the others found that leverage is positively related to job-creation levels among micro firms (Yazdanfar et al. 2012).

Several studies on the relationship between firm-level characteristics and job creation show that different types of firm have different propensity to generate employment. Job creation rates are higher in small firms (Broersma et al. 1997, Oliveira et al. 2006) and in the young ones (Oliveira et al. 2006). A positive correlation is found between sales and employment growth (Shepherd et al. 2009). For some high-growth firms changes in the employment are strongly correlated with sales (Delman et al. 2003), however sales and employment growth respond differently to a variety of determinants (Baum et al. 2001). The correlation between sales and employment was further disentangled by Coad (2007) who found that employment growth has a large effect on sales growth, and the bulk of this relationship appears to be contemporaneous. The reverse causality (effect of sales growth on employment) appears to be statistically significant, but the magnitude of this effect is rather small.

As to the innovations, various channels exist through which different kinds of innovation may destroy existing jobs (displacement effects) or may create new jobs (compensation effects). In addition, different types of innovations, such as product and process innovation, influence employment via different channels. In general, the majority of empirical studies finds an employment-stimulating effect of product innovation whereas the effect of process innovations is ambiguous ranging from significantly negative to positive (Licht et al. 2014).

Concerning the influence of the type of firm ownership on employment growth, Chrisman et al. (2013) found that non-economic goals that are typical for family firms decrease the probability that they hire non-family managers. Expectations of difficulties in hiring employees make entrepreneurial ventures with family ownership also more reluctant to fire them. Colombo at al. (2014) have shown that in family firms the relation between changes in employment and sales is weaker than in their counterparts without family ownership. The non-economic goal of preserving the socio-emotional wealth (SEW) makes family-owned businesses more reluctant to hire employees and less attractive as employers. They are also less likely to readjust their workforce to mirror contractions in sales compared with firms ventures without family ownership.

## 3. Data

To test the relationship between changes in the employment in micro, small and medium-sized enterprises and access to finance, we used the firm-level data from the SME's Access to Finance (SAFE) survey. The SAFE survey is conducted by the European Central Bank (ECB) and the European Commission (EC). All companies are non-financial corporations randomly selected and the final sample is stratified by firm size, sector and country. The database pertains to enterprises employing at least one employee and operating in one of four major sectors - industry, construction, trade and other services.

We use Wave 11 data for the period of April-September 2014. In this wave interviews with firms were conducted in 28 EU countries and 2 non-EU countries. We restrict our sample to firms working in 28 EU countries and employing less than 250 employees.

### 3.1. Variables

Our dependent variable is a self-reported change in the number of employees. It is a multivariate variable which takes one of three possible values: increased number of employees (1), decreased number of employees (2) or unchanged number of employees (3) in the last 6 months.

We use four groups of independent variables:

- Access to finance
- Institutional changes in the last 6-12 months
- Perceived problems
- Firm characteristics

Our main focus is on variables relating to access to finance - financing gap indicator and perceived severity with the access to finance problem.

The financing gap is a composite measure of the perceived change in the gap (mismatch) between the demand and supply of external financing across those instruments that are relevant to the respective firm (bank loan, trade credit, equity, debt securities, bank overdraft). The index ranges from -1 (decreasing gap on both sides with respect to all relevant financial instruments) to 1 (increasing gap on both sides with respect to relevant instruments). The financing gap indicator is part of the SAFE dataset and is calculated from the answers to the questions about the needs and availability of bank loans, bank overdrafts, trade credit, equity and debt securities in the last 6 months.

Perceived problem with access to finance is a continuous variable derived from the answers to question Q0b. It indicates how pressing the problem with access to finance is for the enterprise. It refers to financing of the business through bank loans, trade credit, equity, debt securities, other external financing. The variable takes values between 1 (not pressing) and 10 (extremely pressing). Compared to the financing gap, which refers to specific financial products needs and availability in the past period, the perceived constraint in accessing finance is a more general assessment of the overall severity of the problem.

The other independent variables that serve as control variables include changes in the level of turnover in the last 6 months, introduction of innovations within last year, perception of other problems that the enterprises face, firm characteristics (age, size, industry, ownership type).

An overview of the dependent variable, independent and control variables is provided in Table 1.

Table 1: Names and definitions of dependent, independent and control variables

| | **Variable name** | **Variable type** | **Categories/Range** |
|---|---|---|---|
| **Dependent variable** | | | |
| | Employment changes in the last 6 months | Multivariate | 1 (increased), 2 (decreased), 3 (unchanged - ref) |
| **Independent variables** | | | |
| | **Access to finance** | | |
| | Financing gap | Continuous | Range from -1 (decreasing gap) and 1 (increasing gap) |
| | Problems with access to finance | Continuous | Range from 1 (least pressing) to 10 (most pressing) |
| | **Institutional changes in the last 6-12 months:** | | |

| | | | |
|---|---|---|---|
| | Turnover change in the last 6 months | Multivariate | 1 (increased), 2 (decreased), 3 (unchanged - ref) |
| | Product innovations in the last 12 months | Dummy | 1 (introduced innovation), 2 (did not introduce the innovation - ref) |
| | Process innovations in the last 12 months | Dummy | 1 (introduced innovation), 2 (did not introduce any innovations - ref) |
| | **Perceived problems** | | |
| | Problems with finding customers | Continuous | Range from 1 (least pressing) to 10 (most pressing) |
| | Problems with competition | Continuous | Range from 1 (least pressing) to 10 (most pressing) |
| | Problems with costs | Continuous | Range from 1 (least pressing) to 10 (most pressing) |
| | Problems with finding skilled staff | Continuous | Range from 1 (least pressing) to 10 (most pressing) |
| | Problems with regulations | Continuous | Range from 1 (least pressing) to 10 (most pressing) |
| | **Firm characteristics** | | |
| | Age | Multivariate | Less than 2 years |
| | | | 2-5 years |
| | | | 5-10 years |
| | | | >10 years (ref) |
| | Size | Multivariate | Micro |
| | | | Small |
| | | | Medium (ref) |
| | Sector | Multivariate | Services |
| | | | Industry |
| | | | Construction |
| | | | Trade (ref) |
| | Ownership type | Multivariate | One owner (natural person) |
| | | | Other |
| | | | Family ownership (ref) |

### 3.2. Hypotheses

Our main interest is to examine the influence of constraints in access to finance on job creation by SMEs. We strive to examine whether there is a relationship between changes in the number of employees and the perception of accessibility of external financing. We are specifically interested to understand the relationship between financial access and job creation in the context of other firm-level changes in the same period.

**Hypothesis 1: There is a negative relation between perceived constraint in access to finance and job creation.**

Limited availability of external finance, liquidity constraints, low debt capacity have been identified as one of the most important barriers to employment growth (Yazdanfar 2011). Access to formal financial sources allows higher investments in capital, new technologies, research and

innovation. It assures liquidity, improves risk management in firms, and allows the acquisition of productive assets.

We hypothesize that firms which increased the number of employees in the last 6 months experienced the decrease in the mismatch between the needs and availability of external financing in the same period. Conversely, firms which reduced the number of staff reported widening of the financing needs and availability gap. The same type of a relation will be seen between changes in the staff numbers and the perception of the severity of problem with access to external financing - fewer firms which face problems with access to finance increase employment.

**Hypothesis 2: The relationship between perceived constraints in access to finance and job creation disappears when controlling for firm turnover changes.**

Literature provides evidence for the causal relationship between firm growth in terms of the volume of sales, revenues, profits and availability of external financing. We posit that external financing is needed to increase the volume of outputs (sales, turnover, gross revenues, profit) by investing in inputs, chiefly inventories and productive assets and only in rare cases directly in employees. Access to finance, therefore, is indirectly related to job creation as it creates conditions for firm's growth, which often requires hiring additional staff.

### 3.3. Econometric analysis

To test our hypotheses on the predictors of changes in the employment levels we construct a multinomial logistic regression model.

Our dependent variable is a self-reported direction of a change in the number of employees in the last 6 months - increase, decrease or no change.

Since changes in the employment can take more than two unordered values we use a multinomial logistic analysis. This technique fits maximum likelihood multinomial logit models with discrete dependent variables when the dependent variable takes more than two outcomes and the outcomes have no natural ordering. Another advantage of the multinomial logistic model is that we can include continuous variables and multiple categorical variables as regressors.

We proceed in three steps. We first estimate the probability of changes in the staff numbers only controlling for the perceived financing constraints (Specification 1a and 1b).

*P(employment change) = f(financing gap, perceived problem with access to finance)*

Then we add a variable for the firm-level change in turnover in the last 6 and 12 months (Specification 2a and 2b).

*P(employment change) = f(financing gap, perceived problem with access to finance, turnover changes)*

Finally, we add variables for the perceived other challenges to running a business, innovations and firm characteristics (Specification 3a and 3b):

*P(employment change) = f(financing gap, perceived problem with access to finance, turnover changes, innovations, size, age, sector, ownership type, perceived other problems)*

The coefficients from the estimation will show whether each independent variable causes either an increase or the decrease in the likelihood of employment creation or destruction compared to the reference value (no changes in employment). We compute the exponential value of the estimated coefficient b for one unit change in the corresponding variable.

## 4. Results

### 4.1. Bivariate analysis

### *Access to finance and job creation*

The perception of access to finance being a pressing problem was lower for hiring firms as opposed to the enterprises which reduced the number of staff. The differences, although statistically significant, were nonetheless small and the average severity of the problem was around 5 on the scale from 1 to 10 for each of the SME clusters.

Figure 1: Average severity of the problem with access to finance for SME clusters

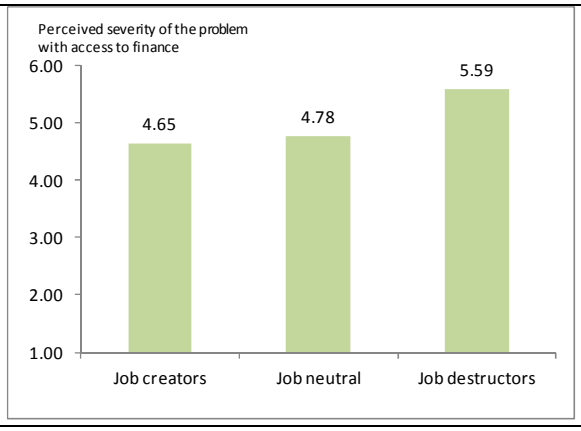
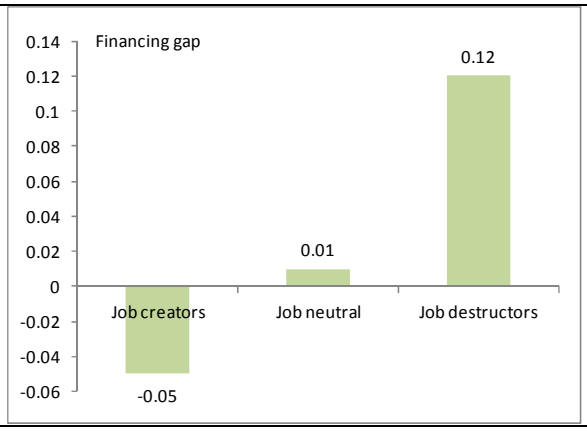



Figure 2: Average financing gap for SME clusters



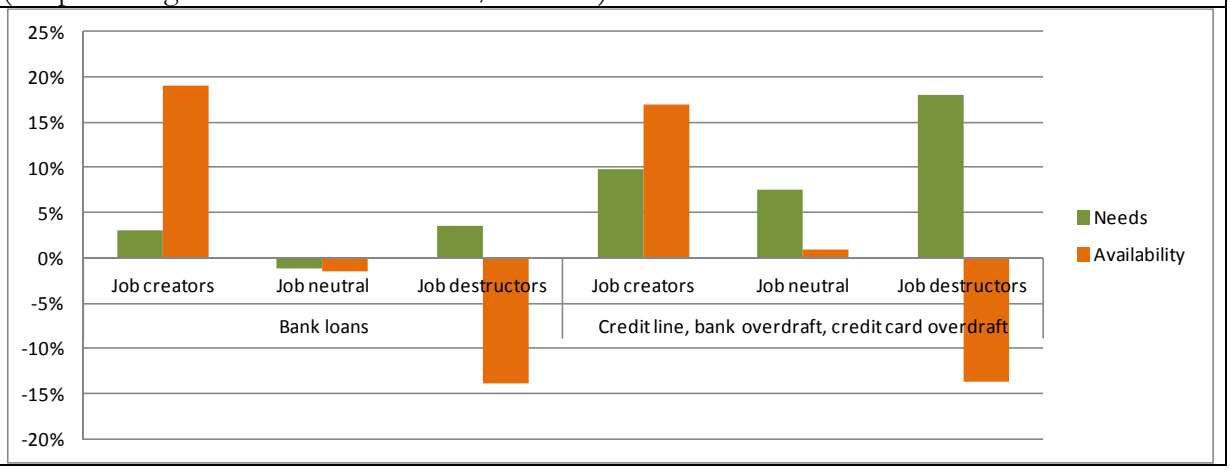

Enterprises which created new jobs in the last 6 months more often experienced narrowing of the financing gap in the same period, that is lowering the mismatch between their financing needs and the perception of funding availability. Conversely, in case of firms which reduced the number of employees the perception of the mismatch increased.

As the financing gap indicator is a composite measure that balances the needs for external financing and the perception of availability of funding through a number of financial products, a closer look at its components reveals the nature of differences between job creators and destructors.

Figure 3 shows the net difference between the percentage of SMEs reporting an increase and decrease in their needs and availability of two main bank products (loans and overdrafts). In case of job creators, SMEs for which both needs and availability increased in the last 6 months prevail over the ones which observed a decrease. In particular, the availability improvements were observed by a much larger number of SMEs compared to the SMEs which observed the decrease in availability of bank loans and overdrafts (net difference of 19% and 17%, respectively). Therefore, the narrowing of the financing gap for the job creators was driven by larger increases in the availability than the increases in the needs.

In case of job destructing SMEs the needs for bank loans and overdrafts predominantly increased among the larger number of firms (net difference of 4% for bank loans and 18% for overdrafts) while the availability of funding decreased in a larger number of firm (net difference of -14% for both bank products). This observation confirms the mismatch between changes in the needs versus the availability of funding.

Figure 3: Perception of changes in funding needs and availability of bank loans and overdrafts (net percentage of SMEs with increase/decrease)




*Job creation and turnover growth*

As Figure 4 shows, job creation was seen only in less than half of the firms which increased the volume of turnover. Almost half of the firms with turnover growth experienced the so called 'jobless growth' as they managed to scale up without hiring new staff. Hiring new staff translates into higher turnover, however, the turnover growth can be achieved in different ways without increasing the workforce, for instance, through productivity growth, technological improvements, outsourcing staff, and other.

Moreover, hiring new staff is seen predominantly in firms with increased sales volumes. The majority of firms which hired new staff in the last 6 months also increased their turnover in the same period. A relatively small proportion of firms increased the number of employees despite no growth or even lower turnover.

These observations are consistent with the findings from other studies which indicated that sales and employment growth are related, but respond independently to different factors. Additionally, staff changes seem to be less volatile - the largest number of firms retained the employment on the same level regardless of changes in the turnover.

Figure 4: Distribution of firms by the direction of changes of employment and turnover

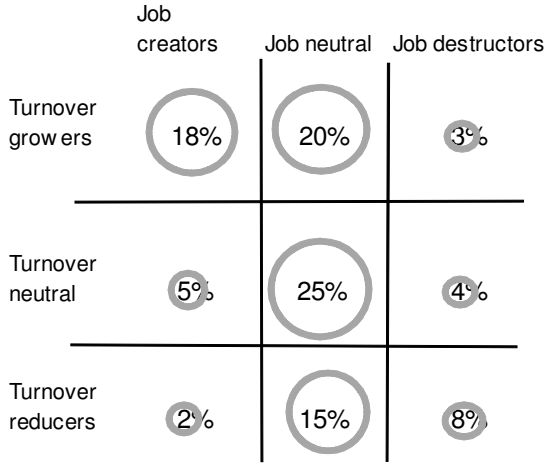



Table 2: Average values of two indicators of access to finance by SME clusters

Financing gap

| | Job creators | Job neutral | Job destructors |
|---|---|---|---|
| Turnover growers | -0.07 | -0.05 | -0.02 |
| Turnover stable | 0.00 | 0.00 | 0.06 |
| Turnover reducers | 0.05 | 0.12 | 0.19 |

Perceived severity of the problem with access to finance

| | Job creators | Job neutral | Job destructors |
|---|---|---|---|
| Turnover growers | 4.6 | 4.7 | 5.3 |
| Turnover stable | 4.5 | 4.5 | 5.1 |
| Turnover reducers | 5.2 | 5.3 | 5.9 |

The results presented in Table 2 show that changes in firm's turnover mirror the changes in the financing gap. The average financing gap for three segments of turnover growers is below zero, indicating that firms which increased sales experienced narrowing of the financing needs-availability gap. The similar relationship was seen in the segments of firms with stable turnover, where the average financing gap was around zero, and in the segments of firms with turnover decrease the average value of the financing gap was above zero.

Changes in the employment appear to be less consistent with changes in the needs-availability mismatch. The average value of the financing gap in the three segments of job creators depends on the changes in turnover. A diminishing gap is observed only in the segment of job creators which increased sales. Job creators with stable turnover experienced no changes in the financing gap, while for the job creators which decreased their turnover the financing gap widened. The same relation is seen among job destructors - the gap widened only for those job destructors which decreased turnover in the same period. Those job destructors which managed to increase sales observed narrowing of the gap.

These observations point out to the dominance of the relationship of turnover change - financing gap relation over the employment change - financing gap link. Moreover, widening of the gap among job destructors with turnover decrease was stronger than narrowing of the gap among job creators with sales growth (0.19 and -0.07, respectively) which points to the stronger impact of the constraints than the ease of access on firm performance.

However, a different picture is seen in the relation of the perception of the severity of access to finance constraint to turnover and employment changes. The severity of the access problem is higher in segments of firms which decreased either turnover or employment or both. For all these segments the average value of the severity of the problem is above 5 and is the highest for the segment of job destructors which decreased volume of sales. For segments of firms which increased either the turnover or employment or both the perception of the severity of access problem was lower and close to the average perception expressed by the segment with no changes. It seems that the perception of access to finance affects both changes in turnover and

employment and the negative effect of the perceived constraint is stronger than the positive effect of the perceived ease of access.

In the further analysis we examine the role of access to finance in generating new employment irrespective of changes in the volume of sales and controlling for firm characteristics and other institutional changes.

### 4.2. Multivariate analysis

The results of the multinomial logistic regression in the form of odds ratios and corresponding standard errors are shown in Table 3.

*Financing gap*

The regression results confirm what was shown in the bivariate analysis - positive changes in the number of employees go together with narrowing of the financing gap, that is decreasing the mismatch between the demand for finance and the perception of its availability (Specification 1a). The probability of a firm being a job creator rather than job neutral is 29% higher for firms which decreased the financing gap by one unit of measure. Conversely, firms which reduced the number of staff suffered from widening of the financing gap. The odds of being a job destructor rather than job neutral increase by 60% with every unit increase in the financing gap.

However, when controlling for changes in the volume of turnover in the same period, the financing gap movements do not significantly relate to the employment growth (Specifications 2a and 3a). Adding other variables which specify other firm-level changes (innovations) and problems that the firms face, as well as controlling for firm characteristics (age, size, sector, ownership) does not bring any significant changes to the relation between the employment growth and the financing gap.

In case of job destructors changes in the financing gap remain important even when controlling for other firm-level changes as well as institutional characteristics (Specifications 2b and 3b). Firms which reported worsening of the availability of financing compared to their needs were more likely to lay-off some of its staff, regardless of whether they introduced any innovations or increased the turnover.

*Perception of constraint in accessing finance*

The perception of the severity of access to finance problems remains significant for the employment growth and destruction throughout all specifications, even when controlling for turnover growth, innovations, firm characteristics and perception of barriers to business operations.

Firms which increased the number of employees in the last 6 months less severely assessed the difficulty in accessing finance compared to non-growing firms (Specifications 1a, 2a and 3a). SMEs which reduced the employment found access to finance to be more a pressing problem compared to non-growing firms (Specifications 1b, 2b and 3b).

This indicates that the perception of the ease of access to financial services is important for job creation and the sustainability of jobs.

*Turnover*

Turnover growth is the largest predictor of the increase in the number of employees in the firm. In our model, holding the perception of financial access constant, SMEs which increased their turnover in the last 6 months were three times as likely as the non-growing firms to hire new employees and the chances of increasing the employment at the time of shrinking sales were less than 3% (Specification 2a and 3a).

In case of job destructors, turnover increase did not have any significant relationship with decreasing staff numbers (Specification 2b and 3b). However, turnover decrease was significantly related with job destruction. Comparing to non-growing businesses, firms in which the turnover decreased were more than twice as likely to reduce the number of employees.

*Perception of problems*

A number of problems is found to be pressing for SMEs, however their significance is different for job creators and job destructors. Compared with job neutral firms, SMEs which increased the number of employees less severely perceived problems with finding customers, and the costs of production or labor less strongly affected their operations. But they found low availability of skilled staff or experienced managers as a pressing problem. Problems with regulations and competition were not significantly distinguishing job creators from stable employment firms.

For job destructors, the perception of the severity of only one problem - finding customers - distinguished them from job neutral SMEs.

*Size*

Both micro and small firms in comparison to the medium-sized companies were, ceteris paribus, less likely to both generate or reduce employment.

*Age*

Chances for job creation were higher among the firms less than 10 years old, especially among nascent companies in operations for less than 2 years. However, firm's age did not have significant influence on job destruction which was conditioned by other factors than age.

*Sector*

Both job creators and job destructors were more likely to operate in construction and services rather than in trade. Employment in these two sectors was more volatile compared to the trade sector.

*Introduction of innovations*

Product innovations were significantly related only with job creation - the probability of employing new staff among the firms which introduced new products was 15% higher compared to firms which did not change staff numbers. Introducing new products had no significant relation with job destruction. This is in line with findings from other studies which showed that new products can positively influence employment by creating new demand and scaling up of firm's operations (Garcia et al. 2004).

The effect of process innovations was more complex, as it positively related to both job creation and destruction. The probability of the firm being a job creator or job destructor was 40% higher

for firms which introduced changes in the production, sales or management processes. Again, this finding is consistent with literature - new production processes may contribute to higher productivity and thus lower the demand for labor. At the same time, firms can pass on lower unit costs to their product prices and lower prices can lead to a higher demand for the product, thus increasing the output (Licht et al. 2014).

*Ownership*

Unlike the evidence from other research studies on the role of the ownership type on decisions to hire/fire the employees, we do not find the relevance of the type of ownership to job creation or destruction. However, the influence of the owner characteristics on firm development is well recognized in the literature. Many papers discuss the role of the personal characteristics of the business owner such as the age, education, business experience (Parker 2009) and growth ambitions (Out 2013). Further analysis of the owner's traits would shed more light on the role of ownership in employment growth but it is beyond the scope of this analysis due to the lack of relevant data.

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Table 3: Multinomial logistic estimations of changes in employment and perceived access to finance controlling for firm characteristic

| Dependent variable: employment changes in the last 6 months | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Base outcome: unchanged number of employees** | | **Increased number of employees** | | | | | | | | | **Decreased number of employees** | | | | | | | | |
| | | Specification 1a | | | Specification 2b | | | Specification 3c | | | Specification 1a | | | Specification 2b | | | Specification 3c | | |
| | | A | b | c | A | b | c | a | b | c | a | b | c | a | b | c | a | b | c |
| Financing gap | | 0.718 | *** | 0.070 | 0.915 | | 0.075 | 1.018 | | 0.079 | 1.622 | *** | 0.087 | 1.273 | *** | 0.089 | 1.358 | *** | 0.091 |
| Perceived problem - Access to finance | | 0.974 | *** | 0.010 | 0.974 | ** | 0.010 | 0.977 | ** | 0.011 | 1.074 | *** | 0.012 | 1.065 | *** | 0.012 | 1.057 | *** | 0.013 |
| Turnover increase | | | | | 4.000 | *** | 0.066 | 3.658 | *** | 0.069 | | | | 0.954 | | 0.094 | 0.955 | | 0.095 |
| Turnover decrease | | | | | 0.693 | *** | 0.099 | 0.787 | ** | 0.102 | | | | 3.289 | *** | 0.082 | 3.310 | *** | 0.084 |
| Turnover unchanged (ref) | | | | | | | | . | | . | | | | | | | . | | . |
| Product innovations | | | | | | | | 1.154 | ** | 0.066 | | | | | | | 0.883 | | 0.081 |
| Lack of product innovations (ref) | | | | | | | | . | | . | | | | | | | | | |
| Process innovations | | | | | | | | 1.441 | *** | 0.064 | | | | | | | 1.413 | *** | 0.074 |
| Lack of process innovation (ref) | | | | | | | | . | | . | | | | | | | | | |
| Perceived problem - Finding customers | | | | | | | | 0.974 | ** | 0.013 | | | | | | | 1.062 | *** | 0.015 |
| Perceived problem - Competition | | | | | | | | 0.992 | | 0.014 | | | | | | | 1.011 | | 0.017 |
| Perceived problem - Costs | | | | | | | | 0.973 | * | 0.014 | | | | | | | 1.001 | | 0.017 |
| Perceived problem - Skilled staff | | | | | | | | 1.091 | *** | 0.012 | | | | | | | 1.001 | | 0.014 |
| Perceived problem - Regulations | | | | | | | | 0.992 | | 0.012 | | | | | | | 0.979 | | 0.014 |
| Construction | | | | | | | | 1.441 | *** | 0.110 | | | | | | | 1.694 | *** | 0.115 |
| Industry | | | | | | | | 1.039 | | 0.092 | | | | | | | 1.059 | | 0.110 |
| Services | | | | | | | | 1.407 | *** | 0.076 | | | | | | | 1.180 | * | 0.087 |
| Trade (ref) | | | | | | | | . | | . | | | | | | | . | | . |
| Micro (1-9 employees) | | | | | | | | 0.253 | *** | 0.084 | | | | | | | 0.561 | *** | 0.097 |
| Small (2-49 employees) | | | | | | | | 0.677 | *** | 0.073 | | | | | | | 0.816 | ** | 0.094 |
| Medium (50-249 employees) (ref) | | | | | | | | . | | . | | | | | | | . | | . |
| Nascent (below 2 years) | | | | | | | | 2.384 | *** | 0.208 | | | | | | | 1.372 | | 0.264 |
| Young (2-4 years) | | | | | | | | 1.831 | *** | 0.118 | | | | | | | 1.126 | | 0.150 |
| Mature (5-9 years) | | | | | | | | 1.586 | *** | 0.085 | | | | | | | 1.178 | | 0.100 |
| Old (over 10 years) (ref) | | | | | | | | . | | . | | | | | | | . | | . |
| Ownership - natural person | | | | | | | | 0.973 | | 0.067 | | | | | | | 0.881 | | 0.078 |
| Ownership - other | | | | | | | | 0.963 | | 0.089 | | | | | | | 1.095 | | 0.106 |
| Ownership - family (ref) | | | | | | | | . | | . | | | | | | | . | | . |
| | | | | | | | | | | | | | | | | | | | |
| Number of observations | | 7,465 | | | 7,465 | | | 7,465 | | | 7,465 | | | 7,465 | | | 7,465 | | |
| | | | | | | | | | | | | | | | | | | | |
| Nagelkerke R Square | | 0.029 | | | 0.205 | | | 0.278 | | | 0.029 | | | 0.205 | | | 0.278 | | |

a - Odds ratios, , b - statistical significance: *** p<0.01; ** p<0.05; * p<0.1, c - standard errors

## 5. Conclusions

Access to finance is a multidimensional concept which can be assessed by a wide range of indicators and measures. Our research took into account two variables from the SAFE database - financing gap and the severity of financial access problem - to measure access to finance. These two measures of access to finance are two separate constructs which provide insights into the relationship between financing and business decisions, including employment changes.

Our findings show that the severity of the financial access constraint, the more general measure of the two, was correlated with job creation as well as job destruction, and was statistically significant when controlling for other firm-level variables. The financing gap, the more specific measure of financing constraints, was found not to be relevant to job creation but significantly correlated with job destruction.

We explain these findings by the fact that managerial decisions relating to business growth are based on the assessment of the existing conditions and future prospects with access to finance being one of the factors influencing business growth. The availability of financing is relevant for all firms even if external financing is not used or needed at the time. However, the actual availability of financing to cover current financing needs is not directly relevant for employment growth as financing is usually needed for non-staff investments. The decision to hire new staff is conditioned on many other factors beyond financial access, in particular, positive change in sales volume. Introduction of new products also links positively with job creation, so financing for new product launch can be a way to employment growth.

While the financing gap as noted is not linked to job creation, it is very relevant to job destruction: the diminishing availability of finance in times of increased needs is affiliated with employment reduction. Access to finance is, therefore, important specifically for the stability of employment.

The novel aspect of our research is that it analysed the role of the perception of accessibility of external finance. While many papers studied the influence of the actual availability of financing or the actual usage, our study points to the relationship between the opinion of the business owners and business growth. To an important degree business decisions are influenced by the perceptions of the business owners to receive financing which may or may not materialize in the reality. Creating access is a necessary condition but appears to be tempered by the perceptions of business owners. Correcting for misperceptions which lead to self-exclusion may contribute to reducing job destruction by small firms.

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