

The financing of incremental innovations in UK SMEs: Has this helped internationalisation via exports?

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- **Aim**

1. To analyse the financing of innovation in UK SMEs between 2009 and 2018
2. To evaluate the role of public sources and financial intermediation in SME incremental innovations.
3. To assess how innovation has influenced internationalisation through exporting during the period.

## **Introduction**

According to the European Commission (EC) and European Central Bank (ECB)'s latest report, 98 out of every 100 non-financial businesses are SMEs (and 93 are micro-enterprises!), these employ 67 in every 100 employees, generating 57 cents approximately in every Euro of Economic Value Added. According to the same report, around 21% of the financing is devoted to developing/launching new products and approximately 45% of SMEs in the EU did exports (European Commission, 2018a). After Brexit, the UK will be entering waters it has not navigated for decades, therefore the overall health of its SME sector at this stage will be used as an indicator of where things were left just before leaving, regarding innovation and exportation activities.

In this working paper, I analyse

## **Literature Review**

## **Methodology**

I use the SAFE (Survey on the access to finance of enterprises) by the EC and the ECB, on 28 EU countries. The sample is stratified by country, enterprise size class and economic activity (European Commission, 2018b). This data has been collected from the March 2009 to September 2018, every six months, totalling 19 waves so far. During this period in the UK were interviewed 2291 micro, 1091 small, 1030 medium, 2684 mixed SMEs and 786 large size firms, totalling 7882 enterprises. Precisely because of their survey nature, these firms are deemed to be statistically representative of the entire industrial fabric of the British economy.

The data is analysed both as pooled cross-sections of survey data and panel data, however at this stage only pooled cross-section results are available. I develop an

in-depth analysis applying Structural Equation Two-level models, so that this data is treated as clusters, where level 1 is size group and level 2 is firm age (I apply what is known in Statistics as Generalised Mixed Models, to be more precise). These are logistic models, namely, generalised models, which are interpreted in terms of odds.

## Generalised Structural Equation Multilevel Models

Level 1: Firm Size { **micro, small, medium**  
**Low Turnover per Employee-SME: Turnover below average**  
**High Turnover per Employee-SME: Turnover above average**  
**Large**

Level 2: Firm Age { **less than 2 years**  
**between 2 and 5 years**  
**between 5 and 10 years**  
**over 10 years**

Response Variables { **below 25%**  
**Exports % of Total turnover between 25% and 50%**  
**above 50%**

Incremental Innovations { **process and methods**  
**product and services**  
**organisation and management**  
**ways to sell**

**Internal Funds**

**Government grants/subsidised loans**

**Covariates**

External Financing { **RB: Retail Banking (Bank Loans, Bank Overdrafts/Credit Lines)**  
**IB: Investment Banking (Equity, Debt Securities, 'mezzanine' financing)**  
**ABF: Asset-Based Financing (Trade Credit, Leasing & Hire Purchase, Factoring)**  
**NIF: Non-intermediated Financing (Family/friends Loans)**

## Analysis of Results

According to the SAFE data, in the UK the SME sector in the British economy as a whole during the period 2009- 2018:

- Around 49% of SMEs were older than 10 years
- Over 51% of them were in Services and Trade, with a notorious 34%, namely roughly a third of the economy, in SME Services.
- About 55% of enterprises declared to be Autonomous profit-oriented SMEs
- 56.13% of them were owned by one owner, family or group of entrepreneurs
- Interestingly enough, regarding internationalisation via exports, 33.19% of these SMEs declared to be headquartered in the UK, 6.98% in the EU and 10.48% is outside the EU.

The GSEM models results so far show that:

1. UK SMEs between 2009 and 2018 that implemented new production processes and methods, were more likely to generate over 50% of their turnover through exports. In fact, firms that innovated in processes and methods were around 30% more probable to generate an exports turnover compared to other types of incremental innovations.
2. New processes and methods, as well as, new products and services were over two times as likely to be financed by means of grants and/or subsidised bank loans, compared to other financial sources.
3. On the other hand, debt securities were 99% and factoring 71% more likely, second and third respectively behind government grants and/or subsidised bank loans, to be used to finance new production processes and methods.
4. UK SMEs between 2009 and 2018 that did new organisation of management were approximately 63% more likely financed by debt securities, whereas the ones that improved product/service tended to be financed by factoring as twice as much as by any other financing source. Indeed, firms generating an export turnover between 25% and 50%, had a higher chance of implementing new management organisation and/or improved products/services. On the other hand, it is particularly important to highlight that Family/friend loans were as four times as likely to be applied to finance new management organisation, as bank credit lines were.

5. Thinking of incremental innovations as a whole, the ones that significantly impacted internationalisation via exports were the ones concentrating on production, not distribution.
6. In terms of financial intermediation, SMEs during this period were using investment banking more intensively than retail banking (approx. 2.5 time more). Nonetheless, when it came to internationalisation, regarding innovations in management organisation (which were proved to have some impact on exports turnover), non-intermediated financing such as family and/or friends loans were around four more probably to be employed than credit lines were.
7. Government grants and/or subsidised loans had a significant role in incremental innovations affecting new processes, methods, products and services, which in turn were more likely to positively influence internationalisation via exports than any other incremental innovation.

- **Conclusions, so far**

- Incremental innovation matters for “internationalisation” via exports
- Government’s financial aid had played a key role in the last 10 years
- Weak banking usage: But why?

- **Policy-making and practice implications**

- Public funding aiding innovations with more EVA
- Why even Asset-Based Financing is being more employed than retail banking?

- **Next steps**

- Carrying out robustness tests
- Work with the rotating Panel Data of the dataset

## **Bibliography**

European Commission (2018a), Annual report on European SMEs 2017/2018, European Union (Online: last time accessed 12/12/2018).

European Commission (2018b), User Guide to the SMEs definition, European Union (Online: last time accessed 12/12/2018).

## **E. Conclusions, so far...**

- Incremental innovation matters for “internationalisation” via exports
- Government’s financial aid had played a key role in the last 10 years
- Weak banking usage: But why?

## **F. Policy-making and practice implications, so far...**

- Public funding aiding innovations with more Economic Value Added
- If even Asset-Based Financing is being more employed in innovation than retail banking, what is the role of it in this process?

## **G. Next steps**

- Carrying out robustness tests
- Work with the rotating Panel Data of the dataset