



## FINANCIAL RESILIENCE OF BRITISH SMEs DURING THE FINANCIAL CRISIS OF 2008

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ARTICLE INFO	ABSTRACT
<p>DOI: 10.52932/jfm.vi3.375</p> <p><i>Received:</i> March 15, 2023</p> <p><i>Accepted:</i> April 23, 2023</p> <p><i>Published:</i> June 25, 2023</p> <p><b>Keywords:</b> Credit crunch; Financial crisis; Financial resilience; SMEs.</p>	<p>Access to finance is considered one of the top constraints on SMEs' growth and survival. During bank crises, although facing a credit crunch, a few SMEs still survive, hence I study what makes survivor SMEs' financial resilience. This is not clearly defined in previous studies. The study contributes to these with empirical evidence of SMEs in the UK from pre- to post-crisis of the bank crisis of 2008. The study finds that the financial resilience of the SMEs is affected positively by a supplier network, profitability, internal equity, and diversity of financing, but negatively by bank loan dependence. During the crisis, the key driving factor for SMEs' financial resilience is profitability. It remains a challenge for policymakers to offer a stable financing strategy to assist SMEs.</p>

### 1. Introduction

SMEs in the UK rely on bank lending as the main external financing (Williams & Cowling, 2009), thus the effect of crises on them is more serious in the condition of credit crunch. Between 2009 and 2012, 70% of British SMEs failed to apply for bank loans and also did not get any alternative finance (National Audit Office, 2013); simultaneously there are increasing numbers of firm closures according to Office

for National Statistics. However, still some SMEs survived, which raises a question about what those survivor SMEs did to adapt and maintain their activities. In previous studies, there are controversial ideas about what affects the survival of an SME and financial resilience is not clearly defined.

There are different views on how credit crunch affects SMEs' survival. Japan saw an adverse effect of credit crunch in the 1990s: banks in Japan were not willing to lend, and the figures for company bankruptcies jumped from 10,723 to nearly 19,000 (Werner, 2005). Also,

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Ryan et al. (2014) in their study of European SMEs show that bank market power worsens financing constraints of SMEs, especially in bank-based countries. Mac (2013) says that SMEs with the highest financial constraints suffer most severely from a credit crunch. In the UK during the bank crisis of 2008, the number of credit-rationed small firms denied bank loans peaked in February 2009 at 119,000 (Cowling et al., 2012); the death rates of firms jumped in 2009 and 2010, making the net rates with birth rates turn negative -1.9% and -0.6% respectively (National Audit Office, 2013). But Kitching & Xheneti (2009) show that not all SMEs suffer heavily from a credit crunch but are able to be resilient by adapting to challenges.

Financial resilience is not well defined in existing studies. Resilience generally is defined by how quickly an individual can adapt to unexpected things and by its internal strength that enables it to do that, as described in the study by McDonald (2006), and Bhamra & Burnard (2011). In business, the definition of resilience varies but focuses on flexibility, continuity, and the capacity of a firm according to Weick & Sutcliffe (2011) and Hamel & Valikangas (2004). Ryan & Irvine (2012) measure the financial resilience of an NGO by stability, liquidity, gearing and sustainability ratios.

Thus, the study aims to examine factors contributing to financial resilience of SMEs survivorship and thus aims to contribute to the previous literature about financial resilience of SMEs in the context of the UK during the bank crisis of 2008, which has not been studied before. In practice, the study aims to send a message to policymakers to offer aid to SMEs during economic downturns timely and appropriate.

## 2. Literature review

In this study, financial resilience is supposed to be influenced by the dependence on bank lending, flexibility in adapting to changes (including financial management skills, business network and diversity of financing)

and internal strength (including equity and profitability).

### **Bank lending**

The role of bank loans on SMEs during crises is contrasting. On the one hand, bank loans as the main external finance that SMEs rely on according to National Audit Office (2013); Cosh & Hughes (1993), hence bank-dependent SMEs are more vulnerable to financing constraints (Ryan et al., 2014; Beck et al., 2008; Stiglitz & Weiss, 1981) and particularly sensitive to uncertainty (Byrne et al., 2016) when the banking system deteriorates (Chava & Purnanandam, 2011). On the other hand, although over 50% of British SMEs preferred bank loans according to National Audit Office (2013), Williams & Cowling (2009), British SMEs are less affected by credit crunch compared to other countries, only 19% of them, which is similar to Smallbone et al. (2012).

*Hypothesis H1: Bank lending affects the financial resilience of SMEs.*

### **Equity**

Internal financing (equity) is the main financing source for SMEs as the Pecking Order Theory (Myers, 1984) and the study of Ou & Haynes (2004). Especially during bank crises, 75% of firms unaffected by credit crunch rely on self-financing (Smallbone et al., 2012); Bernstein et al. (2019) give evidence that private-equity backed firms increased their investments compared to their peers during the crisis of 2008. In addition, Zoppa & McMahan (2002) suggest the modified Pecking Order Theory for SMEs with retained profits as first choice, and new equity capital injections from existing owners as the fourth option. However, British SMEs do not value equity as the main funding source before the crisis of 2008.

*Hypothesis H2. Internal equity affects the financial resilience of SMEs.*

### **Financial management skills**

Liquidity management is widely agreed to be a key factor for firms' growth and survival

(Deakins et al., 2000; Saridakis et al., 2007; Ekanem, 2010). Ekanem uses cash management and credit management as the measurements, while Gupta et al. (2014) and Gentry et al. (1987) use operating cash flow. Especially under the pressure of credit crunch and falling demand, SMEs used cash flow and cash management to survive during the crisis, hence we measure liquidity management using cash and cash flow information.

‘Cash at the bank is considered a strong predictor of firms’ resilience (Smallbone et al., 2012). SMEs in the UK in general are not good at cash management after a long period of easy credit before the crisis of 2008 (Williams & Cowling, 2009). Similarly, Herbane (2010) shows that SMEs lack cash sources to adapt in economic crises.

Cash flow management is widely considered to be a factor in corporate bankruptcy forecasting according to Aziz, Emanuel & Lawson (1988); Altman, Haldeman & Narayanan (1977); Gombola et al. (1987); and Gilbert et al. (1990).

*Hypothesis H3a. Cash management affects the financial resilience of SMEs.*

*Hypothesis H3b. Cash flow management affects the financial resilience of SMEs.*

### **Profitability**

Earning power is an important factor in enabling a firm to adapt to difficult situations according to Hamel & Valikangas (2004). Aligned with that, Delmar et al. (2013), Bercovitz & Mitchell (2007) all state that profitability supports the survival of new firms. The reason possibly is that profitability can help to generate enough capital for the firm’s business (Beck & Demircug-Kunt, 2006). Lack of profits is considered the main driver of firm mortality (Levinthal, 1991; Carroll & Harrison, 1994). Besanko et al. (2000) conclude that firms with risk-adjusted rate of return smaller than costs tend to exit the market.

In this study, the profit margin ratio (ROS) is used to test the role of profitability in financial

resilience based on some of the following research. Musso & Schiavo (2008) prove that cutting costs is a solution for constrained firms to generate resources without seeking aid from financial markets. Okpara (2011) states that insufficient profits and low demand for products and services are the main constraints on Nigerian SMEs’ growth and survival. Smallbone et al. (2012) give evidence that resilient British SMEs were less likely to reduce selling prices, but instead generated revenues and cut costs during the crisis of 2008.

*Hypothesis H4. Profitability affects the financial resilience of SMEs.*

### **Business network**

Trade credit plays an important role on financing SMEs, especially during financial crisis according to the studies of McGuinness, Hogan & Powell (2018) and Casey and O’Toole (2014). To SMEs, it is considered an important financing source and can supplement short-term bank lending (Demircug-Kunt & Maksimovic, 2001). For credit-constrained SMEs, trade credit is the main reliance instead of bank loans (Valverde et al., 2012) to meet their financing needs (Carbo-Valverde et al., 2016). The important role of trade credit on SMEs is confirmed in the US (Berger & Udell, 1998), Asia (Arzeni & Akamatsu, 2014), and the UK (National Audit Office, 2013). However, in the case of Japan, during the 1990s’ financial crisis, there is little evidence of trade credit’s role in SMEs’ performance.

*Hypothesis H5. Business network affects the financial resilience of SMEs.*

### **Diversity of financing sources**

Financial flexibility is important for firms’ survival (Clarke et al., 2012). The diversification of financing options along with lending efficiency improvement can help SMEs’ access finance more easily, especially in Asia (Cusmano, 2015). Along with that, diversified funding alternatives are necessary for growth-oriented SMEs (Arzeni & Akamatsu, 2014).

Cusmano (2015) mentions innovative financing for SMEs such as corporate bonds, securitized debt, covered bonds, hybrid instruments or mezzanine finance, crowdfunding or peer-to-peer lending. Venture funding is a way to seek external finance in the UK (BIS, 2012). Cosh & Hughes (1993) find that SMEs rely on hire purchase and leasing arrangements to a great extent, while alternative forms of debt have limited applicability for SMEs (Cusmano, 2015).

*Hypothesis H6. Diversity of financing methods affects the financial resilience of SMEs.*

### 3. Methodology

Research data: the research sample is collected via Fame database (<https://login.bvdinfo.com/R0/Fame>). The data are secondary data from the financial statements of 9,998 randomly selected SMEs in the UK from 2003 to 2012. Data are displayed as panel data and have two time periods, namely pre-crisis period from 2003 to 2007, during- and post-crisis period from 2008 to 2012, following McGuinness, Hogan & Powell (2018).

In terms of variables, the dependent variable is financial resilience and is explained by 17 independent variables including 8 main variables, 7 crisis variables, and 2 control variables.

#### **Financial resilience**

As there is no definition or measurement of financial resilience of an SME from previous research, financial resilience is considered as the survival or failure probability or vulnerability of a firm. In order to measure it, the study follows the study of McGuinness, Hogan & Powell (2018) but in opposite direction using Z-score to set up a cut-off and give financial resilience variable a binary choice. Originally, the study uses the adjusted Z-score model for private firms of Altman (1983):

$$Z = 3.107 \frac{EBIT}{Total\ assets} + 0.717 \frac{Net\ working\ capital}{Total\ assets} + 0.998 \frac{Sales}{Total\ assets} + 0.42 \frac{Book\ value\ of\ equity}{Book\ value\ of\ total\ liabilities} + 0.847 \frac{Accumulated\ retained\ earnings}{Total\ assets}$$

Altman uses the Z-score to classify the firms into different areas:

- If  $Z < 1.23$ , the firm has 95% probabilities of bankruptcy within one year
- $1.23 \leq Z \leq 2.9$ , the firm is in grey area or misclassified by this model
- $Z > 2.9$ , the firm is classified as non-bankrupt

Financial resilience has binary values: 0 and 1. If a firm has Z-score less than the cut-off (1.23), its financial resilience equals to 0 and 1 otherwise.

#### **Bank lending**

With different viewpoints about the effect of credit crunch from banks to the firm's survival, it is measured by the dependence ratio of bank lending as mentioned below:

$$Bank\ lending = (Short\text{-}term\ loan\ overdraft + Bank\ overdraft) / Total\ assets$$

#### **Internal equity strength**

To measure internal equity strength, the ratio of total equity over total assets is used. Based on Brealey, Cooper & Kaplanis (2012), there is a trade-off between internal equity and debt for financing firms. Thus, safe companies with plenty of tangible assets and taxable income would rely more heavily on debt than unprofitable, risky firms with intangible assets that would depend on equity.

$$Internal\ equity\ power = Net\ asset / Total\ assets$$

#### **Financial management skills**

To measure the financial management skills of SMEs' business owners, the study



uses operating cash flow and total cash over sales to evaluate how quickly the business owners can manage their financial status in an economic downturn. Budsaratragoon, Hillier & Lhaopadchan (2014) emphasizes the role of cash flow for a business: If a firm cannot generate enough cash flows to meet their payments, it will suffer from financial distress which may lead to an asset liquidation or insolvency.

$$\text{Operating cash flow ratio} = \text{Cash flows from operations} / \text{Total liabilities}$$

In terms of cash management, the ratio of cash over sales is used to measure how much cash a firm can collect from the real turnover because during financial turmoil, cash plays an important role in maintaining a business. In this study, due to insufficient information, cash is measured by increase (decrease) cash in the end of period.

$$\text{Cash/Sales} = \text{Final increase (decrease) cash} / \text{Turnover}$$

### Profitability

To measure profitability, the profit margin ratio or ROS (Return over Sales) is used to find how much expenditure a firm requires to make turnover, when cost reduction is a common method for corporates during the crisis (Williams & Cowling, 2009).

$$\text{ROS} = \text{Net income} / \text{Turnover}$$

### Wide business network

Gianneti, Burkart & Ellingsen (2011) find out that trading relationships are important to understand trade credit when suppliers consider financing the firms with financial difficulties. Also, firms that are more creditworthy and have buyer market power can easily get discounts at trade credit. McGuinness, Hogan & Powell (2018) confirms the role of trade credit to financially constrained European SMEs during the financial crisis of 2007-2009.

$$\text{Trade credit} = \text{Trade credit} / \text{Total assets}$$

### Financing Diversity

To measure the diversity of financing resources, the variable of other financing sources is used. On Balance Sheet, innovative financing sources are considered as the sum of Group loans, Hire purchasing and liabilities and Other loans in both short- and long-term funding.

$$\text{Diverse financing methods} = \text{Total financing sources} / \text{Total assets}$$

The independent variables lag one period compared to the dependent variable with the assumption that the explanatory variables would have an effect on the main dependent variables after one-year period, following Gollob & Reichardt (1987). Control variables are *size* and *growth* without lagged time, because the study does not want to focus on them. All the variables are calculated using financial reports of Fame database.

**Table 1.** Variable measurements

No	Name	Labels	Type	Measurements	References
1	Financial resilience	Financial resilience	Dependent	1 (if Z-score >= 1.23) and 0 otherwise	McGuinness et al. (2018), Altman (1983)
2	Loan	Bank lending	Main	Bank loans/Total assets	Ryan et al. (2014), Beck et al., (2008)
3	Equity	Equity power	Main	Equity/Total assets	Brealey (2012)
4	CF	Cash flow	Main	Operating cash flow/Total liabilities	Hillier (2013)

No	Name	Labels	Type	Measurements	References
5	Cash	Cash	Main	Final in(de)crease cash/ Turnover	Smallbone et al. (2012)
6	Profit	Profitability	Main	Net income/Turnover	Williams and Cowling (2009)
7	Network	Business network	Main	Trade credit/Total assets	McGuinness et al. (2018), Gianneti et al. (2011)
8	Diversity	Diversity financing	Main	Sum of other financing methods/Total assets	Clarke, Cull and Kisunko (2012)
9	Time	Time	Main	1 (if year >= 2008) and 0 otherwise	McGuinness et al. (2018)
10	Creditcrunch	Credit crunch	Crisis	Time * Bank lending	
11	Crisisequity	Crisis equity	Crisis	Time * Internal equity	
12	CrisisCF	Crisis cashflow	Crisis	Time * Cash flow	
13	Crisiscash	Crisis cash	Crisis	Time * Cash	
14	Crisisprofit	Crisis profitability	Crisis	Time * Profitability	
15	Crisisnetwork	Crisis business network	Crisis	Time * Business network	
16	Crisisdiversity	Crisis financing diversity	Crisis	Time * Financing diversity	
17	Growth	Sales growth	Control	$\frac{\text{Sales}_{it} - \text{Sales}_{it-1}}{\text{Sales}_{it-1}}$	McGuinness et al. (2018)
18	Size	Size	Control	Log of Total assets	McGuinness et al. (2018)

Table 3. Descriptive statistics

Name	Label	Obs	Mean	STD	Min	Max
<b>Dependent variable</b>						
Financial resilience	Financial resilience	83364	0.807	0.394	0.000	1.000
	Z-score	83207	7.415	1463.300	-29428.710	420000.000
<b>Main variables</b>						
Loan	Bank lending	75101	0.288	0.617	0.000	25.229
Equity	Equity Power	75144	0.252	0.812	-37.150	1.091
CF	Cashflow	75150	0.159	2.438	-56.873	253.649
Cash	Cash	75148	0.019	1.590	-67.533	243.804
Profit	Profitability	75152	0.064	0.340	-9.748	8.897
Network	Business network	75149	0.158	0.166	0.000	1.776
Diversity	Diversity financing	75142	0.076	0.719	-19.229	32.400

Name	Label	Obs	Mean	STD	Min	Max
<b>Crisis variables</b>						
Creditcrunch	Credit crunch	83364	0.156	0.646	0.000	68.154
Crisisequity	Crisis equity	83364	0.142	0.736	-67.528	1.091
CrisisCF	Crisis cashflow	83364	0.094	1.507	-11.169	232.511
Crisiscash	Crisis cash	83364	-0.008	15.074	-2708.017	3040.292
Crisisprofit	Crisis profitability	83364	0.038	0.237	-8.353	8.011
Crisisnetwork	Crisis business network	83364	0.084	0.144	0.000	2.417
Crisisdiversity	Crisis financing diversity	83364	0.043	0.689	-35.142	68.154
<b>Control variables</b>						
Growth	Sales growth	75124	0.393	5.373	-11.434	338.029
Size	Size	83265	6.926	0.49	1.892	10.036

The research model is proposed as below:

SMEs' financial resilience = f(lagged main variables, crisis variables, control variables)

In order to select which methodology to apply on panel data, the study uses Breusch and Pagan Lagrangian multiplier test (LM test)

to compare between Random Effects model and Pooled OLS model and the result shows that Random Effects is better. Then, Hausman test is run to compare Fixed Effects model and Random Effects model and Fixed Effects model is chosen.

**Table 3.** The results of LM test and Hausman test

Type of tests	H0	Chi value	Prob > Chi value
LM test	var(u)=0	47453.820	0.000***
Hausman test	difference in coefficients not systematic	3394.310	0.000***

#### 4. Results and Discussion

The model is significant in explaining financial resilience's variation. To test the explanatory power of the whole model, Stata used the F-test with the null hypothesis is H0: All coefficients of the variables are zero and P-value of F-test is 0. Thus, the model fits well enough to explain the dependent variable. Overall, the data fits with the model at around 18.65% (R square overall) to explain the dependent variable. Also, the model has a correlation between fixed-effect errors (ui) and other time-varying regressors (Xit) at 0.4. The

intraclass correlation, rho, shows that around 60% of the variance in financial resilience is due to differences between u<sub>i</sub>.

The correlation matrix shows that among explanatory variables, there are some variables strongly correlated with each other. First, main independent variables are correlated with their crisis variables due to the crisis variables' formulas. Second, some variables are highly correlated, namely *bank lending*, *equity*, *financing diversity*, because all of them have the same denominator which is total assets.

**Table 4.** Fixed Effect Regression Results

<b>Name of variable</b>	<b>Label</b>	<b>Financial resilience</b>
Loan	Bank lending	-0.042*** (0.000)
Network	Business network	0.086*** (0.000)
Cash	Cash	0.001 (0.369)
CF	Cash flow	0.000 (0.812)
Diversity	Diversity financing	0.025*** (0.000)
Equity	Equity strength	0.021*** (0.000)
Profit	Profitability	0.057*** (0.000)
Time	Time	0.031*** (0.000)
Crisisnetwork	Crisis business network	0.009 (0.484)
Crisiscash	Crisis cash	-0.001 (0.504)
CrisisCF	Crisis cashflow	-0.001 (0.289)
Creditcrunch	Credit crunch	0.006 (-0.431)
Crisisequity	Crisis equity	-0.026*** (0.000)
Crisisdiversity	Crisis financing diversity	-0.006 (0.259)
Crisisprofit	Crisis profitability	0.037*** (0.000)
Growth	Sales growth	0.001*** (0.000)
Size	Size	-0.048*** (0.000)
Constant		1.123*** (0.000)
R square overall		18.65%
Prob > F test		0.000***

*Note: The symbols \*, \*\*, \*\*\* indicates significance at 10%, 5%, 1%.*



What makes a SME in the UK which relies on bank loans survive throughout the credit crunch of 2008? The study suggests that SMEs have better financial resilience if they have a wide supplier network (H5); have higher profitability (H4); be less dependent on bank loans (H1); have more diverse sources of financing (H6); and have more internal equity (H2) regarding the value of their coefficients. Time of crisis and sales growth both have a positive impact on an SME's financial resilience, whereas firm size has a negative influence.

The study confirms the negative impact of bank lending on SMEs' financial resilience with the findings of the studies of Byrne et al. (2016), Chava & Purnanandam (2011), and Ryan et al. (2014). But the study shows that during the crisis between 2008 and 2012, there is no causal relationship between credit crunch and financial resilience, which is similar to that of Smallbone et al. (2012). This can be explained by missing values of bank loans during the crisis and then the product of bank loans and crisis time dummy variable (0 for the year before 2008 and 1 for the year from 2008 to 2012). Hence, the distribution of *credit-crunch* spreads more than the original variable *bank lending*, which possibly leads to an insignificant p-value (Dahiru, 2008).

We also give empirical evidence for the viewpoint of the positive effect of internal equity on financial resilience of Smallbone et al. (2012) concerning the vulnerability of UK and New Zealand SMEs by surveys in 2009, and Bernstein et al. (2019) regarding financial fragility of UK medium-sized private equity-backed firms from 2004 to 2011. However, the negative role of equity in crisis time on SMEs' financial resilience in UK may be added to previous studies. During economic turmoil, if an SME has a high ratio of equity this year, next year it would have less ability to adapt. The mechanism can be explained partly by the inflexibility of financing. When crisis occurs, a small firm needs to adapt quickly and flexibly to maintain its business activities. During crisis

there is a high need to spend an extraordinarily huge amount of money to maintain or change activities for adaptation while internal equity is fixed and difficult to change in a short time. Hence the inflexibility of internal equity would partly deteriorate the financial resilience of SMEs. The second contribution of equity differs from Smallbone et al. (2012), and Bernstein et al. (2019).

With reference to financial management skills, these cannot explain the financial resilience of British SMEs possibly because of missing data, hypothesis 3 has a low p-value of t-test to be rejected. It confirms the result of the study of Casey & Bartczack (1985). There could be some other more appropriate measurements for financial management skills.

Concerning the role of profitability in financial resilience of British SMEs, the effect is always positive with or without crisis. During the crisis, the effect of profitability is positive on financial resilience of SMEs, but with smaller explanatory power due to its coefficient possibly because of the multiple of crisis time. The study supports the studies of Delmar et al. (2013) and Bercovitz & Mitchell (2007) and contributes to the explanation of Smallbone et al. (2012) on resilient British SMEs in terms of profitability. SMEs have limitations of capital, and cannot easily obtain finance from external sources during the crisis, which potentially could lead them to firm exits. If SMEs have a business position with stable profitability before crisis, then during crisis, this profitability can help the firms generate capital in a condition of financial constraints. Along with internal equity, which is stable and difficult to raise in the short-term, the ability to make profits, or self-generate sufficient capital, is a remarkable foundation for SMEs in fluctuating markets then to do investments or make adaptations. This is supported by the study of Gunasekaran, Rai & Griffin (2011) and Smallbone et al. (2012).

In supplier network terms (measured by trade credit), generally the greater and stronger the supplier relationship, the more financially

resilient a UK SME is, which gives evidence for the studies of McGuinness, Hogan & Powell (2018) and Casey & O’Toole (2014). However, during and post-crisis, trade credit has no impact on SMEs’ financial resilience, because of its p-value. This is different from the result of McGuinness, Hogan & Powell (2018) which shows that trade credit more evidently helps SMEs in the post-crisis years. This difference may be coming from the data scope and missing values of trade credit among SMEs in the UK. Despite the substitute role of trade credit as an important source of external financing, during crisis when there are declining demands, SMEs have difficulties allowing their business partners to use trade credit as they themselves also face a liquidity shortage. Hence, possibly, the amount of trade credit during the crisis would be reduced for reasons arising from the suppliers. The explanation is supported by evidence from the data: in most SMEs during and prior crisis period, trade credit amount was actually less than that in the pre-crisis period.

The diversity of financial options can bring flexibility to a small firm and reduce the dependence on bank lending, which is hard to access during the crisis, hence we confirm the result of Clarke et al. (2012), but with less confidence, because of the unclassified data of each method, such as venture funding or hybrid instruments, hence the study just focuses on leasing and purchasing or group loans, which is mentioned in the study of Cosh & Hughes (1993). Thus, it is impossible to see the innovative financing methods British SMEs have, which is a limitation of this study. Also, the study chose unlisted firms, which limits the access of venture fundings or securitization methods of British SMEs. The study is different from Clarke et al. (2012). During crisis, there is no effect on SMEs’ financial resilience because of missing values and multiple of crisis time, and from the fact that the amount of leasing, purchasing and group loans reduced because of credit crunch and increased credit risk when the borrower or SMEs have less ability to insure the loans they borrow. The effect of credit

crunch makes lending firms stricter in giving loans, which can be proved by the fact that over 70% of SMEs cannot seek external sources if they are rejected by banks (National Audit Office, 2013), while the credit risk is shown by the reduced amount of internal equity as well as profitability, from the data collected.

Concerning the dummy variable crisis time and control variables, crisis time surprisingly makes an SME become more resilient, along with the marginally positive effect of growth. The effect of crisis time, a dummy variable, is in contrast with the finding of McGuinness, Hogan & Powell (2018). This can be explained by selecting different dummy values: my study used value 1 for both during- and post-crisis periods, but the study of McGuinness’ team separated during- and post- crisis periods. In terms of firm size, in this study it has a negative effect, an opposite result compared to the positive effect on firm’s survival of Clementi and Hopenhayn (2006), and Byrne et al. (2016). Regarding growth, it is confirmed by the study of McGuinness, Hogan & Powell (2018) which also used sales growth as a control variable.

## 5. Conclusions and Implications

### 5.1. Conclusion

The result shows that profitability, internal equity, supplier network, and diverse financing have a significant influence on SMEs’ financial resilience; especially during the crisis the effect of profitability and internal equity do help SMEs mitigate the adverse impact of financial crisis. Hence, if an SME has a strong ability to make profits in any situation, in the long run, the internal equity would be built up due to retained earnings, which helps it raise its internal strength. During the crisis, this profitability can help SMEs generate capital for more investments, and become more resilient to unexpected events. Besides that, maintaining a wide and good supplier network or diverse financing sources would help SMEs to have less dependence on bank lending and become more flexible in financing.

## 5.2. Implications

In practice, in addition to the austerity fiscal policy to reduce the UK's national debt, the UK government delivered huge financial packages to aid the banking system, with the hope that this can indirectly assist SMEs lending (Brown & Lee, 2016). Actually, it took a while for the failing banks to recover before giving supporting lending schemes to SMEs. Hence, in my opinion, it will be better if the UK government could have provided more immediate and direct financial aid packages to support SMEs which needed financing to survive during financial crises. For example, they could reduce and/or remove specific taxes for SMEs such as taxes on raw materials to make products, or through some public banks give some lending with cheap interest rates to SMEs. The result shows that, during the crisis, bank loans or other financing sources have no effect on firms' financial resilience, possibly because these financing sources are limited and difficult to obtain due to the bank crisis, while for the whole 10-year period, these sources have a strong effect on SMEs' financial resilience.

Regarding SME owners, in order to enhance their financial resilience, they need to build their business position and capacity by first enhancing their ability to make profits, building up their internal equity, expanding their networks of suppliers, and diversifying their extra financing sources. The result shows that profitability, internal equity, supplier network, and diverse financing have a significant influence on SMEs' financial resilience; especially during a crisis profitability and internal equity do help SMEs mitigate the adverse impact of financial crisis.

Hence, if an SME has a strong ability to make profits in any situation, in the long run, the internal equity would be built up due to retained earnings, which helps it raise its internal strength. During crisis, this profitability can help SMEs generate capital for more investments, and become more resilient to unexpected events. Besides that, maintaining a wide and good supplier network or diverse

financing sources would help SMEs to have less dependence on bank lending and become more flexible in financing.

The findings can be applied in the context of Vietnamese SMEs during the recent Covid pandemic. According to the survey of the PSD Committee on Vietnamese companies during the Covid-19 outbreak (2021), there were 69% of companies which stopped their businesses due to the pandemic and most of them are SMEs. While there was weak demand for their products, producing costs increased during the pandemic, according to Duong et al. (2022). Although different features of the two crises as well as two governments, Vietnamese SMEs during the Covid pandemic share some common problems with British SMEs during the bank crisis, namely weak internal equity and profitability but face their own difficulties such as disrupted global and national supply chain, high fees to maintain their workforce despite reduced product demands or weak cashflow. In fact, the Vietnamese government has released packages to support Vietnamese SMEs, for example supporting lending schemes through banks, reducing taxes for SMEs, delaying time to pay back bank loans of SMEs, which the UK government could not do because of its banking system's failures. The study suggests the Vietnamese government continues supporting aids for SMEs for the post-Covid-19 period, especially those through the banking system and also eases restrictions on foreign investors or FDI funds so that Vietnamese SMEs can have enough financing to recover more quickly.

## 5.3. Limitations

The study has several limitations such as the measurement of dependent variable financial resilience. Actually, different firms have different financial resilience levels, and cannot be only classified as 0 (no financial resilience) and 1 (have financial resilience). *For further study*, it could be taken as a set of variables that can lead to a range of values of financial resilience. *Secondly*, choosing only unlisted SMEs restricts the values of hypothesis

6 on diversity of financing sources. Hence, future research could omit this constraint and also find more information about innovative financings that Fame cannot offer, to measure the diversity of financing factors. *Thirdly*, some variables have a high correlation, namely variables about financing sources, because they have a similar denominator which is total assets and they are a tradeoff with each other, and main variables and their crisis variables. This could possibly reduce the reliability of the study. *Fourthly*, fixed effects model controls some unobservable variables which may affect significantly small firms' financial resilience

as the observed variables only explain 19% of financial resilience. In future studies, this issue of reliability should be solved by adding more variables in more aspects, such as sustainability. Finally, the study misses some further tests about multicollinearity, autocorrelation, heteroskedasticity, endogeneity. Besides these suggestions above, future studies would be more reliable if more observations are taken into account with longer time periods, with more financial crisis incidents and across more countries. Also, some further tests for statistical issues and Robustness tests should be considered.

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