Eurasian Journal of Economics and Finance, 8(3), 2020, 183-192
DOI: 10.15604/ejef.2020.08.03.005

EURASIAN JOURNAL OF ECONOMICS AND FINANCE

www.eurasianpublications.com

TRADE CREDIT POLICY: REVISITING TARGETING OF TRADE PAYABLES AND RECEIVABLES IN BRICS LISTED FIRMS[1]

Shame Mugova
Corresponding author: Durban University of Technology, South Africa
Email: mugovas@gmail.com

Farai Kwenda
Eswatini University, Eswatini
Email: kwendaf28@gmail.com

Received: June 15, 2020 Accepted: August 17, 2020

Abstract

The study investigates if firms in BRICS countries pursue a target optimal level of trade credit policy. Trade payables levels may not always at the desired levels and firms take time to adjust from real to target levels. The level of financial sector development may influence firms' speed and cost adjustment. Employing a dynamic panel data model estimated with the difference and system Generalized Method of Moments estimation techniques on a panel of 3353 listed BRICS non-financial firms, the study established that in pursuit of growth opportunities firms have a deliberate trade credit target levels. Firms pursue a target optimal level of trade payables and trade receivables and firm size affects creditworthiness and access to capital markets, which influences speed of adjustment from current to desired levels of trade payables. Investment in trade receivables require access to capital for additional funding and poorly developed financial sectors makes it costly to adjust towards optimal credit level. Different levels of financial sector development affect access to alternative sources capital which influences optimal trade credit policy.

Keywords: Trade Credit, Financial Sector Development, Trade Payables, Trade Receivables

JEL Classifications: F13, E51, H32

1. Introduction

Firms have an optimal capital structure for long-term debt referred to as target debt to equity ratio. In order to finance growth and operations a firm can use both its own capital and borrowed capital (Hundal *et al.* 2018). Optimal capital structure implies firms adjust from current debt-equity ratio to desired optimal level which minimizes costs (Ozkan, 2001). Trade payables area component of debt capital used to finance short term working capital requirements. The target debt level implies firms ought to have a target or optimal level of trade payables which is component of debt

[1]This work is based on the research supported wholly / in part by the National Research Foundation of South Africa (Grant Numbers: 120759).

capital (Kwenda and Holden, 2013). Presuming that firm's policy on the level of trade credit employed to finance current assets and current liabilities is intentional this has repercussions for financing choices. Firms can significantly raise large amounts of finance through trade credit which may have an impact on the quantity of funding required to be raised through bank loans or stock markets. Martinez-Sola *et al.* (2013) states that market imperfections may affect the trade credit decision and in turn credit policy will influence firm value. The consequence of an optimal trade credit policy is that trade credit levels influence and affect firm value. There is a positive relationship between firm value and trade credit at low levels of receivables and a negative one at high levels (Martinez-Sola *et al.* 2013). When investment in trade receivables ceases to increase firm value; investors will pressure firms to reduce trade credit. The reduction in trade credit reduces opportunity cost and financial risk. The limited trade credit granted will minimize reduction in profitability and liquidity while also encouraging managers to maintain an investment in trade receivables which maximizes operational, financial, and commercial benefits (Martinez-Sola *et al.* 2013). Firm value rises with trade receivables up to a certain point and then start to decrease with further increase in receivables.

Trade credit is comparable to giving an 'interest-free' loan to clients who recognize this as an inexpensive source compared with bank credit acquired to make a purchase (Cheng and Pike, 2003). The borrowing of loans from financial institutions comes with interest whilst buying on trade credit terms may not involve interest where both the cash and the credit prices are equivalent. Trade credit is mostly attractive seller firms with access to capital at lower cost and these benefits are distributed on to the customer firms (Cheng and Pike, 2003). Trade credit is a vital source of current assets and current liabilities finance to buyer firms with limited access to capital markets (Cheng and Pike, 2003). It is generally hassle free to acquire short-term capital from suppliers through trade credit in the course of doing business and relatively difficulty to acquire a bank loan. Firms with restricted access to capital markets resort to trade credit as a substitute.

There is an optimal debt level and by insinuation, firms ought to have a target level of trade receivables which minimizes the costs of receivables. Nadiri (1969) proved that the current trade payable levels may not at all time be at the preferred level, and firms adjust from current to target levels, which takes time. Hence, the level of financial sector development may influence firm's speed and cost adjustment. If we establish that firms have deliberate trade credit policies through pursuing a target level, it will be interesting to investigate how firm trade policies are influenced by financial sector development. The paper tests if listed firms in BRICS countries adjust towards an optimal level of trade credit in pursuit of growth opportunities.

This study contributes in a number of ways to the body of knowledge on working capital finance. First, we offer new evidence on optimal trade credit finance in emerging markets (BRICS) with varying levels of financial sector development. None of the present studies provide any emerging market evidence, on the relationship between trade credit and financial development despite the fact that firms from emerging markets are increasingly playing a significant role in the world economy and financial markets. The use of trade credit to pursue growth is a common phenomenon in emerging markets where financial sectors are not as developed as first world countries. The availability of alternative sources influences pursuance of an optimal trade credit policy and adjustment when off-target. Second, from a methodological perspective, the current work improves on previous work by using a dynamic panel data model. This methodology offers numerous benefits. It allows us to control for the presence of unobservable heterogeneity, as firms are followed over time. We can examine a partial adjustment model that allows us to test whether firms pursue target levels of trade payables and receivables. Our results offer direct evidence that firms in BRICS countries pursue target trade payables and receivables levels and they face adjustment costs in pursing their target levels.

This paper is structured into four segments, apart from the introduction and the conclusions. Section 2 offers a quick overview of trade credit and financial sector development and establishes the research hypotheses. Section 3 describes data sources and sample. Section 4 describes the methodology of analysis. Section 5 is dedicated to presenting and discussing the results obtained.

2. Theoretical background: Financial sector development

Firms in countries where the financial sector is under-developed substitute bank credit with informal credit granted by their suppliers to finance growth. Fisman and Love (2003) found that industries that depend heavily on trade credit grow comparatively more rapidly in countries with less developed financial intermediaries. Less financial sector development in a country results in firms being more likely to resort to trade credit, which is necessitated by the unavailability of bank credit. Private firms in China grow rapidly with limited financing from banks; this shows how firms in a country with poorly developed financial institutions fund growth opportunities (Ge and Qiu, 2007). Khan and Semlali (2000) argue that bank credit to the private sector accurately reflects the role of financial intermediaries in channeling funds to the private sector. The measure for financial sector development follows the steps of Adnan (2011) who used principal component analysis to develop an index. Principal component analysis is used to develop a single measure for financial sector development through constructing an index in Table 1. There is no sole indicator of financial development; therefore, an index was created using ten major variables of financial sector development. Money market, banking and stock market variables were used. Banking system and the stock market have a very important role for the economic development (Vo *et al.* 2016). Ten variables were used and for the purposes of this study, they were reduced to a single measure through principal component analysis.

Table 1. Ranking of BRICS countries

Country	Financial Sector Development Index
Brazil	4.0109
Russia	5.5733
India	7.9089
China	8.2691
South Africa	7.3032

Source*:* Authors' own preparation based on World Bank (2016).

An index of financial sector development was constructed through principal component analysis. Data from global financial sector development was used and ten variables were used to construct the index. The variables used include bank credit to bank deposits, bank deposits to GDP and bank concentration. Principal component analysis was used to decrease the dimensionality in data whilst retaining all the variation available in data. The data was transformed into a new single variable. The main strength of the construction of a financial development index using principal component analysis is that the weights of the index are based on the inner correlation of all the individual measures.

3. Data sources and sample

The population refers to all firms listed on the JSE (a total of 394), 275 Russian companies listed on the St Petersburg Exchange, 1.319 firms listed on the NSE of India, 366 listed on the BM&F Bovespa of Brazil and 1.799 firms listed on the Shenzhen Stock Exchange of China. The sample consisted of 3.353 non-financial firms listed on these stock exchanges. These firms are truly representative as they include the entire population of interest. Table 2 records the population and sample from each stock exchange.

Table 2. BRICS Stock Exchanges

Country	Stock Exchange	Population	Sample
Brazil	BM&F Bovespa	366	347
Russia	St Petersburg Exchange	275	122
India	National Stock Exchange	1319	983
China	Shenzhen	1799	1652
South Africa	Johannesburg Stock Exchange	394	249

Source: Authors' own preparation

Data was collected from published financial statements of non-financial listed companies from the BRICS countries. Data was collected for the accounting period 2001 to 2013 accessible on the Bloomberg online database which offers financial statements for firms listed on the world's stock exchanges.

Trade credit demand for the purpose of analysis in this study is calculated as total trade payables/total assets. Trade credit demand indicates how the firm finances the flow of inputs received from its suppliers. Trade credit supply is calculated as trade receivables/total assets. Trade credit supply indicates how much the firm extends trade credit to other firms. Supply and demand of trade credit directly measures the use of trade credit, which primarily finances sales and purchases. The measure of supply and demand of trade credit follows (Deloof and La Rocca, 2015).

4. Methodology

The panel model used follows that of Kwenda and Holden (2014) and Bhole and Mahakud (2004) but differs on the measurement of trade credit demand and supply and its determinants. The generalized method of moments (GMM) approximation model is used the reason being to control for unobservable heterogeneity and possible endogeneity issues. In this model, trade credit demand trade payables/total assets ($TPTA$) and trade credit supply trade receivables/total assets ($TRTA$) are explained in terms of k explanatory variables explanatory variables. So the behavioral equation for the panel data model can be specified as:

$$TPTA_{it} = \alpha + \sum_{k} \delta_k X_{kit} + v_{it}$$

Where $TPTA$ is trade credit to total assets (trade payables level); firms are denoted by subscript i = 1, …, N; time t = 1, … T; X_{it} is a k × 1 vector of explanatory variables;δ_k is a vector of the unknown parameters to estimated; whilst $v_{it}$is the random disturbance. We then assume that firms adjust their $tpta$ level according to the degrees of adjustment λ in order to reach their target level.

4.1. General method of moments

Arellano and Bond (1991) advanced first-difference two stage General Method of Moment approach for various reasons. Regressions of ordinary least squares may lead to biased and unpredictable approximations because the independent variables are not independent of the error term. The second reason is that the fixed effect estimator yields biased but dependable approximations when *T* tends to infinity and not when *N* tends to infinity (Kwenda and Holden, 2014). This phenomena is referred to as the dynamic panel bias also known as the Nickell bias (Nickell, 1981). Anderson and Hsiao (1981) proposed the Instrumental variable (IV) estimator because it yields reliable and efficient approximations in a dynamic panel if the error term in levels is not serially correlated. Nonetheless, its shortcoming is that it does not utilize all the existing moments, which renders it less efficient (Kwenda and Holden, 2014). GMM in first differences yields more reliable approximations, therefore its choice over the Anderson and Hsiao (1981) estimator GMM in first differences deploys further instruments gotten by applying the moment conditions that exist between the lagged dependent variable and the disturbances. Approximation of the dynamic error components model is measured using two alternative linear estimators that are intended to improve the properties of the standard first differenced GMM estimator (Blundell and Bond, 1998).

The estimation model uses trade payables to total assets $TPTA_{it}$ and trade receivables to total assets $TRTA_{it}$.

$$TPTA_{it} = \alpha + \beta_0 tpta_{it-1} + \beta_1 \frac{Trade\ receivables}{Total\ assets} + \beta_2\, lnsize + \beta_3 growth + \eta_t + \varepsilon_{it} \quad (1)$$

$$TRTA_{it} = \alpha + \beta_0 trta_{it-1} + \beta_1 \frac{Trade\ payables}{Total\ assets} + \beta_2\, lnsize + \beta_3 growth + \eta_t + \varepsilon_{it} \quad (2)$$

4.2. Growth opportunities

Firms with growth prospects will normally have insufficient internal capital to finance those growth prospects and would rely heavily on trade credit (Niskanen and Niskanen, 2006). Total asset growth can be either an increase or decrease in assets, hence a variable $growth = \frac{(total\ asset - l.total\ asset)}{total\ asset}$ to denote growth.

4.3. Firm size

Company size and age are commonly used as representations of firm's solvency and access to financial markets (Garcia-Teruel and Martinez-Solano, 2010; Akinlo, 2012). Firm size is measured by $\ln size = \ln(total\ asstets)$. Huge firms are more solvent and consequently they can access more trade credit than smaller firms (Kwenda and Holden, 2014). Nevertheless, large firms can attract capital from wide spread sources; as a result, they can depend less on trade credit.

4.4. Panel unit root tests

Use of non-stationary data yields spurious regression results (Granger and Newbold, 1974), it is essential to investigate whether there is stationarity. The Augmented Dickey-Fuller Fisher-type procedure for panel unit roots was used to test for stationarity and the findings are presented in Table 2. The null hypothesis is that all panels contain unit roots; meaning the series is not stationary. The outcomes show that all variables are integrated of order 0, which suggests there are no unit roots in the data. Therefore, regressing the data in levels will not yield spurious regressions and incorrect interpretations.

Table 3. Fisher-type unit root results

Variable	P	Z	L*	Pm	Order of integration
TR/TA	10000***	-53.2970	-54.2329	64.8556	0
TP/TA	9604***	-49.8712	-50.458	60.4175	0

Note: *, ** and *** denote significance at 10%, 5% and 1%, respectively.
Source: Authors own calculations using data obtained from Bloomberg (2016)

The use of non-stationary data produces spurious regression outcomes, thus tests for stationarity of $TRTA$ were computed by the way of Fisher-type panel unit root test. The results in Table 3 p=0.0000<0.5 which lead to rejection of null hypothesis. Therefore, the panels are stationary. For $TPTA$ fisher-type panel unit root test was conducted which gave a result p=0.0000<0.5, which lead to rejection of null hypothesis. Therefore, the panels are stationary.

Acceptability of the instruments is shown by way of the Sargan test, which is also recognized as the J test. The Sargan test checks for overidentifying restrictions. The *nth*-order serial correlation in the instruments was checked by conducting the *m*(*n*) test. The m(n) testis asymptotically distributed as a standard normal under the null of no second-order serial correlation of the differenced residuals.

Table 4. Specification test results

	South Africa		Russia		India		China		Brazil	
	m^2	Sargan test	m^2	Sargan test	m^2	Sargan test	m^2	Sargan test	m^2	Sargan test
Lags	1		2		2		4		4	
TPTA	0.5084	0.2988	0.2868	0.1356	0.8567	0.0686	0.7465	0.0727	0.1412	0.0704
TRTA	0.4855	0.5824	0,1670	0,4060	0.5948	0.0706	0.2663	0.1410	0.9054	0.3363

Source: Author's own preparation based on Bloomberg (2016)

Table 4 presents the results of the Sargan test of overidentifying restrictions J as a test for instruments validity, although Blundell and Bond (2000) report Monte-Carlo evidence that this test has a tendency to over-reject, specifically when the data are persistent and the number of time-series observations enormous. Pertaining to the evidence resulting from the m2 statistics and the Sargan test, different sets are used of lagged instruments across BRICS countries, starting from instruments in t−1 for South Africa and till instruments beginning in t−4 in China and Brazil. For each individual country, a lag structure that best fitted the m2 and J tests was obtained. The rationale being that there is different growth dynamics of firms between countries. For trade receivables over total assets, the model is valid for Brazil, Russia, India, China and South Africa. The tests are valid for trade payables over total assets $TPTA$ for the following countries South Africa, Brazil, India, Russia, and China.

5. Data analysis and results

The regression results for the lagged dependent variable, $TRTA_{t-1}$ *(trade receivables/total assets)* shows firms pursue a target level of trade receivables. The coefficient of $TRTA_{it-1}$ is precisely defined in model 2, which backs the primary argument of this study. $TRTA_{it-1}$ is positive and statistically significant at 1% level of significance in model 2; for South Africa, Russia, China, and India and statistically insignificant at 5% level of confidence for Brazil as shown in Table 5. Hence, the dynamic approach used in this study is not rejected.

Table 5. Regression receivables to total assets

	Brazil	*Russia*	*India*	*China*	*South Africa*
	TRTA	TRTA	TRTA	TRTA	TRTA
L.TRTA	0.00115	0.350*	0.591***	0.0592**	0.346***
	(0.02)	(2.28)	(11.46)	(2.99)	(4.82)
TPTA	-0.216***	0.117**	0.110**	-0.0373**	0.335***
	(-4.67)	(2.80)	(2.78)	(-3.03)	(4.06)
Lnsize	-0.237***	-0.0321	-0.0142**	-0.0201	-0.0192*
	(-5.07)	(-1.43)	(-2.60)	(-1.82)	(-2.50)
Gr	-0.653***	0.0191	-0.00609	-0.0250***	0.000885*
	(-7.29)	(0.99)	(-1.30)	(-5.46)	(2.11)
_cons	0.409***	0.232	0.113***	0.268***	0.139***
	(6.51)	(1.56)	(4.37)	(8.51)	(3.83)
N	2022	841	6620	7764	2098

Note: t statistics in parentheses. *p< 0.05, **p< 0.01, ***p< 0.001

Source: Own construct based on Bloomberg (2016)

South African, Russian, China and Indian firms have target levels of trade receivables and the trade receivables levels and are persistent over time. Our findings on trade receivables are similar to Martinez-Sola *et al.* (2013) who found that strategic investment in receivables is used to retain customers. South African, Chinese, Russian and India firms partially adjust towards

their target levels in an attempt to reach their targets. The adjustment coefficient, which is calculated as 1 minus the coefficient of $TRTA_{t-1}$ (1 – 0.346) is 0.654 in model 2, for South Africa providing some evidence that the speed of adjustment by South African firms in the direction of their target trade credit usage level is comparatively quicker. Russia 1 minus the coefficient of $TRTA_{t-1}$ (1 – 0.35) is 0.65 in model 2, for Russia providing some indication that the speed of adjustment by Russian firms towards their target trade credit usage level is somewhat quicker. The swiftness of adjusting trade credit by South African firms and Russian firms is 0.65. For India the adjustment coefficient is calculated as (1 – 0.59) which is 0.41 in model 2, providing some evidence that the promptness to adjust trade credit by Indian firms towards their optimal level is relatively slower than South Africa. In China, the adjustment coefficient is calculated as (1-0.0592) which is equivalent to 0.9408 which is the highest among all BRICS countries and very close to 1 affirming that the speed of adjustment in China is the fastest.

China is the country with the most developed financial sector amongst all BRICS countries and also has the highest speed of adjustment amongst all BRICS countries. Chinese firms have better access to sources of finance compared to other BRICS firms therefore the speed of adjustment is very fast. Offering trade credit makes it necessary for firms to acquire additional funds from the capital market to fund the investment in trade receivables, thus increasing their dependence on external finance (Martinez-Sola *et al.* 2013). Brazil is one of the country with least developed financial sectors amongst other BRICS and firms do not adjust trade credit level towards a target level possibly due to limited access to sources of capital. The findings confirm that level of financial sector development has an influence on trade credit policy. In a country with poorly developed financial sector, firms below the desired level of receivables find increasing investment in receivables costly. Firms may consequently stay off target because it is costly to adjust in the direction of the optimal level of trade credit.

Table 6. Regression payables to total assets

	Brazil TPTA	Russia TPTA	India TPTA	China TPTA	South Africa TPTA
L.TPTA	0.542***	0.743***	0.154**	0.534***	0.426***
	(5.31)	(70.55)	(2.83)	(12.60)	(524)
TRTA	0.793***	-0.163***	-0.0784***	0.0585**	0.379***
	(19.14)	(-6.28)	(-3.93)	(2.66)	(5.14)
Lnsize	0.537***	0.252***	-0.0886***	0.149***	0.252***
	(8.67)	(6.48)	(-5.37)	(4.86)	(6.48)
Gr	1.319***	-0.0217*	-0.430***	0.00523	-0.00128***
	(9.95)	(-2.31)	(-7.02)	(1.32)	(-0.13)
_cons	-0.0900	0.153*	0.166***	0.00852	-0.00354***
	(-1.22)	(2.41)	(4.32)	(0.47)	(-14.98)
N	2022	723	6242	5661	0.0285*
					(0.57)
					723

Note: *t* statistics in parentheses. $^{*}p< 0.05$, $^{**}p< 0.01$, $^{***}p< 0.001$

Source: Authors' own preparation based on Bloomberg (2016)

The results for the regression of lagged dependent variable, $TPTA_{t-1}$ (trade payables/total assets) in Table 6 shows firms pursue a target level of trade payables. The coefficient of $TPTA_{it-1}$ is accurately defined in model 1, which backs the main argument of this study. $TPTA_{it-1}$ is positive and statistically significant at 1% in model 2; for Brazil, Russia, India, China and South Africa. Thus, the dynamic method applied in this study is not rejected. The result on trade payables is similar to Kwenda and Holden (2014). South African firms have optimal target levels of trade payables and the trade payables levels are persistent over time. South African firms partly adjust in the direction of their target levels in an effort to reach their optimal targets. The adjustment coefficient, which is calculated as 1 minus the coefficient of $TRTA_{t-1}$ (1 – 0.426)

is 0.574 in equation 1, for South Africa providing confirmation that the speed of adjustment by South African firms in the direction of their target trade credit usage level is comparatively quicker. The speed of adjustment for Brazil (1-0.542) which is equal to 0.458 which is very low implying the speed of adjustment by Brazilian firms is very slow. The speed of adjustment for Russia (1-0.743), which is equal to 0.257, which is even lower implying that Russian firms slowly adjust the levels of trade payables and Russia is amongst the two countries with least developed financial sectors. The speed of adjustment for China (1- 0.154), which is equal to 0.846, which is close to one implying the speed of adjustment by Chinese firms is very fast. The fact that China is the country with the most developed financial sector and has highest speed of adjustment confirms that financial sector development has an effect on speed of adjustment.

The speed of adjustment for India (1-0.534), which is equal to 0.466 and low implying the speed of adjustment of trade payables by Indian firms, is relatively slow. Size was statistically insignificant whilst growth was statistically significant which means firms re-balance trade payables in pursuit of growth opportunities. China has the highest speed of adjustment for trade payables and it is also the country with the most developed financial sectors. Since Chinese firms have greater access to sources of finance, they can substitute trade payables with other financing sources when they are above their target. Therefore, financial development has consequences on speed of adjustment. Russia and Brazil have the least developed financial sectors and they also have lower speeds of adjustment implying this could be due to limited alternatives for trade payables.

6. Conclusion

A GMM approximation technique was used in order to control for unobservable heterogeneity and possible endogeneity problems, the study establishes that listed firms in South Africa, Brazil, India, Russia and China have a target level of trade payables and trade receivables and they partly adjust in the direction of target levels. The speed of adjustment towards the target level is relatively fast for trade receivables for both South Africa and Russia as shown by a coefficient of 0.65 for both countries and $TRTA$ levels are persistent over time. South African and firms partially adjust towards their target levels in an attempt to reach their targets. The adjustment coefficient for Chinese firms are the highest and China is the country with most developed financial sector implying that it has an effect on speed of adjustment. The findings show that the adjustment of both receivables and payables is faster relative to total assets. Our findings are similar to Abuhommous and Mashoka (2018) who found that firms have a target accounts receivable level and move toward this target quickly.

South African and Brazilian firms partially modify their trade credit towards their target levels in an attempt to reach their target levels of $TPTA$. The modification or adjustment coefficient is 0.893 for South Africa providing some indication that the speed of modification by South African firms towards their target trade credit level is very quick. The coefficient is 0.611 for Brazil providing some evidence that the speed of adjustment by Brazilian firms towards their target trade credit usage level is relatively fast but slower than that of South Africa. South African, Chinese, Indian, Russian and Brazilian firms partially adjust towards target levels of $TPTA$ in an attempt to reach their targets. The adjustment coefficient for South African firms is 0.574. South Africa, Russia, China and India target $TRTA$ and partialy adjust towards the target. South Africa targets all ratios investigated in this study amongst other BRICS countries and the speed is relatively fast than other countries. The probable reason could be advanced financial sector of South Africa makes it less costly to adjust from current levels of trade credit to desired levels of trade credit compared with other BRICS countries. South Africa also ranks top in rule of law therefore aspects such as institutional environment promotes trade credit. The results support the argument that size and growth opportunities, explain firms' use of supplier financing as a source of funds. Speed of adjustment of trade credit levels is affected by the level of financial sector development in a country.

References

Abuhommous, A. A. A. and Mashoka, T., 2018. A dynamic approach to accounts receivable: the case of Jordanian firms. *Eurasian Business Review*, *8*(2), pp. 171-191. https://doi.org/10.1007/s40821-017-0074-8

Adnan, N., 2011. Measurement of financial development: A fresh approach. In *8th International Conference on Islamic Economics and Finance. University of Surrey, United Kingdom and Comsats Institute of Information Technology, Islamabad, Pakistan*.

Akinlo, O. O., 2012. Effect of working capital on profitability of selected quoted firms in Nigeria. *Global Business Review*, 13(3), pp. 367-381. https://doi.org/10.1177/097215091201300301

Anderson, T. W. and Hsiao, C., 1981. Estimation of dynamic models with error components. *Journal of the American statistical Association*, 76(375), pp. 598-606. https://doi.org/10.1080/01621459.1981.10477691

Arellano, M. and Bond, S., 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies*, 58(2), pp. 277-297. https://doi.org/10.2307/2297968

Bhole, L. and Mahakud, J., 2004. Behaviour of trade credit: time series and panel data analysis. *Economic and Political Weekly*, pp. 1277-1290.

Bloomberg, 2016. *Reference data* [online]. Available at: <https://www.bloomberg.com/professional/product/reference-data/> [Accessed 13 August 2020].

Blundell, R. and Bond, S., 1998. Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), pp. 115-143. https://doi.org/10.1016/S0304-4076(98)00009-8

Blundell, R. and Bond, S., 2000. GMM estimation with persistent panel data: an application to production functions. *Econometric reviews*, 19(3), pp. 321-340. https://doi.org/10.1080/07474930008800475

Cheng, N. S. and Pike, R., 2003. The trade credit decision: evidence of UK firms. *Managerial and Decision Economics*, 24(6-7), pp. 419-438. https://doi.org/10.1002/mde.1049

Deloof, M. and La Rocca, M., 2015. Local financial development and trade credit policy of Italian SMEs. *Small Business Economics,* 44(4), pp. 905-924. https://doi.org/10.1007/s11187-014-9617-x

Fisman, R. and Love, I., 2003. Trade credit, financial intermediary development, and industry growth. *The Journal of finance*, *58*(1), pp. 353-374. https://doi.org/10.1111/1540-6261.00527

Ge, Y. and Qiu, J., 2007. Financial development, bank discrimination and trade credit. *Journal of Banking & Finance*, 31(2), pp. 513-530. https://doi.org/10.1016/j.jbankfin.2006.07.009

García-Teruel, P. J. and Martínez-Solano, P., 2010. Determinants of trade credit: A comparative study of European SMEs. *International Small Business Journal*, 28(3), pp. 215-233. https://doi.org/10.1177/0266242609360603

Granger, C. W. and Newbold, P., 1974. Spurious regressions in econometrics. *Journal of Econometrics*, 2(2), pp. 111-120. https://doi.org/10.1016/0304-4076(74)90034-7

Hundal, S., Sandstrom, A. and Uskumbayeva, A., 2018. The impact of the financial crisis on corporate capital structure dynamics in the nordic countries. *Eurasian Journal of Economics & Finance,* 6(3), pp. 34-51. https://doi.org/10.15604/ejef.2018.06.03.003

Khan, M. M. S. and Semlali, M. A. S., 2000. *Financial development and economic growth: An overview* (No. 0-209). International Monetary Fund. https://doi.org/10.5089/9781451874747.001

Kwenda, F. and Holden, M., 2013. Working capital structure and financing pattern of selected JSE-listed firms. *Mediterranean Journal of Social Sciences*, 4(13), pp. 531-540. https://doi.org/10.5901/mjss.2013.v4n13p531

Kwenda, F. and Holden, M., 2014. Trade credit in corporate financing in South Africa: evidence from a dynamic panel data analysis. *Investment Management and Financial Innovations,* 11(4), pp. 268-278.

Martínez-Sola, C., García-Teruel, P. J. and Martínez-Solano, P. 2013. Trade credit policy and firm value. *Accounting & Finance*, 53(3), pp. 791-808. https://doi.org/10.1111/j.1467-629X.2012.00488.x

Nadiri, M. I., 1969. The determinants of trade credit in the US total manufacturing sector. *Econometrica: Journal of the Econometric Society*, 37(3), pp. 408-423. https://doi.org/10.2307/1912790

Nickell, S. 1981. Biases in dynamic models with fixed effects. *Econometrica: Journal of the Econometric Society*: 49(6), pp. 1417-1426. https://doi.org/10.2307/1911408

Niskanen, J. and Niskanen, M. 2006. The determinants of corporate trade credit policies in a bank-dominated financial environment: The case of Finnish small firms. *European Financial Management*, 12(1), pp. 81-102. https://doi.org/10.1111/j.1354-7798.2006.00311.x

Ozkan, A., 2001. Determinants of capital structure and adjustment to long run target: evidence from UK company panel data. *Journal of business finance & Accounting*, 28(1-2), pp. 175-198. https://doi.org/10.1111/1468-5957.00370

Vo, X. V., Nguyen, H. H. and Pham, K. D., 2016. Financial structure and economic growth: the case of Vietnam. *Eurasian Business Review*, *6*(2), pp. 141-154. https://doi.org/10.1007/s40821-016-0042-8

World Bank, 2016. *Global financial development* [online]. Available at: <https://datacatalog.worldbank.org/dataset/global-financial-development> [Accessed on 13 August 2020]