8. How is Financial Stability Impacted by Political and Economic Stabilities in Emerging Markets? A Dynamic Panel Analysis

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Abstract

In this paper, we investigate the impacts of political and economic stability on financial stability in the BRICT countries, namely Brazil, Russia, India, China and Turkey, by using dynamic cross-sectional analysis based on quarterly panel data sets. In the present study, we mainly employ the common correlated effects group mean (CCEGM) model, which adds a dynamic nature to panel data analysis. The empirical results show that there is a strong effect from political risk and economic deterioration towards financial stability. We discuss the policy implications of the findings for the emerging markets. Additionally, the applied methodology allows us to produce empirical findings for each country, thus facilitating country-specific discussions.

Keywords: Financial stability; political stability; economic stability; dynamic panel data analysis; BRICT countries

JEL codes: C54; C58; G0

1. Introduction

In this article, we examine the effect of political and economic stability on financial stability in the BRICT countries, namely Brazil (B), Russia (R), India (I), China (C) and Turkey (T), by applying dynamic cross-sectional analysis. The main characteristics of the BRICT countries are large populations, high economic growth, and vast land area. As mentioned by Sozen and Karik (2017), BRICT countries are accepted as the fastest growing emerging economies. Frank and Frank (2010) clearly stated that the BRICT countries would overtake the G7 countries based on the economic indicators of those countries. The BRICT countries

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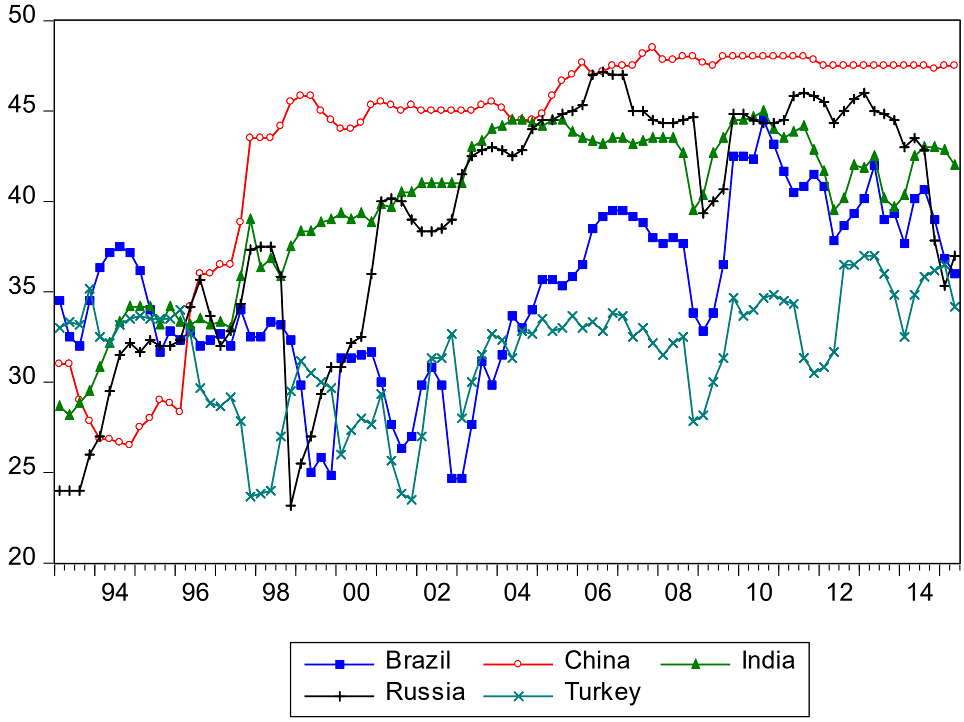
account for more than 40% of the world's population and more than 25% of the total global land area. According to the International Country Risk Guide (ICRG) data set, the BRICT countries were defined as having moderate to low financial risk environments, as represented in Figure 1. Among these economies, China is the most stable and has largely remained within the low financial risk environment, while Turkey is the weakest in terms of financial stability. Figure 1 also shows that the financial stability of the BRICT countries, excluding China, was negatively affected by the global economic crisis that occurred between 2008 and 2009 (See Figure 1).

Despite the high growth potential in the developing countries, they have been vulnerable to political risk for various reasons. From a policy-making perspective, it will be beneficial to examine how financial stability and economic uncertainty are linked with political risk. The BRICT countries, in that respect, represent a prototype group in which historically political stability has led to economic development. Therefore, our research specifically selects the BRICT countries for empirical investigation.

Figure 1

Financial Risk Index



Source: PRS Group

The concept of financial stability in the literature is relatively new. In the early 1990's, the Bank of England used the term "financial stability" to represent "those of its objectives which were not to do with price stability or with the efficient functioning of the financial system" (Allen and Wood, 2006, p.152). The concept of the "Financial stress index" was developed by Illing and Liu (2003) using a market-based dataset. The Schweizerische Nationalbank (2006) constructed the "stress index" for the Swiss banking system using market and balance sheet data simultaneously. A more complex index consisting of interest rates, effective exchange rate, real estate prices, stock prices, solvency of financial institutions and volatility of financial institutions' stock index was formed by Van den End (2006) to measure the financial stability conditions of banks. Allen and Wood (2006) mentioned that although the Bank of England presented a definition of financial stability, there is globally accepted definition for the concept. The phrase 'financial stability' remains vague and difficult to describe. It is well known that identification of the possible effects of economic and political factors on financial stability is significantly important for policymakers around the world. This is because it will facilitate the selection of appropriate strategies for reducing financial instability.

It is widely acknowledged that political risk is harmful for the financial and economic stability in a country. Despite its potential impacts on financial stability, political risk has not received sufficient quantitative focus from policymakers and academia in the past, predominantly due to the lack of data. However, there have been increasing methodological efforts to construct robust data sets representing political risk. Detailed indices representing certain risk sources have been measured and published by the Political Risk Rating (PRS) Group[4]. The PRS maintains the International Country Risk Guide (ICRG) rating comprising 22 variables in three subcategories of risk: political risk index, financial risk index, and economic risk index, with separate indices created for each of the subcategories. In this paper, we use the financial stability, political risk and economic stability indices produced by the PRS, which will be introduced in greater detail in the data section.

A potential problem when working with political risk involves establishing suitable quantitative modelling to analyse the data. In general, due to time limitations and the need to examine a range of countries over a period of time, panel data is applied for empirical analysis. However, classical panel data analysis may generate misleading results as it does not have a dynamic structure. We address this issue in our paper by designing a dynamic CCEGM model, which adds a dynamic nature to the panel data analysis. Our paper contributes to the literature in three ways, as shown below.

Firstly, it provides a comparative review for the effects of political and economic factors on financial stability for the main emerging markets group, referred to as the BRICT countries. The empirical tests include data sets from 1993/Q1 and 2015/Q2, during which fundamental structural economic and political changes were observed in those economies, which provide the academic opportunity to analyse their impacts on financial stability in the emerging markets. The empirical findings show that financial stability is impacted by political risk and economic stability. Secondly, in the present study, we apply a dynamic CCEGM, which allows us to analyse the panel data with unit root and slope heterogeneity, as explained in detail in the methodology section. Finally, our model produces results for each country in the panel group, which allows us to discuss the empirical results on an individual country basis. In this sense, it is a successful implementation of a dynamic panel data model, which not only produces empirical results for the panel data group, but also for each country within that group.

The paper is organized as follows. In the next section, we present the recent literature on the quantification of financial stability, and its relationship with political and economic stability. The third section explains the time series data representing political risk, financial stability and economic stability and how they are generated. We also provide descriptive

[4] *https://www.prsgroup.com/wp-content/uploads/2012/11/icrgmethodology.pdf*

characteristics of the indices in that section. In the fourth section, we firstly perform empirical analysis, namely unit root tests, slope heterogeneity, and dynamic CCEGM. This section is followed by a discussion of the policy implications of the results for the BRICT economies. The paper ends with a conclusion including certain suggestions for future academic research on the impact of political and economic stability on financial stability.

2. Literature Review

In this study, we propose to answer the following question: Do political and/or economic stability drive financial stability in the BRICT countries? The main weakness of the traditional Keynesian macroeconomic theory appears in situations where economic instability erupts due to the complexity of the financial system. Among the earliest economists, Minsky (1957) aimed to explain the "financial instability hypothesis" while investigating the link between the financial sector and the real sector (Minsky and Kaufman, 2008). Keen (2000) underlined that Minsky (1957) only used the traditional linear model to explain the "financial instability hypothesis" and he argued that the model is not effective or successful. Keen (1995) advanced the traditional Minsky's financial instability hypothesis; however, Bernanke, Gertler and Gilchrist (1999) criticized Keen`s model for avoiding a micro-foundation to permit consideration of individual optimizing behaviour. Therefore, there is a gap in the literature in terms of the financial instability hypothesis.

Until now, numerous studies have been conducted by scholars, including Goldsmith (1969), McKinnon (1973), King and Levine (1993), Rajan and Zingales (1998), and Levine, Loayza, and Beck (2000), who have found supporting evidence for the finance-led growth hypothesis pioneered by Schumpeter (1912). More recently, the study of Cournède and Denk (2015) revealed that financial development in the OECD countries fosters economic development in the long run. Creel et al. (2015), for instance, empirically discussed the linkage between economic performance and financial stability in the European Union. By using panel GMM with instrumental variables, they tested how different measures of financial instability impact economic performance and found that financial instability has a negative effect on economic growth. However, Rousseau and Wachtel (2002) and Demetriades and Law (2006) surprisingly rejected the finance-based growth hypothesis and concluded that a better financial system does not accelerate economic development in a country. The existing literature includes several works, such as Zang and Kim (2007), Odhiambo (2008), Chakraborty (2008), Colombage (2009), and Kirikkaleli (2016) that have explored the growth-led finance hypothesis over the years. Zang and Kim (2007) aimed to check the validity of the growth-led finance hypothesis for the East Asian economies. They found that a unidirectional causality runs from economic growth to financial development.

Developing economies are attractive for financial investments. The ideal investment environment for growth in financial investments requires steady growth but it is important not to ignore the effects of any regional political instability on the value of the investments. Nevertheless, when both productivity and policymaking are impacted by instability, this affects capital growth. Political instability shortens the horizon for policy making, which leads to short-term macroeconomic policies. Frequent switches of policy, particularly in relation to economics, can lead to volatility in the market. In line with this perspective, political vulnerability is likely to deteriorate a country's financial stability. Hibbs (1986), Brown, Harlow, and Tinic (1988), Cutler, Poterba, and Summers (1989), Pantzalis, Stangeland, and Turtle (2000), Li and Born (2006), Bialkowski, Gottschalk, and Wisniewski (2008), Julio and Yook (2012), and Smales (2015) are some of the studies that have focused on exploring the effect of political instability on financial systems. Bialkowski, Gottschalk, and Wisniewski (2008) focused on the effects of elections on the stock markets in twenty-seven OECD countries. They concluded that stock market return variance doubles during the week of an election. They simply underlined that political instability or uncertainty is harmful to a country's financial system and stability. Political risk might also lead to economic uncertainty via its adverse impacts on production. In a recent study, Ashraf et al. (2017) examined the effects of political strikes and labour unrest on production in 33 large ready-made garment factories in Bangladesh. They found that strikes lasting five days or more had some negative effects on factories, and production fell by around 10 percent.

Political risk and its linkage between economic stability and financial stability in emerging economies has recently become a popular topic in political economy literature. The increasing trend in political risk mainly in developing economies including the BRIC and Turkey, on which our research focuses, has motivated researchers to conduct empirical studies to make econometrical contributions to the subject. Although a large body of literature has associated political risk with uncertainty, we are not aware of studies that have empirically investigated the effect of political and economic stability on financial stability in the BRICT countries. In other words, it remains unclear whether and to what extent economic and political stabilities have affected financial stability in the BRICT countries.

3. Data and Methodology

3.a. Data

The empirical tests are performed by using time series data of political risk index, financial risk index and economic risk index provided by the PRS Group according to the International Country Risk Guide (ICRG) rating. The rating includes 22 variables under three subcategories of risk: political, financial, and economic.

The political risk rating contains 12 weighted variables covering both political and social attributes constructed by expert judgement, casual assumptions and weights. The aim of the political risk rating is to provide a means of assessing the political stability of a country. This is done by assigning risk points to a pre-set group of factors, termed political risk components. The following risk components and weights are used to produce the political risk rating: Government stability, socioeconomic conditions, investment profile, internal conflict, external conflict (12 points each), corruption, military in politics, religious tensions, law and order, ethnic tensions, democratic accountability (6 points each) and bureaucracy quality (4 points), which amounts to a total of 100 points.

The purpose of the financial risk rating is to provide a means of assessing a country's ability to pay its debts. This requires a system of measuring a country's ability to finance its official, commercial, and trade debt obligations. Similar to political risk, the financial stability index is related to credibility and trust in a country but has an increased financial focus. This is done by assigning risk points to a pre-set group of factors, termed financial risk components. They include foreign debt as a percentage of GDP, foreign debt service as a percentage of exports of goods and services, current account as a percentage of exports of goods and services, net international liquidity as months of import cover and exchange rate stability. The common focus of the sub-components is the credibility and ability of debt payback.

The function of the economic risk rating is to provide a means of assessing a country's current economic strengths and weaknesses. The index includes the following components: GDP per head, real GDP growth, annual inflation rate, budget balance as a percentage of GDP, and current account as a percentage of GDP. The economic risk components like financial stability index are, in contrast to the political risk index, based on numerical facts and performance, and do not contain any assessment or expert judgement. Further details of the index components and calculation methodology can be found in the PRS Group manual.

Our panel data covers the indices of political risk, economic risk and financial risk for Brazil, Russia, India, China and Turkey based on quarterly observations for each index from 1993/Q1 to 2015/Q2. In this study, we used the financial risk index as a proxy for financial stability in the BRICT countries, while the political and economic risks indexes were used as proxies for political and economic stability, respectively. The descriptive statistics for each index are represented in Table 1.

Table 1

Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Financial Stability (FS)	450	37.680	6.670	23.200	48.500
Economic Stability (ES)	450	32.499	7.539	10.000	45.500
Political Stability (PS)	450	62.305	5.409	42.700	76.000

To investigate the effects of economic stability and political risk on financial stability for the BRICT countries, we use the methodology denoted in Equation (1):

$$FS_{it} = \lambda_i d_t + \alpha_{1i} ES_{it} + \alpha_{1i} PS_{it} + u_{it} \quad (1)$$

$$u_{it} = \theta_i f_t + \varepsilon_{it}\ ,\ i=1,2,...,N \text{ and } t=1,2,...T$$

where FS, ES and PS denote financial, economic and political stability, respectively, d_t and f_t represent observed and unobserved common effects, and ε_{it} denotes the error term.

3.b. Methodology

Cross-sectional dependence is an important problem for panel data econometrics. If one does not consider cross-sectional dependence, the errors are assumed to be cross-sectionally independent and slopes are assumed to be homogeneous. Several factors cause cross-sectional dependence in the errors including omitted common effects, interactions within socioeconomic networks and spatial effects (Chudik and Pesaran, 2013). If cross-sectional dependence is not taken into account, problems could emerge in the results. First, conventional unit root tests have important size distortions if there are cross-sectionally dependent errors (O'Connell, 1998). Second, if we omit cross-sectional dependence, the utilisation of fixed or random effects methodologies will likely create inconsistent and biased estimators (Sarafidis and Robertson, 2009).

For this reason, in the empirical modelling, cross-sectional dependence is firstly used to check the properties of the errors. When the cross-sectional dimension is greater than the time dimension in the panel (N>T), the CD test proposed by Pesaran (2004) is suitable. However, as in our case, if the cross-sectional dimension is smaller than the time dimension in the panel (N<T), the Bias Adjusted LM test proposed by Pesaran et al. (2008) solves the inconsistency issue. In this paper, we employ the Bias Adjusted LM test proposed by Pesaran et al. (2008) in order to check the cross-sectional dependence properties of the errors.

The bias-adjusted version of the CD test is:

$$LM^* = \sqrt{\frac{2T}{N(N-1)}}\left(\sum_{i=1}^{N-1}\sum_{j=i+1}^{N}\hat{\rho}_{ij}\right)\frac{(T-k)\hat{\rho}_{ij}^{\,2}-E(T-k)\hat{\rho}_{ij}^{\,2}}{Var(T-k)\hat{\rho}_{ij}^{\,2}} \qquad (2)$$

where $\hat{\rho}_{ij}$ is the sample estimate of the pairwise correlation of the residuals obtained by OLS (Hernández Salmerón and Romero-Ávila, 2015).

After determining cross-sectional dependence in the data, we use the CIPS (Pesaran, 2007) panel unit root test, which is robust to cross-sectional dependency. The CIPS test employs the following ADF regression to compute the cross-sectionally augmented ADF Statistic (CADF).

$$\Delta y_{i,t} = a_i + b_i y_{i,t-1} + c_i \bar{y}_{t-1} + d_i \Delta\bar{y}_t + \varepsilon_{it} \qquad (3)$$

where $\bar{y}_t = \frac{1}{N}\sum_{i=1}^{N} y_{i,t}$, $\Delta\bar{y}_t = \frac{1}{N}\sum_{i=1}^{N}\Delta y_{i,t}$ and ε_{it} is the error term. Then, CIPS statistics is obtained as shown in Equation (4) by employing the CADF statistics calculated above.

$$CIPS = \frac{1}{N}\sum_{i=1}^{N} CADF_i \qquad (4)$$

After determining that all the variables are stationary at level, which means I(0), we do not check for co-integration between the variables.

Then, we implement Pesaran and Yamagata's (2008) slope heterogeneity test. Assuming slope homogeneity and using pooling of individual groups allows only the intercepts to differ across the groups and one may employ fixed effects, random effects and instrumental variable estimators. However, if the homogeneity assumption in the slope is not valid, traditional estimators could be biased. In most panels with large N and T, the slope is heterogeneous (Pesaran and Smith, 1995; Im et al., 2003). In order to test for slope heterogeneity, we use the slope heterogeneity test proposed by Pesaran and Yamagata (2008), which also takes cross-sectional dependence into account. The test introduces a rescaled version of the Swamy Test (Swamy, 1970) and has superior properties for both size and power over a variety of specifications of N and T (Juhl and Lugovskyy, 2014).

After finding both cross-sectional dependency and slope heterogeneity, we employ the dynamic common correlated effects mean group estimator (dynamic CCEGM) model proposed by Pesaran and Chudik (2015), which is robust to both slope heterogeneity and cross-sectional dependence. The CCEMG estimator was first proposed by Pesaran (2006) and subsequently updated by Kapetanios et al. (2011). The dynamic CCEMG estimator adds the lagged values of the dependent variable and the lags of cross sectional means as explanatory variables in the model. The CCEMG estimator is also superior in cases of structural breaks in addition to cross-sectional dependence and slope heterogeneity. The CCEMG estimator used in this paper is presented in Equation 5.

$$y_{it} = \alpha_{0i} y_{it-1} + \alpha_{1i} + \beta_i x_{it} + \sum_{j=1}^{n}\delta_i\,\bar{y}_{it-j} + \sum_{j=1}^{n}\theta_i\,\bar{x}_{it-j} + \varphi_i f_t + \varepsilon_{it} \qquad (5)$$

where y_{it} is the dependent variable, α_{1i} is the group fixed effects capturing time-invariant heterogeneity across groups, x_{it} is the vector of regressors, $\bar{x}_{it-i}$ and $\bar{y}_{it-1}$ are the lag values of cross-sectional averages, β_i represents the country-specific slope on the observable regressor, f_t is the unobserved common factor with heterogeneous factor loadings ϕ_i , and ε_{it} denotes the error term.

Equation (5) is estimated by employing OLS for each cross section and to take into account heteroskedasticity and autocorrelation, Newey-West (1987) estimators are employed. The mean group estimator for the CCE is derived by taking the average of each coefficient over each individual regression, as shown in Equation (6)

$$CCEMG = N^{-1} \sum_{i=1}^{N} \hat{\beta}_i \tag{6}$$

where $\hat{\beta}_i$ is the estimates of the coefficients in Equation (6).

4. Empirical Results and Policy Implications

Firstly, we investigate the cross-sectional dependence properties of the variables by employing the Bias Adjusted LM tests. Table 2 shows the results of the Bias Adjusted LM tests. The null hypothesis indicates no cross-sectional dependence. As the null hypothesis is rejected, this indicates that there is cross-sectional dependence and we should therefore employ methods that are robust to cross-sectional dependence.

Table 2

Cross Sectional Dependence Results

	Value
Bias Adjusted LM Test	206.7*

*Note: * indicates %1 significance level. Null hypothesis shows no cross sectional dependence.*

After finding the existence of cross-sectional dependence, we check the stationarity properties of the variables by employing the CIPS test proposed by Pesaran (2007), which takes into account cross-sectional dependence. The results of the CIPS tests are presented in Table 3.

Table 3

CIPS Unit Root Test Results

	Level	
	Constant	**Constant + Trend**
FS	-2.207**	-2.806**
ES	-3.230*	-3.411*
PS	-2.948*	-3.406

*Note: *and ** indicates %1 and 5 significance level respectively. Null hypothesis for CIPS test indicates unit root.*

According to Table 3, the null hypothesis of unit root is rejected for all variables, which indicates that all variables are stationary in their level forms. As all variables are I(0), we need to investigate slope heterogeneity. In order to test for slope heterogeneity, the slope heterogeneity test proposed by Pesaran and Yamagata (2008) is employed. Table 4 reports the slope heterogeneity test results.

Table 4

Slope Heterogeneity Test Results

	Value
$\boldsymbol{Swamy\ \hat{S}}$	168.347*
$\boldsymbol{\tilde{\Delta}}$	38.816*
$\boldsymbol{\tilde{\Delta}_{adj}}$	39.698*
$\boldsymbol{\hat{\Delta}}$	35.407*
$\boldsymbol{\hat{\Delta}_{adj}}$	0.406

*Note: *indicates %1 significance level. Null hypothesis slope homogeneity.*

As shown in the Table 4, only the $\widehat{\Delta}_{adj}$ test statistic is less than the critical value and the other four test statistics indicate rejection of the null hypothesis of slope homogeneity. Thus, we conclude that the slope is heterogeneous and employ an estimator that allows for slope heterogeneity. The findings indicate both cross-sectional dependence and slope heterogeneity. For this reason, we employ the Dynamic CCEGM model proposed by Pesaran and Chudik (2015), which is robust to both slope heterogeneity and cross-sectional dependence. The results of the dynamic CCEMG model are presented in Table 5, which includes the results for both the whole panel and the five countries individually.

Table 5

Dynamic CCEMG Estimator Results

(Dependent Variable: FS)						
	Panel	Brazil	China	India	Russia	Turkey
FS (-1)	0.657*	0.825*	0.601*	0.737*	0.507*	0.612*
ES	0.228*	0.146	0.309*	0.253*	0.314*	0.119**
PS	0.034**	0.014	-0.025	0.061***	0.040	0.080***
Constant	-0.219	-5.894	2.678	-1.358	-3.627	7.101

*Note: *, ** and *** denotes %1 ,%5 and %10 significance level*

According to Table 5, the lag variable of the FS variable is statistically significant for the whole panel and all countries individually. Also, the effect of economic stability on financial stability is positive and statistically significant for both the whole panel and all 5 individual countries except Brazil. Based on our findings, the policymakers in the BRICT countries should increase the standard of living and minimize both inflation and the current account deficit in order to minimize financial instability. This result also supports the growth-led finance hypothesis and our findings are in line with the findings of Zang and Kim (2007), Odhiambo (2008), Chakraborty (2008), Colombage (2009) within the stability framework. As expected, the effect of political stability on financial stability is statistically significant at the 10% level of significance for the panel of India and Turkey. For Brazil and Russia, the coefficient is positive as expected but not statistically significant. The coefficient is found to be negative for China but not statistically significant. However, for the panel model, the outcome clearly reveals that political stability significantly and positively contributes to financial stability in the BRICT countries. Thus, to minimize financial vulnerability, the attention of policymakers in these countries should be focused on political stability, including a more stable government, better social-economic conditions, less internal and external conflicts, and an efficiently functioning bureaucratic system.

For a robustness check, we estimate the long-term coefficients for the effects of the economic and political stability variables on financial stability for the panel by employing both CCEGM and Dynamic CCEGM models. Table 6 presents the robustness check results. According to the results displayed in in the table, both the CCEGM and dynamic CCEGM models indicate similar results. The effects of economic stability on financial stability are positive and statistically significant at the 1% level of significance for both dynamic CCEGM and CCEGM models. The coefficients are calculated to be between 0.546-0.665. The effects of political stability on financial stability are positive and statistically significant at the 10% level of significance for both dynamic CCEGM and CCEGM models. The coefficients are found to be between 0.069-0.099. The results show that economic stability has a more important impact on financial stability in comparison to political stability.

Table 6

Robustness Check

	Dynamic CCEGM	CCEGM
ES	0.665*	0.546*
PS	0.099***	0.069***

*Note: *, ** and *** denotes %1, 5% and %10 significance levels, respectively.*

5. Conclusion

In this study, we aimed to explore the effect of political and economic stability on financial stability in the BRICT countries for the period between 1993/Q1 and 2015/Q2. To the best of our knowledge, no previous researches have comprehensively investigated this effect for these countries. Therefore, the study aims to fill this gap in the literature and is likely to open a new debate about the financial stability concept. To reach our aim, we used newly developed techniques, namely cross-sectional dependence, CIPS unit root, slope heterogeneity, CCEMG and, dynamic CCEMG tests. Our results reveal that financial stability is positively affected by economic and political stability at the same time, but the effect of economic stability on financial stability in the BRICT countries is significantly greater than the effect of political stability. Therefore, to minimize financial instability in the BRICT countries, governments should concentrate on controlling economic indicators, such as the standard of living, inflation and current account deficit. This finding also supports the growth-led finance hypothesis within the stability framework. Our findings also reveal that economic stability should be supported by political stability and political reforms, which are necessary pre-requisites for a sustainable high-level of financial stability in emerging economies. Despite the strong and consistent empirical findings generated by the newly-developed econometric techniques, we suggest that similar models should be used to investigate the effect of political and economic stability on financial stability in different countries and regions.

References

Allen, W.A. and Wood, G., 2006. Defining and achieving financial stability. *Journal of Financial Stability*, 2(2), pp.152-172.

Ashraf, A., Macchiavello, R., Rabbani, A. and Woodruff, C., 2015. *The effect of political and labour unrest on productivity*. International Growth Center Working Paper.

Bernanke, B.S., Gertler, M. and Gilchrist, S., 1999. The financial accelerator in a quantitative business cycle framework. *Handbook of macroeconomics*, 1, pp. 341-1393.

Brown, K.C., Harlow, W.V. and Tinic, S.M., 1988. Risk aversion, uncertain information, and market efficiency. *Journal of Financial Economics*, 22(2), pp. 355-385.

Chakraborty, I., 2008. Does financial development cause economic growth? The case of India. *South Asia economic journal*, 9(1), pp. 109-139.

Chudik, A. and Pesaran, M.H., 2013. Large panel data models with cross-sectional dependence: a survey.

Chudik, A. and Pesaran, M.H., 2015. Common correlated effects estimation of heterogeneous dynamic panel data models with weakly exogenous regressors. *Journal of Econometrics*, 188(2), pp. 393-420.

Colombage, S.R., 2009. Financial markets and economic performances: empirical evidence from five industrialized economies. *Research in International Business and Finance*, pp. 23(3), 339-348.

Cournède, B. and Denk, O., 2015. Finance and economic growth in OECD and G20 countries.

Creel, J., Hubert, P. and Labondance, F., 2015. Financial stability and economic performance. *Economic Modelling*, *48*, pp.25-40.

Cutler, D.M., Poterba, J.M. and Summers, L.H., 1989. What moves stock prices?. The Journal of Portfolio Management, 15(3), pp 4-12.

Demetriades, P. and Hook Law, S., 2006. Finance, institutions and economic development. *International journal of finance & economics*, pp. 11(3), 245-260.

Frank, W.P. and Frank, E.C., 2010. International business challenge: can the BRIC countries take world economic leadership away from the traditional leadership in the near future. *International Journal of Arts and Sciences*, 3(13), pp. 46-54.

Goldsmith, R. W. 1969. Financial Structure and Development. New Haven, CT: Yale University Press

Hibbs, D.A., 1986. Political parties and macroeconomic policies and outcomes in the United States. *The American Economic Review*, 76(2), pp. 66-70.

Illing, M. and Liu, Y., 2003. An index of financial stress for Canada (pp. 2003-14). Ottawa: Bank of Canada.

Im, K.S., Pesaran, M.H. and Shin, Y., 2003. Testing for unit roots in heterogeneous panels. *Journal of econometrics*, 115(1), pp. 53-74.

Kapetanios, G., Pesaran, M.H. and Yamagata, T., 2011. Panels with non-stationary multifactor error structures. *Journal of Econometrics*, 160(2), pp. 326-348.

Keen, S., 1995. Finance and economic breakdown: modeling Minsky's "financial instability hypothesis". *Journal of Post Keynesian Economics*, 17(4), pp. 607-635.

Keen, S., 2000, January. The nonlinear economics of debt deflation. In Commerce, complexity, and evolution: Topics in economics, finance, marketing, and management. Proceedings of the Twelfth International Symposium in Economic Theory and Econometrics (pp. 83-110).

King, R. G. and R. Levine. 1993. "Finance and Growth: Schumpeter Might Be Right." *Quarterly Journal of Economics* 108 (3), pp. 717–37.

Kirikkaleli, D., 2016. Interlinkage between economic, financial, and political risks in the Balkan countries: evidence from a panel cointegration. *Eastern European Economics*, 54(3), pp. 208-227.

Levine, R., N. Loayza, and T. Beck. 2000. "Financial Intermediation and Growth: Causality and Causes." *Journal of Monetary Economics,* 46 (1), pp. 31–77.

McKinnon, R. I. 1973. Money and Capital in Economic Development. Washington, DC: Brookings Institution

Minsky, H.P. and Kaufman, H., 2008. *Stabilizing an unstable economy* (1st Ed.). New York: McGraw-Hill.

Minsky, H.P., 1957. Monetary systems and accelerator models. *The American Economic Review*, 47(6), pp. 860-883.

Nationalbank, O., 2001. *Financial stability report.* Oesterreichische Nationalbank.

Newey, W.K. and West, K.D., 1987. Hypothesis testing with efficient method of moments estimation. *International Economic Review*, 777-787.

O'Connell, P.G., 1998. The overvaluation of purchasing power parity. *Journal of international economics*, 44(1), pp. 1-19.

Odhiambo, N.M., 2008. Financial depth, savings and economic growth in Kenya: A dynamic causal linkage. *Economic Modelling*, 25(4), pp. 704-713.

Pesaran, M.H. and Smith, R., 1995. Estimating long-run relationships from dynamic heterogeneous panels. *Journal of econometrics*, 68(1), pp. 79-113.

Pesaran, M.H. and Yamagata, T., 2008. Testing slope homogeneity in large panels. *Journal of Econometrics*, 142(1), pp. 50-93.

Pesaran, M.H., 2004. General diagnostic tests for cross section dependence in panels.

Pesaran, M.H., 2006. Estimation and inference in large heterogeneous panels with a multifactor error structure. *Econometrica*, 74(4), pp. 967-1012.

Pesaran, M.H., 2007. A simple panel unit root test in the presence of cross-section dependence. *Journal of Applied Econometrics*, 22(2), pp. 265-312.

Pesaran, M.H., Ullah, A. and Yamagata, T., 2008. A bias-adjusted LM test of error cross-section independence. The Econometrics Journal, 11(1), pp.105-127.

Rajan, R. G. and L. Zingales. 1998. Financial Dependence and Growth. *American Economic Review* 88 (3), pp. 559–86.

Romero-Ávila, D. and Salmerón, M.H., 2014. Convergence in Output and Its Sources Among Industrialised Countries: A Cross-Country Time-Series Perspective.

Rousseau, P.L. and Wachtel, P., 2002. Inflation thresholds and the finance–growth nexus. *Journal of international money and finance*, 21(6), pp. 777-793.

Sarafidis, V. and Robertson, D., 2009. On the impact of error cross-sectional dependence in short dynamic panel estimation. *The Econometrics Journal*, 12(1),62-81.

Schumpeter, J.A., 1912. Theorie der Wirtschaftlichen Entwicklung. Leipzig: Dunker & Humblot; The Theory of Economic Development, trans R. Opie. 1934.

Sözen, A. and Karık, F., 2017. Comparison of Turkey's renewable energy performance with OECD and BRICS countries by multiple criteria. *Energy Sources, Part B: Economics, Planning, and Policy*, *12*(5), pp.487-494.

Swamy, P.A., 1970. Efficient inference in a random coefficient regression model. Econometrica: *Journal of the Econometric Society*, pp.311-323.

van den End, J.W., 2006. Indicator and boundaries of financial stability (No. 097). Netherlands Central Bank, Research Department.

Zang, H. and Kim, Y.C., 2007. Does financial development precede growth? Robinson and Lucas might be right. *Applied Economics Letters*, 14(1), pp. 15-19.