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Financial Development and Business Cycles Volatility: Empirical Evidence from Newly Industrialized Countries

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ABSTRACT

The paper examines firstly a theoretical framework of the relationship between financial development and economic cycles' volatility; and secondly it analyses empirically this relationship in ten newly industrialized countries by estimating a dynamic panel over the period 1988-2013. It tries to check the specific effect of some crucial macroeconomic financial variables on the stability of economic cycles as a decisive component of economic growth. The empirical results suggest that there is not enough evidence concerning the long-run relationship between financial development and its contribution in smoothing economic cycles or even avoiding economic downturns episodes. By contrast, according to the co-integration and unit root tests results in the in-sample countries, a long-run relationship can exists for a few selected countries. Furthermore, it can be assumed that because of the cross-sectional dependence, the hypothesis of no co-integration between financial development and economic cycles' volatility is rejected for the whole panel, although it must be accepted for some countries.

Introduction

The literature on the relationship between financial development and economic cycles is widely inspired from the theoretical and empirical works on economic growth as long as economic cycles are critical component in economic growth. Historically, there is a broad consensus that financial development and some macroeconomic conditions together can foster economic growth and by the way reduce the volatility in economic cycles (Levine, 2005). For instance, Levine (2005) suggests that in an efficient financial system, the exchange of goods and services is much easier through the provision of payment services, mobilizing and pooling savings from a large number of investors, monitoring investment, and diversifying, increasing liquidity and reducing risk. Each of these examples can have a significant impact on saving and investment decisions and hence economic growth.

With an increasing number of intensives financial crisis, the stability of financial systems over the world is deeply threatened over the two past decades. Because a weak financial system negatively impacts the real economy, the economic system stability has become a major concern to policymakers. Against this background, developing comprehensive and relevant indexes used in monitoring and forecasting the economic activity is challenge for policymakers in order to minimize the likelihood of a financial crises and economic downturns.

Seen in this light, many researchers and policymakers tried to develop some kinds of Early Warning Systems (EWS) to monitor the main macroeconomic aggregate and microeconomic indicators in order to determine the future state of vulnerability of an economic system. Therefore, this paper proposes a composite single index for measuring financial stability and development and how it can impact economic cycle's volatility or economic downturns. Following the Albulescu (2010) approach, the proposed index is a composed quantitative measure which can be used to analyze the stability and the development of a financial system.

The remainder of the paper is organized as follows. Section two covers a brief literature review. Section three provides details on the methodology employed in calculating the financial development index and assessing economic cycle's volatility or downturns with a parallel presentation of the results. The concluding remarks and some policy implications are presented in section four.

A Brief Literature Review

Gurley and Shaw (1960), and Goldsmith (1969) are considered as precursors in the literature focused on the relation between financial development and economic growth. Overall, in the works that follows, the prevailing idea is that an efficient financial system fosters the economic development. Nevertheless, this relationship is also qualified, in other comparative studies, as a paradox as long as a wide range of empirical studies dealing with financial development and economic growth give some conflicting results.

For example, unlike the works of Levine et al. (2000), Arestis et al. (2001), Hondroyiannis et al. (2005), Van Nieuwerburgh et al. (2006) and Huang et Lin (2009), highlighting a positive relationship correlation between financial development and economic growth, the study of Andersen and Tarp (2003) found that the positive relationship can become negative when the sample is limited to developing countries. Moreover, the study conclude that the positive impact is not sufficiently sustained by the empirical works. On their part, in a sample of Latin American countries, Gregorio and Guidotti (1992) found a negative and significant impact of the financial development on the growth. Luintel and Khan (1999) study confirmed a negative relationship between financial development and economic growth in among ten of the in-sample countries. Another study of Ram (1999) argue that there is a positive significant impact of financial development on economic growth only in 9 countries, a negative significant impact in 56 countries, and a non- significant impact in 30 countries in a whole sample of 95 developed and developing

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countries in the world.

Another important result in the work of Fernandez and Galetovic (1994), who used the same panel data structure as King and Levine (1993), is that just the fact of dividing the sample into two subsamples, OECD countries and others countries, gives that the relationship becomes non-significant for the OECD countries. Favara (2003) examined the impact of financial development on economic growth based on a set of econometric approaches applied on panel data. Between positive and negative, significant and non-significant coefficients, the results were on the whole ambiguous and non-robust.

In summary, some researchers and policymakers justify mainly the paradoxical relationship between financial development and economic growth by the selected in-sample countries, the used econometric tools and the considered time horizon in the study. Other researchers put forward the hypothesis of penetration rate of financial system in the economic activity, the difference between developed and developing countries, the degree of economic integration, etc. Furthermore, other ambiguous results are attributed to the irrelevant measures of financial development.

Methodology And Results

International financial markets were at the heart of the worldwide financial crisis that emerged in late 2007 and reaching a climax between August 2008 and February 2009 that greatly affected the rest of the world. This section focuses on the extent to which the financial development affect the economic growth in ten newly industrialized countries, thereafter their business cycles volatility. Hence, this work is interesting in two basic questions: Firstly, how the financial development affect the volatility in economic cycles through growth? Secondly, given the value of the composite financial development index, what determines the tradeoff or choice between a short-run and a long-run significant impact on volatility or downturns of economic cycles?

Economic Cycle Volatility and Downturns

Economic cycles can be defined as the periodic irregular ups and downs movements in economic activity, generally measured by the fluctuations in real GDP and - in some cases - other macroeconomic variables. According to the definition of the National Bureau of Economic Research (NBER)[1], an economic cycle is identified as a sequence of four phases. Contraction, expressed as a slowdown in the pace of economic activity. The lower turning point of an economic cycle, where a contraction turns into an expansion. Expansion, expressed as a speedup in the pace of economic activity. Finally, Peak, expressed as the upper turning of an economic cycle.

Based on this definition, this paper will focus on the contraction periods of economic cycles since they express both volatility and downturns.

Usually, the used time series data in assessing economic fluctuations is the de-trended real GDP, by introducing filters for cyclical components. That is to say, the time series are decomposed into the sum of a slowly-evolving secular trend and a transitory deviation from it, which is classified as cycle:

$$x_t = \tau_t + \xi_t$$

$$\text{Observed Series} = \text{Permanent Trend} + \text{Cycle}$$

One can rely on many different de-trending methods in order to compute the cyclical component of economic activity and, then, economic cycle volatility measures. The widely used filters are: simple differencing (which approximates the annual GDP growth rate), Hodrick-Prescott (HP) filter, the Baxter-King (BK) filter, Christiano-Fitzgerald (CF) filer and the Butterworth (BU) filter. While minor differences among the results obtained by the last four filters are not difficult to detect, the main characteristics are remarkably similar. Overall, the HP filer is the most used one as long as it allows to introduce a smoothness parameter λ equal to 100. Then, the estimated trend will be secular.

From one hand, economic cycle volatility is measured by the standard deviation of the cyclical component obtained by the filtering methods. Periods with *volatile business cycles are those where the absolute value of the cyclical component is greater than its standard deviation*. From another hand, *periods characterized by an economic downturns are identified as periods where the level of real GDP falls below trend identified using the Hodrick-Prescott filter* (Hodrick and Prescott, 1997).

When GDP data in figure 1 are decomposed, then the GDP components (trend & cycle) are obtained. So the trend component is a much smoothed time series, while the cyclical component contains numerous and strong oscillations that reflect the volatility in economic cycles. Therefore, the cyclical component is usually used to detect periods of economic slowdowns or economic crises.

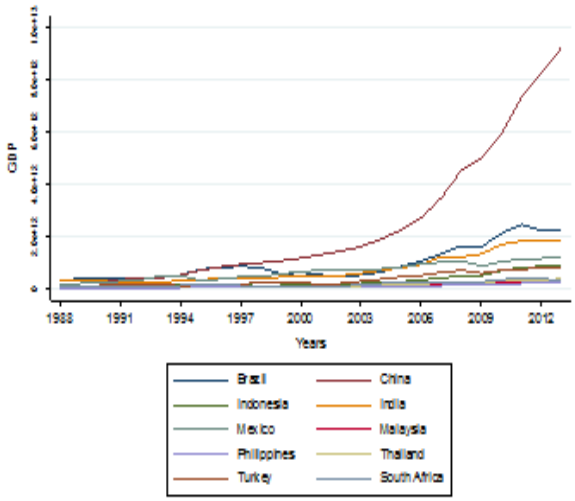

Figure 1. GDP evolution (1988-2013)

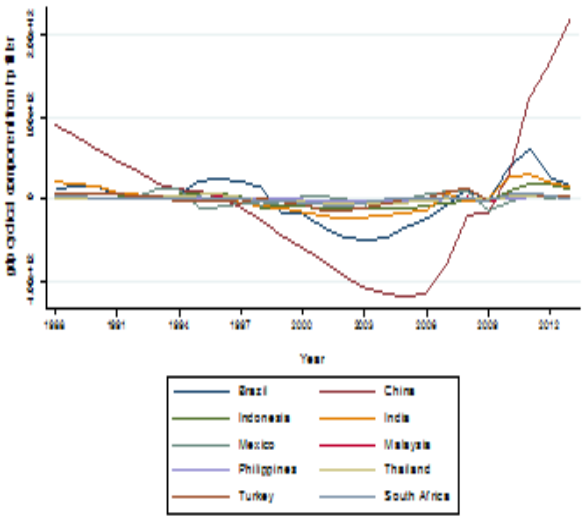

Figure 2A. GDP decomposition: cyclical component (1988-2013)

[1] National Bureau of Economic Research : http://www.nber.org/

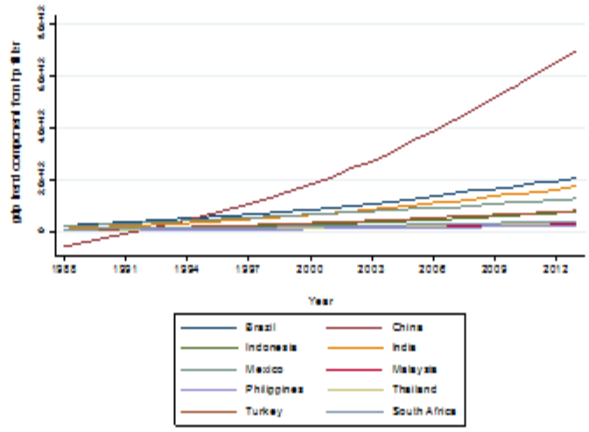

Figure 2B. GDP decomposition: trend component (1988-2013)

Financial development measurement

The existing literature for the measurement of financial development is very diversified and complex. This paper adopt a purely quantitative approach in order to measure it. As mentioned above, the methodology follows the one given by Albulescu (2009). This approach actually measures financial development on the basis of the observed outcomes of the main variables used in assessing the performance of financial and banking sector due to the fact that banks and financial institutions stand as key-sectors within a financial system. The selected indicators are commonly used in financial stability literature. Thereafter, the considered variables are discussed below. Definitions are taken from the World Development Indicators (WDI, 2015)[2].

In order to analyze the financial development level, many studies introduce some key-variables which provide information related to the financial system. Therefore, all the data processed in this paper were extracted from the World Development Indicators and refers to a balanced panel of 10 newly industrialized countries observed from 1988 to 2013.

As it was recommended by King and Levine (1993) and Favara (2003), the ratio liquid liabilities[3] to GDP (M3/GDP) is a reliable indicator of the financial development. This ratio is probably a most correct measure of the banking development in countries where the banking sector is predominant. This variable is denoted (MGDP).

Domestic credit to private sector by banks as a percentage of GDP (DGDP): is the domestic credit to private sector by banks refers to financial resources provided to the private sector by deposit money banks and other financial institutions except central banks, such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable. It is probably a better proxy for financial development since it only accounts for credit granted to the private sector, as opposed to credit issued to government and other non-private institutions. It is considered as a very relevant measure of the savings that financial intermediaries channel to the private sector.

Stocks traded total value as a percentage of GDP (SGDP): stocks traded refers to the total value of shares traded during the period. This indicator complements the market capitalization ratio by showing whether market size is matched by trading.

Stocks traded turnover ratio (STTR): turnover ratio is the total value of shares traded during the period divided by the average market capitalization for the period. Average market capitalization is calculated as the average of the end-of-period values for the current period and the previous period.

Interest rate spread (lending rate minus deposit rate percentage IRS): interest rate spread is the interest rate charged by banks on loans to private sector customers minus the interest rate paid by commercial or similar banks for demand, time, or savings deposits. To these variables, the ratio of foreign direct investment net inflows to GDP, (FDII) is added.

As control variables, three conditioning economic indicators are included to measure macroeconomic stability, namely trade openness (TP) ratio, which is the sum of exports and imports to GDP and the ratio of government expenditure to GDP (GOV).

In this paper, in order to get an aggregated value of the financial development index, the variables are given, in a first step, an equal weighting system. Under this condition, an average of the whole variables is calculated for each period of time *T*, and also for each cross-sectional dimension in the panel, *N*. Hence, the FSDI[4] is calculated as flow:

$$FSDI_{it} = \frac{DGDP + SGDP + STTR + IRS + TP + GOV}{6}$$

In a second step, the index is normalized to allow the limitations of the index values between 0 and 1, where a value of 0 represents the weakest value of an indicator:

$$FSDIn_{it} = \frac{FSDI_{it} - Min(FSDI_i)}{Max(FSDI_i) - Min(FSDI_i)}$$

Where $FSDIn_{it}$ is the normalized index at time *t*, $FSDI_{it}$ is the value of the index at time *t*, Max($FSDI_i$) and Min($FSDI_i$) represent the worst and best values of each indicator respectively.

Econometric framework and results

This section presents the econometric methodology used to assess the relationship between financial development and economic cycles' volatility. It is about to test, in a first step, if panel data contain unit roots or if they are stationary (the residuals in the regression are stationary). Hence, if the residuals are stationary, then the variables can be co-integrated (significant long-run relationship).

Another part of the analysis, is to understand the evolution of the two variables. From one hand, the normalized values FSDI give an idea about the strength of the financial system for each country. From another hand, the decomposition of the GDP time series data of each country into its trend and cyclical components clarifies the extent to which economic cycles are stable or volatile by focusing on the cyclical component.

Financial development and economic cycle's volatility

Table1, figures 3 and 4 give a general idea about episodes with weak financial development index and economic cycles. China is the country which expresses very high of episodes of weak financial system development and also for economic downturns. In the second rank, South Africa, India and Indonesia are characterized by a less stability in financial system and more economic downturns episodes in comparison to volatility. In contrast to China, Thailand is the only country with strong FSDIn and less economic cycles' volatility.

[2] http://data.worldbank.org/data-catalog/world-development-indicators

[3] Including liabilities of banks, central banks and other financial intermediaries.

[4] FSDI is the financial stability and development index. The word "stability" is added because in the majority of the related theoretical and empirical works, financial stability is frequently combined with financial development.

Table 1. Financial development & episodes of volatility and economic downturns (1988-2013)

Country	FSDIn			Economic cycles		
	FSDIn < 0.2	0.2< FSDIn <0.6	FSDIn > 0.6	Volatility	Downturns	Total
Brazil	8	9	9	7	11	18
China	12	9	5	9	13	22
India	8	16	2	12	13	25
Indonesia	8	15	3	9	12	21
Malaysia	7	15	4	10	10	20
Mexico	7	16	3	9	13	22
Philippines	5	16	5	9	11	20
South Africa	9	9	8	7	11	19
Thailand	2	13	11	11	12	23
Turkey	4	10	12	6	11	17

Table 2. Levin-Lin-Chu unit-root test

	GDPc		FSDIn			
			Without Time trend		With Time trend	
Lags average (by AIC) in the ADF	2.70		1.40		0.80	
	Statistic	p-val	Statistic	p-val	Statistic	p-val
Unadjusted t	-7.0093	0.00	-5.9462	0.00	-8.9638	-
Adjusted t*	-6.7285	0.00	-5.7018	0.00	-3.9964	0.00

Table 3. Im-Pesaran-Shin unit-root test

	GDPc		FSDIn			
			Without Time trend		With Time trend	
Lags average (by AIC) in ADF	2.70		1.40		0.80	
	Statistic	p-val	Statistic	p-val	Statistic	p-val
t-bar	-1.7181	0.04	-2.6361	0.00	-3.3352	0.00

Table 4. Hadri LM test

	GDPc		FSDIn			
			Without Time trend		With Time trend	
	Statistic	p-value	Statistic	p-value	Statistic	p-value
z	5.4469	0.00	10.9147	0.00	13.2173	0.00

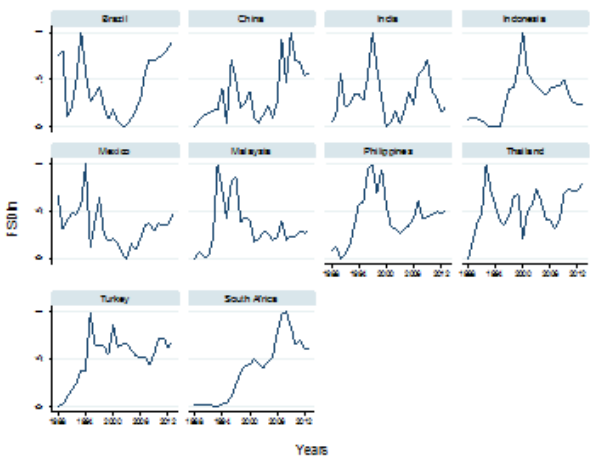

Figure 3. Normalized financial development index (1988-2013)

For each country, two reference lines are added to the graph, which represent the positive and negative bound of the standard deviation of cyclical component variable. All periods in which the upper and lower limits are exceeded represent, therefore, unstable and volatile economic cycles.

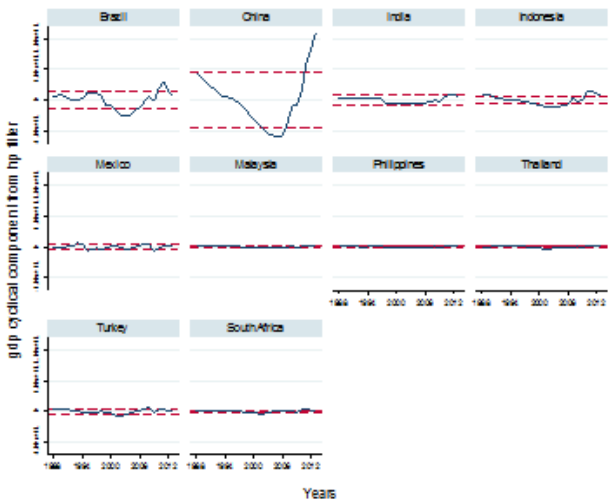

Figure 4. GDP cyclical component evolution (1988-2013)

Financial development and economic cycle's volatility: panel data unit root tests

To detect co-integration between the normalized FSDI and the cyclical component of the GDP data (GDPc), one must first test whether or not these variables contain unit roots.

In order to test if the panel data time series is stationary or not, three unit root test are realized. Because here it is about a panel data, the main question is to confirm or contradict the null

hypothesis that each panel unit is stationary or not, in contrast of the alternative one that all the panel units are stationary or not.

In the existing literature, there is a large number of unit root tests that can be used in order to determine if a time series variable contains unit roots or not. Most of these tests have been adapted to panel data according to their characteristics (number of units, time dimension, cross-sectional dependence, slope homogeneity, etc.). The Levin–Lin–Chu (2002), Harris–Tzavalis (1999), Breitung (2000), Breitung and Das (2005), Im–Pesaran–Shin (2003), and Fisher-type (Choi 2001), and Hadri (2000), all of them have the null hypothesis that all the panels contain a unit root.

Because the balanced dataset used in this paper is characterized by few panel units and a relatively many time periods, three assorted unit root tests are selected which allow also of including fixed effects and time trends in the model during data processing. These tests are Levin–Lin–Chu (2002), Im–Pesaran–Shin (2003), and Hadri (2000) unit roots tests.

Therefore, data on the cyclical component of real GDP (GDPc) and data on the normalized financial development index FSDI of 10 newly industrialized countries for 26 years are analyzed to examine whether the series contains a unit roots or not.

By specifying the lags structure such that the Akaike's information criterion (AIC) for the regression is minimized, unlike the Levin–Lin–Chu (LLC) test (in which the lags structure is common to all panel units), the Im–Pesaran–Shin (IPS) test requests that the number of lags of the series vary across panel units. Hence, tests will fit ADF regressions with 1 to 10 lags and choose the regression for which the AIC is minimized. This process is done for each panel so that different panels may use ADF regressions with different numbers of lags subject to a maximum of 10 lags.

Levin-Lin-Chu unit-root test

The test is: H_0: panels contain unit roots for each I, against H_1: panels are stationary for each i. The results are reported in table 2.

The LLC bias-adjusted test statistic t*= -6.7585, -5.7018 and -3.9964, for GDPc, FSDIn with time trend and FSDIn without time trend, respectively. These values are significantly less than zero ($p < 0.00005$), so the null hypothesis of a unit-root is rejected in favor of the alternative that GDPc, FSDIn are stationary[5].

The unadjusted *t* is a conventional *t* statistic. When the model does not include panel-specific means or trends, this test statistic has a standard normal limiting distribution and its p-value is shown in the output. The unadjusted statistic *t* diverges to negative infinity if trends or panel-specific constants are included, so a p-value is not displayed in those cases (Breitung and Das, 2005).

Because the in-sample economies share some common factors, results are likely affected by cross-sectional dependence. According to O'Connell's (1998) the LLC test exhibits severe size distortions in the presence of cross-sectional dependence. To avoid this unfavorable situation, LLC suggested removing cross-sectional averages from the data to help control for the cross-sectional dependency.

[5] Here it is to mention that the time trend variable could not be included in GDPc as long as the variable of interest is the cyclical component of the GDP data instead of the trend component.

Im-Pesaran-Shin unit-root test

The test is: H_0: all panels contain unit roots, against H_1: some panels are stationary. Results of the test are given in table 3.

Here, because the statistic t-bar is less than even its 1% critical value, the null hypothesis assuming that all series contain a unit root is strongly rejected.

Hadri LM test

The test is: H_0: all panels are stationary in favor of the alternative hypothesis H_1: some panels contain unit roots.

The Hadri (2000) Lagrange Multiplier (LM) test uses panel data to test the null hypothesis that all panels are stationary versus the alternative that at least one panel contains a unit root. The test is designed for cases with large *T* and moderate *N*. With allowing for cross-sectional dependency, results strongly reject the null hypothesis that all panels' series are stationary in favor of the alternative that at least one of them contains a unit root.

Overall, results show an overwhelming evidence against the null hypothesis of a unit root and therefore conclude that both FSDIn and GDPc are stationary. Thereafter, it is possible to proceed to test co-integration between the two variables.

Financial development and economic cycle's volatility: Co-integration analysis

Co-integration technique allows to test for the presence of long-run relationships. The approach is very relevant. However, in spite of accounting both the time-series dimension *T* and the cross-sectional dimension *N*, many studies fail to reject the null hypothesis of no co-integration, even in cases where co-integration is strongly suggested by theory, generally because most of the co-integration tests require that long-run parameters for the variables in their levels are equal to the short-run parameters for the variables in their differences. Many authors like Banerjee et al. (1998) and Kremer et al. (2013) have talked about this drawback which can lead to a significant loss of power of co-integration tests.

This paper tries to overcome this shortcoming by introducing the approach of Westerlund (2007) which develops a modified panel co-integration test based on structural rather than residual dynamics. Therefore, this test do not impose any common-factor restriction like the previous error-correction co-integration tests.

By considering the relationship between the normalized financial development index FSDIn and economic cycles' volatility GDPc, the corresponding error-correction tests can be written as follow:

$$\Delta GDPc_{it} = \delta_i' d_t + \alpha_i GDPc_{i,t-1} + \lambda_i' FSDIn_{i,t-1} + \sum_{j=1}^{p_i} \alpha_{ij} \Delta GDPc_{i,t-j} + \sum_{j=-q_i}^{p_i} \gamma_{ij} \Delta FSDIn_{i,t-j} + \varepsilon_{it}$$

Where $\lambda'_i = -\alpha_i \beta'_i$. The parameter α_i determines the speed at which the system corrects back to the equilibrium relationship ($GDPc_{i,t-1} - \beta'_i FSDIn_{i,t-1}$) after a sudden shock:

- If $\alpha_i < 0$, there is error-correction, which implies that y_{it} and x_{it} are co-integrated;
- If $\alpha_i = 0$, there is no error correction and, thus, no co-integration.

Thus one can state the null hypothesis of no co-integration as: H_0: $\alpha_i = 0$ for all *i*. The alternative hypothesis depends on what is being assumed about the homogeneity of α_i. Thereafter, two tests called *group-mean tests* and *panel tests* must be done (Westerlund, 2007):

Group-mean tests

Group-mean tests do not require the α_is to be equal. Then, H_0 is tested versus H^g_1: $\alpha_i < 0$ for at least one *i*:

$$G_\tau = \frac{1}{N}\sum_{i=1}^{N}\frac{\hat{\alpha}_i}{SE(\hat{\alpha}_i)}, G_\alpha = \frac{1}{N}\sum_{i=1}^{N}\frac{T\hat{\alpha}_i}{\hat{\alpha}_i(1)}$$

Where $SE(\hat{\alpha}_i)$ is the conventional standard error of $\hat{\alpha}_i$. $\hat{\alpha}_i(1) = \frac{\ddot{w}_{ui}}{\hat{w}_{yi}}$, where $\hat{w}_{ui}$and $\hat{w}_{yi}$ are Newey-West (1994) long-run variance estimators besed on $\hat{u}_{it}$ and Δy_{it}, respectively (Westerlund, 2007).

Panel tests

Panel tests, assume that α_i is equal for all *i*. Then, H_0 is tested versus $H^p{}_1$: $\alpha_i < 0$ for all *i*:

$$P_\tau = \frac{\hat{\alpha}}{SE(\hat{\alpha})}, P_\alpha = T\hat{\alpha}$$

In the table below, the results of co-integration are presented. They are based on calculating Westerlund ECM (Error-Correction Model) panel co-integration tests. In order to select the appropriate number on lags and leads, the Akaike's (1974) information criterion (AIC) is used. The Average AIC selected lag length is equal to 2.7, and 1.9 for the selected lead length.

Statistic	Value	Z-value	P-value
Gτ	-0.837	5.982	1.0000
Ga	-1.975	4.717	1.0000
Pτ	5.715	14.439	1.0000
Pa	6.101	7.97	1.0000

Unlike the Ga and Gτ statistics for where the rejection of H_0 should therefore be taken as evidence of co-integration of at least one of the cross-sectional units, the Pa and Pτ test statistics pool information over all the cross-sectional units, where the rejection of H_0 should therefore be taken as evidence of co-integration for the panel as a whole. However, the co-integration results strongly accept the hypothesis that the series are not co-integrated.

According to Westerlund, (2007), the test of cross-sectional dependence is critical because in an economic sense, cross-sectional dependence in the errors terms of the co-integration regression can be explained as an economic integration between groups of countries, which could be the case of some in-sample countries. In such case, there is probably, strong interdependencies between cross-sectional units. Breusch and Pagan (1980) proposed the following Lagrange multiplier (LM) test statistic (which is valid for cases where T > N (Breusch and Pagan, 1980):

$$LM = T\sum_{i=1}^{N-1}\sum_{j=i+1}^{N}\hat{p}_{ij}^2$$

Where $\hat{p}_{ij}$ is the sample estimate of the pairwise correlation of the residuals. By assuming the same short-run dynamics for all series, with a single lag and lead, $p_i = q_i = 1$, the cross-sectional independence gives a value of: Chi^2 (45) = 204.709, Pr = 0.0000.

Because the results of the Breusch and Pagan (1980) test strongly indicate the presence of common factors affecting the cross-sectional units, robust critical values for the test statistics are bootstrapped:

Statistic	Value	Z-value	p-value	robust p-value
Gτ	0.035	9.344	1.0000	1.0000
Ga	-1.329	4.968	1.0000	0.9999
Pτ	7.825	16.585	1.0000	1.0000
Pa	4.007	6.674	1.0000	1.0000

When considering cross-sectional dependencies, the tests still accept the H_0 of no co-integration. The underlying idea is to test for the absence of co-integration by determining whether the individual panel members are error-correcting or not.

At this end of this section, a graphical presentation is developed to understand how countries are placed against others in terms of financial development index and volatility of their economic cycles. It is to mention that the more value of the cyclical component is moving away from 0, the more it reflects a volatility in economic cycles that may eventually lead to instability or even a situation of economic downturn (see table 1).

Moreover, such situations can be more complicated, if the value of the financial development index decrease and approaches 0. As it can be seen, India is the country that is in the worst situation in contrast with Thailand. Other groups of countries more or less homogeneous exist. For example, Turkey and Brazil are two cases of countries characterized by high levels of financial development, but very volatile economic cycles. Malaysia and China are examples of stable economies in which financial development did not play a decisive role. Indonesia and Mexico convey the image of relatively volatile economies without a strong position of the financial sector as a growth leverage. After Thailand, Philippines and South Africa are good examples of newly industrialized countries that take advantage of a situation of enhanced development levels of financial sector leading to an increased economic stability, and therefore to high economic growth levels.

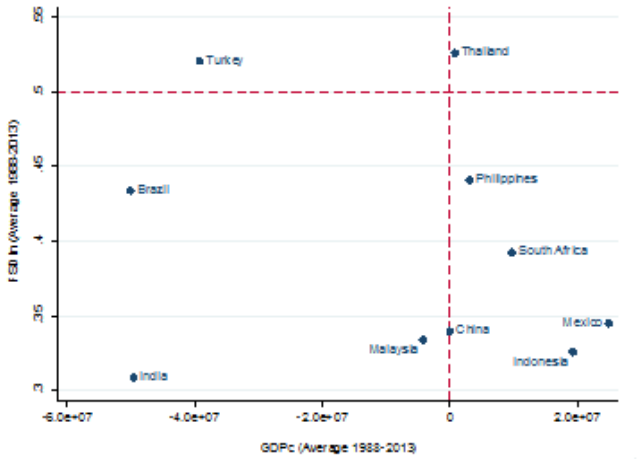

Figure 5. GDP cyclical component vs. financial development index (1988-2013)

Conclusion

This paper reviews some main features of the financial sector in ten newly industrialized countries, investigates the relationship between financial development and economic cycles volatility by estimating a dynamic panel data over the period 1998-2013.

The main results show that the financial development has a non-significant effect on economic cycle's volatility in the selected countries, thus their economies have not benefited from a developed financial sector. This finding may be explained by the financial instability and the high degree of financial repression in these countries. Thus, many of the financial sector weaknesses characterizing their economies are still not eliminated from the economic systems. The analysis of the unit roots test reveal that variables measuring financial development and economic cycles' volatility are stationary, but that in the same vein, co-integration test suggests that there is no sufficient evidence for a long-run relationship between financial development, measured by a set of macroeconomic variables in a composite single index and economic cycles volatility measured by the extraction of the cyclical component of the GDP data.

Further, for a significant part of the in-sample countries, and even if financial development does not affect the volatility of economic cycles or economic growth, they are characterized by a certain stability of economic cycles.

The aggregate financial stability index developed in this study is another added complement to the ones existing in the previous literature that examines closely on the subject of the impact of financial development on economic cycles volatility or economic growth. The index can also be used as an early warning tool for policymakers to predict stability in the financial sector, where a high index level indicate a strong deepening of financial sector in the real economy.

Overall, the results show that the contribution of financial development in smoothing economic cycles, and thereafter economic growth is rather limited in the selected countries, with only a minor positive effect of some countries. This might be a consequence of the several currency of banking crises experienced by these economies in some transition periods, but this issue is beyond the scope of the present paper.

Another research perspective could be the investigation of the direction of causality between the two variables that could unveil which one pull the other to change over time.

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