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Dependency Models of Pakistan and Asian Countries' CFM Indicators to their Economic Growth before and after the 1997/98 Asian Financial Crisis: a Granger Causality Observation

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ABSTRACT

Even though it was proven beneficial for financial economists, professionals and decision makers, to use the CFM indicators in quest of improved national GDPs, they have in reality varied in the perception on the degree of dependency of the two main, the CFM and economic growth. Using the countries' panel data of 1980 to 2015 obtained from those countries' central bank, the e-View software and non-parametric statistics were employed to answer the three research questions. The non-parametric statistics were used to explore the correlation dependencies of those countries' level of significance of the Granger causality. The first research question was answered in terms of Pakistan's economic indication that there was a trend in GDP (downtrend) and FDI (uptrend) before the 1997/98 Asian financial crisis, but not after it. The second question proved that there was a certain degree of Granger causality between CFM and GDP; particularly in the FDI and capital market capitalization flows (MC). In terms of before and after the period of the 1997/98 Asian financial crisis, dependencies of CFM and GDP demonstrated an inverse relation (r = -1.000) as there were more Granger causalities in SD, DI and IF to GDP in the before crisis. While by countries the dependencies indicated a weak non-parametric correlation (r = 0.600) in spite of the strong Granger causality level of significance. The third research question answered the predictors of CFM and GDP; namely, LPS (p = 0.015) and FDI (p = 0.002) to GDP and GDP to SD (p = 0.001), MC (p = 0.030) and FDI (p = 0.012) for Pakistan; and SD (p = 0.000) and FDI (p = 0.012) for Indonesia, MC (p = 0.049) and FDI (p = 0.038) for Thailand, and MC (p = 0.023) for Singapore. The study had concluded that all findings on CFM and GDP inter-relationship supported the Keynesian and Fisher thought on CFM to achieve an improved GDP (in purchasing parity forms). The study then recommends that inward FDI as well as the domestic capital market flows mobilization be given a priority, more than the domestic banking system.

Keywords: *CFM or capital flows mobilization, GDP or gross domestic product, GC or Granger causality, ADF test, SD or savings & deposits, LPS or loans to private sectors, MC or capital market capitalization, DI or domestic investment, FDI or foreign direct investment, IF or inflation, IR or interest rate, and TOP or trade openness.*

JEL Codes: *E31, C32, F (16, 21, 34, 36, 43), O (11, 40).*

INTRODUCTION

In general, funding is what moves the economic growth of a nation. And funding in this observation, which is specifically expressed as capital flows mobilization or CFM is comprised of those coming from the banking system, capital market, and inward investments of Pakistan and the five Asian countries as presented in the observation's conceptual framework. The observation was fundamentally based on how Cobb-Douglas production theory,

which conceptualized capital flows and labor as determinants to output production, which in any economic terms is referred to as GDP, as what Apostolov, M. (2016) observed between FDI and GDP. Semjeniuk, G. & Mazzucato, M. (2017) cited that the works of the other famous economists, Thorstein Veblen, John M. Keynes and Minsky, were all focused precisely on the problem for achieving the quality of finance. All of them supported the notion of innovative finances, which the present observation analyzed them as the productivity of CFMs. And this productivity growth, including that of the CFMs, according to Tridico, P. & Pariboni, R. (2017) is the fundamental economic growth thru globalization and financialization. In addition, instead of naming it as productivity, Nasution, E.J. (2018) designated CFM as an innovative strategic mobilization of third party funding of the banking system, capital market system's capitalization and inward foreign direct investment.

In this study, Pakistan, with an economy size of one third of Indonesia and more or less similar to that of Thailand as of 2017, is observed in terms of how its CFM performance interacted with its GDP. Even though the country's share of its LPS, CM and FDI as of 2017, were relatively smaller than that of the five Asian countries as 6.2%, 2.1% and 2.2%, respectively, Pakistan possessed the same economic characteristic as a developing country as that of the five Asian countries. A brief data of these indicators for Pakistan and Asian is presented in Table 1.

Table1. *GDP and CFM Indicators of Pakistan and Combined Asean in 2017 (In Billion USD)*

Indicator	Pakistan	Asian	% Share To Asean
GDP (in purchasing parity price)	1,060	6,787	15.6
Credits to the private sector (LPS)	159	2,577	6.2
Market capitalization (CM)	*44	2,105	2.1
Inward FDI (home) (FDI)	42	1,879	2.2
Trade openness (TOP) – BOT	- 26	129	

Source: *Bank of International Settlement (BIS)*

*Estimated from USD 43.7 billion in 2012 grown at a 5% p.a. rate in 5 years.

The scope of the study was focused as an evaluation of the longitudinal economic panel data (1980-2015) from Pakistan and Asian countries with the objective of exploring the Granger causality relationship between the CFM indicators and the countries' GDPs. Using secondary data, it was however delimited to the inter-relationship between the time series data of CFM indicators and GDPs, as well as limited under the scope of the study. The study is generally beneficial to the economic development studies, particularly for government officials or business professionals for policy making formulation. The scholars, analysts, researchers and those interested would also be benefited from the observation.

Research Objective, Problem, Questions and Hypotheses

Based on the concerns of achieving the *objective* of how CFM affects economic growth, the main problem of the study was focused on the inter-relationship between the set of capital mobilization indicators with the economic growth of Pakistan as that compared to the five original Asean countries as control variables. These intern-relationships were also observed comparatively between the period of before and after the Asian financial crisis of 1997/98. Based on the main problem, the study specifically sought to answer the following research questions as well as their related hypotheses:

- Were there GDP and CFM trends in Pakistan during the period before and after the 1997/98 Asian financial crisis?
- Were Pakistan and Asian's economic growths dependent on the countries' CFM indicators? How did the dependency significantly differ between the following:
- Pakistan and Asian, and
- Period before and after the 1997/98 Asian financial crisis?

H_0: Pakistan and Asian's economic growths weren't dependent on the countries' CFM indicators.

H_0: The dependency didn't significantly differ between Pakistan and Asian, as well as the period before and after the 1997/98 Asian financial crisis.

- What were the best predictor models for economic growth in Pakistan and Asean

countries? H_0: There were no best predictor models for economic growth in Pakistan and Asian countries.

Underlying Theoretical and Conceptual Framework

From the realm of research philosophies of positivism, post-positivism, interpretivism, and pragmatism, the study was fundamentally based on the thoughts from at least five economists; namely, Thorstein Veblen, John M. Keynes, Irving Fisher, Charles Cobb and Paul Douglas, who all developed the building block of how CFM affected economic growth, which this observation looked at Pakistan and Asean countries. The knowledge on the related underlying theories was based on certain economic phenomena versus those laid out by the theories' null and alternative hypotheses of how CFM indicators behaved as a function of economic growth. These economic theories were interpreted from a practical point of view through the time series statistics. And the linkage between the theoretical and conceptual framework is briefly explained in the presentation of Table 2 below. Refer to Figure 2 for the conceptual framework of the observation.

Table2. *Underlying Theories of the Study*

Theory	Year	Economist	Linkage With The Concept
Leisure class	1899	Thorstein Veblen	Conspicuous consumption in GDP
Keynesian economics	1936	John M. Keynes	Demand of IS ≠ f (Liquidity/Money)
Monetary policies	1911	Irving Fisher	MV = PT, or velocity = f (Δ GDP)
Cobb-Douglas production	1928	Cobb & Douglas	CFM and labor = f (eco. Growth)

Brady, M. E. (2018) clearly reinforced how the preference for liquidity moved the demand side of Keynes' IS-LM concept in the form of capital mobilization; namely, those coming from the internal banking system's third party funding (SA), loans to the private sectors (LPS), as well as the inward FDI and domestic investments (DI). Dimand, R. W. (2014) supported this Keynesian economic view that capital mobilization is the function of economic growth or CFM indicators = f (GDP), even though Paesani, P. (2018) straightened out the Keynesian thought by comparing it with Vicarelli's thought on investment, saving and stock-holding decisions as the capitalist economies in terms of their interaction in light of fundamental uncertainty. Pertaining to Irving Fisher's theory on GDP, Isa, J. (2002) on the other hand presented his arguments with regard to the theory's total value of economic output measured in terms of PT = f (MV), or as the function of velocity. He emphasized in his argument that the function of interest rate or IR, which Fisher argued as the condition of equilibrium in the financial market, is in fact what moves (P x T) or economic output, not so much of velocity. These inter-relationship of CFM theories are depicted on the Keynesian IS-LM model in Figure 1.

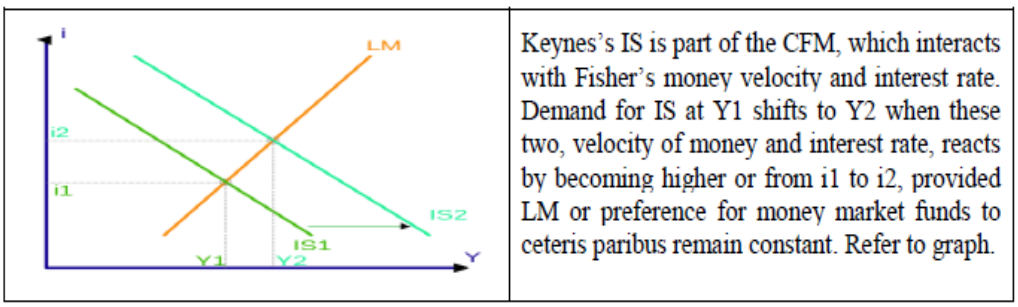

Figure1. *Interaction between Keynes' IS-LM and CFM Mobilization*

Source of graph: *https://www.google.com on IS-LM concept of the Keynesian economics.*

The earlier mentioned inter-relationship of CFM theories are explained through the reaction of higher interest rate and faster velocity of money supply. In addition to the money stock as the base of CFM, Nasko, A. M. (2016) cited the experience of Nigeria, still using the same time series, on the importance of financial deepening in the banking system and capital market system that provide the needed money supply for the economy. These two sectors, banking system and capital market system, seem to be most important in the CFM traffics. A study by Aurangzeb, (2012) investigated the contribution of banking sector in economic growth of

Pakistan, even though some other studies as those of Mushtaq, S. (2016) in Pakistan and Okafor, I.G. et. al. (2016) in Nigeria, didn't come up with the necessary causal relationship between deposits and economic growth. Both studies used co-integration and Granger causality to conclude relationship. In order to broaden the views of the independent variables from which the economic growth is a function of, Table 3 presented at least four perspectives from India, Nepal and Ghana. Bal. D.P. et. al. (2016), Sharma, R. et. al. (2018), Ho & Iyke (2018), and Bist & Bista (2018), at least studied the similar variables like those of the present observation; namely, TOP, FDI, IF and LPS.

Table3. *Additional Dimension of GDP Growth Determinants*

Author	Country	Year	Determinants Of Gdp Growth
Bal. D.P. et. al.	India	2016	CFM formation, TOP, exchange rate, and total productivity factors
Sharma, R. et. al.	India	2018	Foreign aid, government consumption, FDI, TOP, IF exchange rate, and human development
Ho. & Iyke.	Ghana	2018	Capital, labor, government expenditures, IF, FDI, foreign aid, financial globalization, and debt-services
Bist. & Bista	Nepal	2018	Credits to the private sectors (LPS)

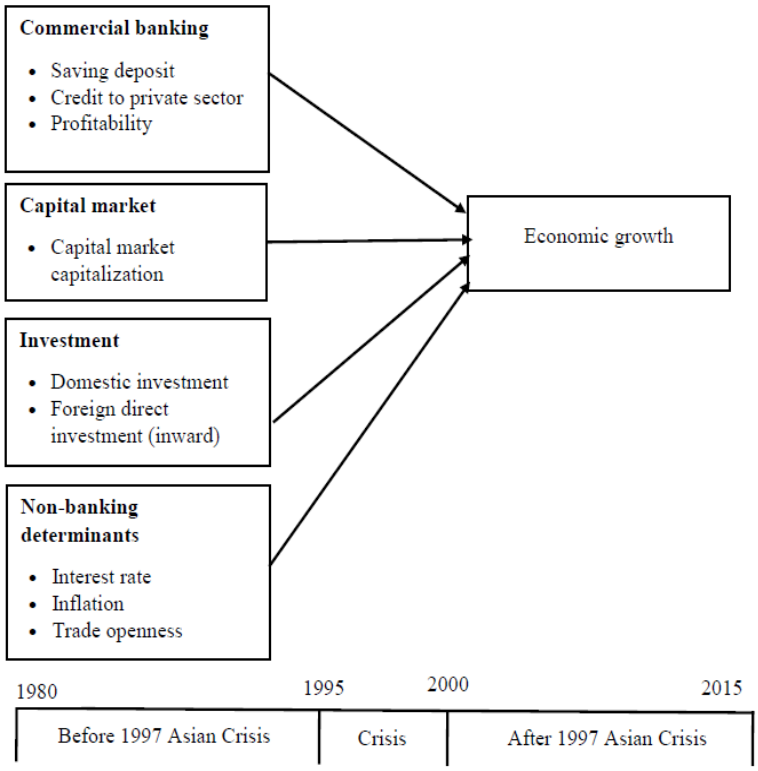

Figure2. *Conceptual Framework*

RESEARCH METHODOLOGY

In the framework of answering the research questions of the study, the methods of research and procedures employed have focused on a survey of the Pakistan and Asian countries' longitudinal panel data extending from the year 1980 to 2015, except for the first question which only asked about Pakistan as an icebreaking idea of how these two variables interacted. Certain bi variate relationship between economic growth measured the GDP and selected relevant CFM indicators. The CFM indicators were selected from the Pakistan and Asian banking system, capital market, investment flows and other relevant indicators like inflation (IF), interest rate (IR) and trade openness (TOP). The observation used the Granger causality test subject to the procedure presented in Figure 3. First, in order to test the stationarity of the longitudinal panel data, the unit root test was performed using the Augmented Dickey Fuller test or ADF test. Second, upon testing the level of stationarity of the integration at 1st order, if found dependent within the two-tailed

significance of 0.05, a Johansen co-integration for long-run dependency was run to determine the vector auto regression or VAR model, which is statistically formulated as: $Y_t = a + X_1Y_{t-1} + X_2Y_{t-2} + X_iY_{t-i} + €_t$, where Y_t = (n x 1) vector of times series; a = vector of intercepts; X_i = (n x n) coefficient matrices; and $€_t$ = (n x 1) vector of unobservable.

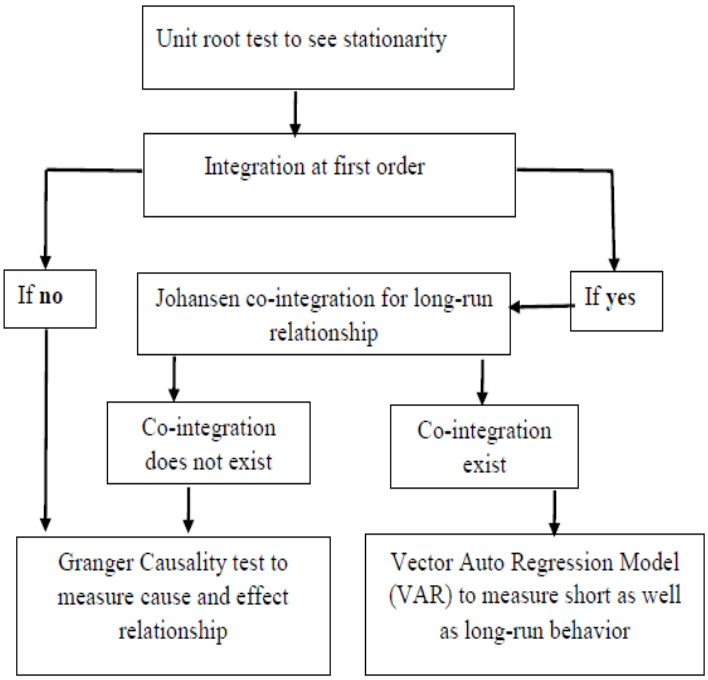

Figure3. *Decision Process for Granger Causality Test*

The observation used the e-View software to measure the Granger causality inter-relationship between Pakistan and Asian CFMs with their economic growth. And the analysis of the data is presented on Table 4.

Table4. *Data Analysis of the Research Questions*

Research Question	Hypothesis (H0)	Data Analysis
1st: Trends of CFM indicators	No trends	ADF unit roots/graph
2nd: Dependency of economic growth on CFM indicators	CFM indicators were not dependent to Pakistan GDP	Granger causality
2nd-1: Dependency differences between Pakistan and Asian	There were no dependency differences	Spearman correlation rho
2nd-2: Dependency differences between before & after crisis	There were no dependency differences	Spearman correlation rho
3nd : Best predictor models of Pakistan economic growth	There were no best predictor models	Granger causality

Result and Discussion

In the realm of answering the three research questions, the result of the study discussed the three main points, namely, the GDP and CFM trends, dependency between CFM and GDP growth, and economic growth models. The answers to the second research question are discussed below in terms of the dependency between GDP and the CFM indicators, difference between that of Pakistan and Asian, as well as that of before and after the 1997/98 Asian financial crisis.

Pakistan GDP and CFM Trends

In answering the first research question, trends of the before and after the 1997/98 Asian financial crisis, based on the result presented on Table 4 and Figure 4. Before 1997/98, at a first difference Pakistan GDPs (p = 0.000) were in the downtrend direction for about eighteen years, while FDI (p = 0.001) seemed to be on the uptrend direction. Serfraz, A. (2015) shared the finding that transfer of technology and innovation in Pakistan FDIs as significant factor in the CFM trend. This obviously indicated the aggressive move of the government to attract foreign investments into the country.

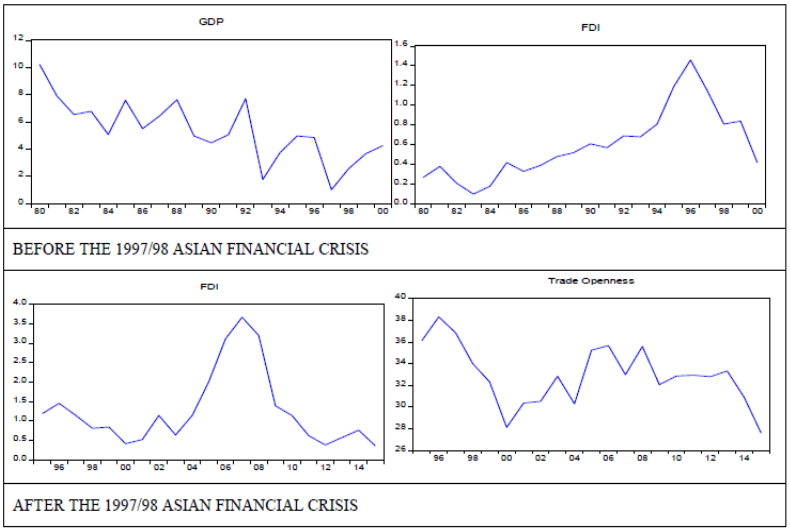

Figure4. *Trends of GDP and CFM for before and After the 1997/98 Asian Financial Crisis*

After the 1997/98 financial crisis, even though the trade openness with their trade counterparts demonstrated a downtrend, the FDI didn't show a clear pattern of trend. Table 5 clearly shows that before the crisis, only SD (p = 0.044) and DI (p = 0.002) didn't seem to indicate any existence of unit roots. This meant that the stochastic process of time series model of their relation with GDP may not possibly cause any problem at level. While after the crisis, IF (p = 0.003) indicated non-existence relation at level.

Table5. *Stationarity of Level and 1st Differences of Pakistan GDP and All Types of CFM*

Indicator	Before Crisis P-Value			After Crisis P-Value		
	Level *	1st Difference **	TREND	Level *	1st Difference **	TREND
GDP	0.767	0.000	Down trend	0.203	0.006	Not clear
SD	0.044	-	Not clear	0.239	0.018	Not clear
LPS	0.697	0.071	Not clear	0.366	0.009	Not clear
MC	0.423	0.022	Not clear	0.463	0.014	Not clear
DI	0.002	-	Not clear	0.918	0.000	Up/down trend
FDI	0.567	0.001	Up trend	0.238	0.001	Up/down trend
IF	0.082	0.000	Not clear	0.003	-	Not clear
IR	0.529	0.011	Not clear	0.291	0.001	Not clear
TOP	0.594	0.011	Not clear	0.322	0.000	Down trend

*When there is a unit root, or rejecting theH_0, the 1st difference is not existent.

**When there is no unit root, the need to adjust the lags is not necessary.

Pakistan and Asian's Dependency of CFM Indicators and GDP Growth

The answers to the second research question were discussed below in terms of the dependency between GDP and the CFM indicators, and the dependencies inter-relation between that of Pakistan and Asian, as well as that of before and after the 1997/98 Asian financial crisis using the observed p-values at 0.05 level of significance. The inter-relation was analyzed using a non-parametric Spearman rho correlation statistic.

Table6. *ADF Test and Time Series Directional Position of GDP and CFM*

Variable	ADF t-test	Eigen value	p-value (Sig. of 0.05)	
			CFM-to-GDP	GDP-to-CFM
SD	-0.887	0.893	0.237	0.001
LPS	-1.095	0.799	0.015	0.087
MC	-1.685	0.659	0.242	0.030
DI	-2.844	0.650	0.405	0.203
FDI	-1.388	0.476	0.002	0.505
IF	-2.758	0.385	0.083	0.012
IR	-1.467	0113	0.066	0.623
TOP	-1.331	0.024	0.188	0.531

From the result of the observation in Table 6, there were five variables that demonstrated strong inter-relational significance; namely, LPS and FDI to the GDP, and GDP to the SD, MC and IF. When the direction of the vector was observed, only the banking system LPS and inward FDI demonstrated causality to the country's GDP at p = 0.015 and p = 0.002, respectively. While Pakistan banking system's 3rd party funding SD (p = 0.001), capital market fund capitalization CM (p = 0.030) and inflationary pressure (p = 0.012), presented the other direction of the vector, GDP had affected the CFM indicators.Pre-requisite to further verification for a Johansen co-integration test, a lag selection must be done. The final prediction error (FPE), Akaike information (AIC), Schwarz information (SC) and Hannan-Quinn information (HQ) criterion may be used to test its optimality. And from all criteria mentioned, the AIC seemed to be the lowest at 29.674 from all, the lag 2 of which would become the basis for the Johansen co-integration test. Refer to Table 7.

Table7. *Lag Selection for a Pre-Requisite Johansen Co-Integration Test*

Lag	Log L	LR	FPE	AIC	SC	HQ
0	-673.330	n/a	2183281	40.137	40.541	40.275
1	-471.231	285.316	2066.938	33.014	37.054*	34.391
2	-333.458	121.565*	229.166*	29.674*	37.350	32.292*

*Indicates lag order selected by the criterion with AIC as the optimal level (the lowest)

LR: Sequential modified LR test statistic (each at 0.05 levels)

FPE: Final prediction error. AIC: Akaike information criterion.

SC: Schwarz information criterion. HQ: Hannan-Quinn information criterion

Using this optimal (lowest) level of AIC, but prior to the Granger causality test, Johansen co-integration test between variables was performed to short list the causality to those as presented in Table 7. The procedure had changed the VAR of economic growth model predictors to the extent where Max-Eigen observed value was larger than its critical value to prove that a certain degree of causality existed. First, the CFM-to-GDP earlier showing causality, the LPS and FDI, had actually short listed the co-integration to LPS only, while FDI didn't seem to prevail as a causality (p = 0.223). Second, the GDP-to-CFM inter-relationship earlier showing causality, the SD, MC and IF, had now proven to be co-integrated on the 3rd party funding SD only (p = 0.000).

Table7. *Johansen Test on Max-Eigen Value*

Hypothesized	Eigen value	Max-Eigen		Probability (Sig. = 0.05)
		Observed Value	Critical Value	
SD	0.893	76.1	52.4	0.000
LPS	0.799	54.6	46.2	0.000
MC	0.659	36.6	40.1	0.117
DI	0.650	35.7	33.9	0.030
FDI	0.476	21.9	27.6	0.223
IF	0.385	16.5	21.1	0.197
IR	0.113	4.1	14.3	0.850
TOP	0.024	0.8	3.8	0.364

To capitalize on the 2-tailed significance (< 0.05), the previously presented Granger causality significance of the hypothesized CFM indicators and GDP growth were evaluated in terms of their correlation using the non-parametric Spearman rho statistics. First, dependencies by period of before and after the 1997/98 Asian financial crisis did seem to demonstrate an inverse relationship (r = -1.000), when the accumulation of Pakistan's banking system 3rd party funding SD and DI had a strong causality with the country's GDP before the crisis occurred in 1997/98 as shown by the p = 0.044 and p = 0.002, respectively. While after the crisis they didn't react the same way, except for IF (p = 0.003). Second, dependencies by countries (Pakistan and Asian) basically demonstrated the same pattern of movement, even though it was not that strong (r = 0.600). The strongest resemblance of causality occurred between Pakistan and Indonesia in terms of how inward FDI Granger caused GDP and how GDP Granger caused the improved accumulation of their banking system's 3rd party funding. Should inward FDI Granger caused economic growth in Pakistan, Aqeel, A. &

Mohammed (2014) strongly argued that tariff rate, exchange rate, tax rate and credits to the private sector seemed to be the significant determinants for increased inward FDIs in Pakistan. Refer to Table 8.

Table8. *Spearman Dependency Sig. (< 0.05) Differences By Countries and Crisis Period*

VAR	Non Parametric		By Countries		By Period	
Statistic	Pakistan	Indonesia	Thailand	Singapore	Before	After
CFM = f (GDP)						
Third party SD	-	-	-	-	0.044	0.239
LPS	0.015	> 0.05	> 0.05	> 0.05	-	-
Inward FDI	0.002	0.012	> 0.05	> 0.05	-	-
DI	-	-	-	-	0.002	0.918
IF pressure	-	-	-	-	0.082	0.003
GDP = f (CFM)						
Cumulative SD	0.001	0.000	> 0.05	> 0.05	-	-
Capital MC	0.030	> 0.05	0.049	0.023	-	-
Inward FDI	0.012	> 0.05	0.038	> 0.05	-	-
Spearman rho						
Country (r)	+0.600	-	-	-	-	-
N	20	-	-	-	-	-
Period (r)	-1.000	-	-	-	-	-
N	-	-	-	-	-	6

Economic Growth Model Predictor for Pakistan and Asian Countries

In order to answer the third research question, series of Granger causality tests were performed. As explained in the methodology, ADF test for stationarity of non-presence of the unit root in levels and at least 1st differences was undertaken before estimating the appropriate lags for the vector auto regression or VAR using the Akaike information criterion. If this test has proven integrated, prior of the Granger causality, Johansen co-integration between variables was evaluated. The above procedure had resulted in the VAR of economic growth model predictors presented on Table 8. Dependency time series between CFM indicators to GDP or vice versa for Pakistan and Asian countries are presented in this section. First, predictors for Pakistan seemed to comprise of the availability of LPS and FDI to GDP at p = 0.015 and p = 0.002, respectively. The other vector direction indicated GDP to SD, MC and FDI at p = 0.001, p = 0.030 and p = 0.012, respectively. Second, predictors for the Asian countries regardless of their vector direction seemed to comprise of SD (p = 0.000) and FDI (p = 0.012) for Indonesia; MC (p = 0.049) and FDI (p = 0.038) for Thailand; and MC (p = 0.023) for Singapore. Elgar, E. (2010) revealed that after the crisis Indonesian GDP increased the services component rather than that of investments, which were still low in the country until 2004 (p. 261).

In spite of the mounting foreign indebtedness and under-developed currency swap market, Thailand was able to regain USD 9.6 billion inward FDI confidence into the country (Elgar, E., p. 390), while Singapore had managed to net the FDI outflows rather than the inward FDI with a total S$ 10 billion in 2001 (Elgar, E., p. 364) even though capital flows from the capital market sector seemed to be much better. Malaysia and the Philippines didn't seem to have the predictive models of those time series linkages with economic growth regardless of any vectors. Refer to Figure 5.

Pakistan Predictive Models	Asian Predictive Models
SD ç GDP	GDP è SD (Indonesia)
LPS è GDP	GDP è MC (Thailand)
MC ç GDP	GDP è MC (Singapore)
FDI è GDP	FDI è GDP (Indonesia)
IF ç GDP	GDP è FDI (Thailand)

Figure5. *Predictive Models of CFM And GDP for Pakistan And Asian*

Summary of Findings, Conclusion and Recommendation

Summary of Findings

Based on the analysis of the research questions, the following were the findings of the study:

- While GDP was on the down trend before the 1997/98 Asian financial crisis, Pakistan FDI seemed to be on the uptrend direction as more inward FDIs capitalized transfer of technology and innovation occurred in the country's industrial development, which after the crisis these trends seemed to be blurred again.
- Pakistan CFM-to-GDP indicated co-integration between GDP and LPS (p= 0.015) and FDI (p= 0.002), while GDP-to-CFM pointed a co-integration to the SD (p= 0.001), MC (p = 0.030) and IF (p= 0.012).
- Asian countries CFM-to-GDP indicated the following co-integration: Indonesia FDI to GDP (p= 0.012), while GDP-to-CFM pointed a co-integration for Indonesian SD (p= 0.000), Thailand MC (p= 0.049) and FDI (p = 0.038), and Singapore MC (p = 0.023).
- The dependencies of CFM and GDP by period, before and after the 1997/98 Asian financial crisis, did seem to demonstrate an inverse relationship (r = -1.000) as there were more Granger causality for SD, DI and IF to GDP in the before crisis than that of the absence of Granger causality in the after crisis.
- The dependencies of CFM and GDP by countries, seemed to demonstrate a weak non-parametric correlation (r = 0.600) in spite of the strong Granger causality level of significance.

Conclusion

Based on the above findings, in congruence with the Keynesian and Fisher thoughts on CFM, the study concluded that dependencies of CFM and GDP seemed to be valid in Pakistan only for certain predictive models; namely, CFM-to-GDP (LPS and FDI) and GDP-to-CFM (SD, MC and IF). For the Asian countries, in terms of CFM-to-GDP only Indonesia's FDI Granger caused GDP, while the other direction of the vector indicated GDP Granger caused SD and MC in Indonesia and Singapore, respectively, while capital market capitalization and FDI Granger caused GDP in Thailand.

Recommendation

Learning from the experience of the Pakistan and Asian countries' economic management of CFM to achieve improved economic growth or vice versa, the observation recommended the following:

- More inward FDIs and domestic capital market capital flows mobilization (MC) to be positioned in those countries.
- Even though domestic banking system's capital flows seemed to be less predictive compared to the latter two CFMs, the FDI and the capital market capital flows (MC), there were indications that banking system must also be improved as it will spearhead the local industrial development.

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The paper empirically identifies the determinants of growth in foreign direct investment (FDI) in Pakistan over the period 1961–2003. Our main interest is to study how different variables or indicators reflecting the trade, fiscal, and financial sector liberalization attract FDI in Pakistan. The study uses the co integration and error-correction techniques to identify the variables in explaining the FDI in Pakistan. The study considers the tariff rate, exchange rate, tax rate, credit to private sector, and index of general share price variables to see if they may explain the inflow of foreign direct investment. Also included are wages and per capita GDP to test for the relative demand for labor and market size hypotheses. All variables indicate correct signs and are statistically significant except for wage rate and share price index. The study clearly emphasizes the role of these policy variables in attracting FDI and determining its growth in both short- and long-run in Pakistan, and also indicates a positive and significant impact of reforms on FDI in Pakistan.

Public Financing of Innovation: New Questions

Mariana Mazzucato Gregor Semieniuk

Oxford Review of Economic Policy, Volume 33, Issue 1, 1 January 2017, Pages 24–48

- The green technological revolution today is witnessing a similar dynamic whereby it is mission-oriented public funds that are investing in the most capital-intensive and high-risk areas.
- He did not, however, look at the problem of what kind of finance is the best to serve the purposes of innovation. The works of other prominent economists such as Veblen, Keynes, and Minsky have focused instead precisely on the problem of the quality of finance.

Schumpeter, J.A. (2002-1912). The Theory of Economic Dev: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle. England, Cambridge, MA. Harvard University Press. "Schumpeter's focus on innovation and inter-firm competition made him place finance at the centre of his analysis. He called the banker the 'ephor' of the exchange economy."

Veblen,T.(1904). The Theory of Business Enterprise. New York, C. Scribner's Sons. "distinguished between industrial and pecuniary motives, and emphasized how the pursuit of pecuniary gains by business managers and

investment bankers is often in stark opposition to technological industrial advances."

Davies et al. (2014) and Haldane (2016) provide firm-level evidence, showing that in recent decades capital markets have become excessively focused on short-term profits, with a negative impact on the investment rate of publicly quoted firms.

Moseley, F. 2016. Money and Totality: A Macro-Monetary Interpretation of Marx's Logic in Capital and the End of the Transformation Problem. Leiden: Brill Publishers.

Money and Totality: a Review Essay

John Smithin

Pages 139-155 | Published online: 10 Apr 2018. Journal of Post-Keynesian Economics. Vol. 41/Issue 1 (2018).

Recall that in writings before the *General Theory* Keynes (1933a, 1933b), in particular, made allusion to the Marxian circuit via the concept of the monetary theory of production.

In Equality, Financialization, and Economic Decline

Pasquale Tridico &Riccardo Pariboni

Pages 236-259 | Published online: 13 Oct 2017. Journal of Post Keynesian Economics. Vol. 41, Issue 2, 2018.

Finally, they propose an extended version of the Sylos Labini's equation, where productivity growth is claimed to depend positively on GDP rate of growth and the wage share, and negatively on income inequality and financialization. They submit to empirical scrutiny their extended productivity equation; the results of their estimations provide support to their theoretical argument. This productivity growth, including that of the CFMs, according to Tridico, P. & Pariboni, R. (2017) is the fundamental independent variables for moving economic growth.

Vicarelli, Keynes, and the Unstable Nexus between Investment, Liquidity, and Finance

Paolo Paesani

Pages 16-35 | Published online: 08 Feb 2018. Journal of Post Keynesian Economics. Vol. 41, Issue 1, 2018.

The goal of this article is to reconstruct Keynes's vision of the unstable nexus between investment, liquidity and finance, as set out by the Italian economist Fausto Vicarelli (1936–1986). As argued in the article, one of Vicarelli's main contributions consists of explaining the inherent instability of financially sophisticated capitalist economies in terms of the interaction (and double dissociation) between investment, saving, and stock-holding decisions, within a Keynesian framework characterized by the presence of fundamental uncertainty. The capitalist economies in terms of their interaction in the presence of fundamental uncertainty.

Paesani, P. (2018). Vicarelli, Keynes, and the unstable nexus between investment, liquidity and finance. On-line Journal of Post Keynesian Economics, Vol. 41, Issue 1, 2018. Retrieved from https:// www.tandfonline.com /doi/abs/10.1080 /01603477.2017.1373025 on 3/4/2019.

Banking Theories and Macroeconomics

Antonio Bianco &Claudio Sardoni

Pages 165-184 | Published online: 04 May 2018. Journal of Post Keynesian Economics, Vol. 41, Issue 2, 2018.

banks as intermediaries of outside money (IOM).

old view of banks as originators of inside money (OIM) is being reconsidered.

Bal, D.P. et.al. (2016). The Effects of Capital Formation on Economic Growth in India: Evidence from ARDL-bound Testing Approach. Global Business Review Journal, Vol. 17, Issue 6, pp. 1388-1390. Retrieved from (Using the error correction model, equilibrium relation between formation of CFM and eco. Growth were due to CFM formation, TOP, exchange rate and total factor productivity)

Sharma, R. et. al. (2018). Impact of Selected Macroeconomic Determinants on Economic Growth in India: An Empirical Study. The Journal of Business Perspectives, Vol. 22, Issue 4, p. 408. Retrieved from(Impact of foreign aid, government consumption expenditure, FDI, TOP, exchange rate, human capital development, and IF on economic growth in India by using yearly data for the period of 46 years, that is, from 1971 to 2016. An autoregressive distributed lag (ARDL)

Ho, S.Y. & Iyke, B.N. (2018). The Determinants of Economic Growth in Ghana: New Empirical Evidence. Global Business Review Journal, Vol. 17, Issue 6, 2018. Retrieved from (Capital,

labor, government expenditure, IF, foreign aid, FDI, financial development, globalization and debt servicing, were determinants of economic growth using Solow growth model)

Bist, J.P. & Bista, N.B. (2018). Finance-Growth Nexus in Nepal: An Application of the ARDL Approach in the Presence of Structural Breaks. Vikalpa: Journal for Decision Makers, Vol. 43, Issue 4, pp. 236.(Because Nepal has a bank-based economy, the study used credit issued by banking and financial institutions to the private sector as the proxy for financial development. The economic growth has been measured using real gross domestic product (GDP) growth and real GDP per capita growth (constant 2005 US$). The autoregressive distributed lag (ARDL)

Impact of Selected Macro Economic Determinants on Economic Growth in India: an Empirical Study

Rajesh Sharma, Pradeep Kautish, D. Suresh Kumar.

The Journal of Business Perspectives. first Published November 11, 2018. Volume: 22 issue: 4, page(s): 405-415

Article first published online: November 11, 2018; Issue publish ed: December 1, 2018 Due to the socio-economic, infrastructural and governance peculiarities, identification of key macroeconomic factors determining the economic growth in developing countries becomes a complicated case. The present study attempts to assess the impact of foreign aid, government consumption expenditure, foreign direct investment, trade openness, exchange rate, human capital development, and inflation on economic growth in India by using yearly data for the period of 46 years, that is, from 1971 to 2016. An autoregressive distributed lag (ARDL)

The Effects of Capital Formation on Economic Growth in India: Evidence from ARDL-Bound Testing Approach

Debi Prasad Bal, Devi Prasad Dash, Bibhuduttasubhasish.

Global Business Review Journal. Volume: 17 issue: 6, page(s): 1388-1400

Article first published online: October 24, 2016; Issue published: December 1, 2016 First Publis hed October 24, 2016

This article examines the impact of capital formation on economic growth in India covering the period from 1970 to 2012. This paper traces a long-run equilibrium relation between capital formation and economic growth and other control variables by using autoregressive distributed lag (ARDL) model. The error correction (ECM) model shows that the capital formation, trade openness, exchange rate and total factor productivity positively affect the economic growth and the inflation negatively affects the economic growth in the short run. It is recommended that government increases the level of capital formation in order to achieve a higher level of economic growth.

The Determinants of Economic Growth in Ghana: New Empirical Evidence

Sin-Yu Ho, Bernard Njindaniyke

Global Business Review Journal. Volume: 17 issue: 6. 2018. First Published July 2, 2018. Article first published online: July 2, 2018.

This article deals with an investigation into the determinants of economic growth in Ghana over the period from 1975 to 2014. In particular, we investigated the impact of physical capital, human capital, labour, government expenditure, inflation, foreign aid, foreign direct investment, financial development, globalization and debt servicing on economic performance within an augmented Solow growth model. It was found that, in the long run, both human capital and foreign aid have a positive influence on output, while labour, financial development and debt servicing have a negative impact on output. It was also found that, in the short run, government expenditure and foreign aid have a positive influence on economic growth, while labour, inflation and financial development have a negative impact on economic growth. These findings hold important policy implications for the country.

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growth in developing countries becomes a complicated case. The present study attempts to assess the impact of foreign aid, government consumption expenditure, foreign direct investment, trade openness, exchange rate, human capital development, and inflation on economic growth in India by using yearly data for the period of 46 years, that is, from 1971 to 2016. An autoregressive distributed lag (ARDL) bounds model enables to examine the short-run and long-run impact of selected determinants on economic growth during the study period. The outcomes of the study find that in the long run, foreign aid, the government's final consumption expenditure and foreign direct investment have a positive and significant impact on economic growth, whereas, economic growth has been negatively influenced by exchange rate and human capital development. Contrary to the long run, foreign aid has a negative and significant impact on economic growth in the short run. The short-run outcomes show that all the selected macroeconomic determinants have either negative or positive influence on economic growth. To ensure the long-run economic growth, besides regulating the exchange rate fluctuations, policies related to export -import and human capital development need to be re-examined.

Finance–Growth Nexus in Nepal: an Application of the ARDL Approach in the Presence of Structural Breaks

Jagadish Prasad Bist, Nar Bahadurbista

First Published December 6, 2018. Vikalpa: Journal for Decision Makers. Volume: 43 issue: 4, page(s): 236-249

Article first published online: December 6, 2018; Issue published: December 1, 2018this study examines the relationship between financial development and economic growth using annual time series data for Nepal during the period 1984–2014. Because Nepal has a bank-based economy, the study used credit issued by banking and financial institutions to the private sector as the proxy for financial development. The economic growth has been measured using real gross domestic product (GDP) growth and real GDP per capita growth (constant 2005 US$). The autoregressive distributed lag (ARDL) bounds testing approach is used to investigate the cointegration among variables in the presence of structural breaks. The study used Zivot and Andrews' (ZA) unit root test in order to find the structural breaks in the variables. The study finds that the structural change in private credit took place in 2007 when the government of Nepal and Maoists (the then rebels) signed a Comprehensive Peace Agreement and the Maoist rebels joined the interim government, which formally ended the 10 years long civil war in Nepal.

Irving Fisher's Progeny and the 2008 Financial Crisis

Alice orcutt Nakamura,

Journal of History of Economic Thoughts, Vol. 35, Issue 2, 2013.

https://doi.org/10.1017/ S1053837213000060 Published online: 10 May 2013

Irving Fisher believed in evidence-based decision making. This paper considers how three aspects of Fisher's methodology could be useful now in the quest to deal with U.S. financial instability: (1) his institutional approach; (2) his efforts to use index number theory as a means to improve official statistics data; and (3) his interest in automating aspects of data analyses. The paper concludes with a call to action for Fisher's progeny. Actions to solve US financial instability are surely the most fitting possible tribute to Irving Fisher.

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