

# **Cyclical Behaviour of Macroeconomic Policies and Capital Flows: A Study of Asian Countries**

NAZMUS SADAT KHAN\*

This paper examines cyclicity in fiscal and monetary policies including capital flows in 28 Asian countries and explains the cyclicity of fiscal policy by considering the effects of corruption and democracy. Pro-cyclical fiscal policy is considered responsible for many economic crises in emerging economies in the past. The paper analyses the nature of macroeconomic policies adopted by these Asian countries and the underlying factors behind such choices. The analysis is important for pursuing effective policy, especially in the context of the current economic downturn. Using different measurement techniques, the analysis brings out four key stylised facts. First, fiscal policy and capital flows are mostly pro-cyclical in lower income countries and a-cyclical (or slightly counter-cyclical) in higher income countries. Second, monetary policy is mostly a-cyclical (or slightly pro-cyclical) in lower income countries and counter-cyclical in higher income countries. Third, emerging East Asian countries show more pro-cyclical fiscal policy than South Asian and Middle Eastern countries. Fourth, there is a positive correlation between corruption and pro-cyclicity of fiscal policy.

## **I. INTRODUCTION**

The behaviour of economic policies over the business cycle has received increasing attention from researchers in recent years. Over the last decade, a large and growing literature has argued that there is a fundamental difference between how fiscal policy is conducted in developing countries compared to industrial developed countries. But how should fiscal policy be set over the business cycle? From a Keynesian perspective, there is a clear view that public expenditure should act as a stabilising force and move in a countercyclical direction. If governments followed these prescriptions, we should have observed a

---

\* School of Economics and Finance, Queen Mary, University of London.

The Author thanks his MSc dissertation supervisor Dr. F. Gulcin Ozkan for her helpful comments and discussions in preparing this paper. The author is also grateful to Dr. Sadiq Ahmed for encouraging him to publish this paper and helping with useful suggestions.

countercyclical fiscal policy. That is, during a boom: the total government spending as a share of GDP should go down because of automatic stabilisers and with constant tax rate and some degree of progressivity, government revenue as a share of GDP should go up.

However, the theoretical conjectures are weaker in a neoclassical framework. If government spending is endogenised, the degree of substitutability in utility between government consumption and private consumption decides the optimal co-movement between these two items. If public and private components are substitutes, we should expect to see government consumption moves countercyclically; if complements, alternatively, the pattern would be procyclical. If public and private consumption are separable in utility, finally, the government should seek to perfectly smooth government consumption over the business cycle. On the other hand, tax-smoothing models inspired by Barro (1979) imply that fiscal policy should remain essentially neutral over the business cycle and respond only to unanticipated changes that affect the government's budget constraints. Hence, if Keynesian model is followed, one should observe a negative correlation between government spending and output and a positive correlation between tax rates and output over the business cycle. In contrast, if Barro's model is followed, those correlations should essentially be zero.

What does the evidence show? There is substantial evidence that in many countries fiscal policy is often pro-cyclical. That is, being expansionary in good times (boom) and contractionary in bad times (recession). Gavin and Parotti (1997) first reported the phenomenon of fiscal pro-cyclicality in Latin America. Talvi and Vegh (2000) argued that far from being a phenomenon of Latin America, pro-cyclical fiscal policy seems to be the norm in the developing world just as fiscal policy is a-cyclical in the advanced economies.

So far, studies in this field conducted research on different parts of the world. Some concentrated on a particular income group and some a specific region. This paper tries to find out how the macroeconomic policies behave in Asian countries. Asia, for many reasons, has a growing importance in world economy. Asia's emerging economies enjoying the most spectacular growth in history. Its share of global GDP (at purchasing power parity) increased from 36 per cent in 1980 to 45 per cent in 2008 and looks set to grow to 51 per cent in 2014. Emerging market consumers have been outspending the Americans since 2007; by last year their share of global consumption had gone up to 34 per cent against America's 27 per cent.<sup>1</sup> Unlike other continents, Asian countries are different

---

<sup>1</sup> Source: JPMorgan Chase.

from each other in many respects. On the one hand, there are countries like Singapore, South Korea, Taiwan, Hong Kong, China and India which are growing very fast and on the other hand it has one of the poorest economies in the world like Cambodia, Bangladesh and other south Asian countries. Most of Asia's high income countries are oil producing Middle East countries, which have some unique characteristics. In spite of all these facts, Asia is still considered one of the lagged behind continents. Inability to take proper policy decisions is one of the reasons why Asia has failed to utilise its potential. In fact, if we look at the history of debt crisis in emerging markets, we will see that many of them are due to high spending and borrowings in favourable economic conditions. Since Asia has some biggest emerging markets in world economy today, a study of cyclical behaviour of macroeconomic policies in Asian countries can be interesting. Some economists argue that it is normal for emerging countries to follow procyclical macroeconomic policies, while others argue that following a procyclical policy can cause crisis in future. This paper also tries to look at these issues by discussing the impact of corruption and democracy in policy making. This paper uses lagged values of tax and trade deficit as control variables in the regression equation to measure cyclicity of fiscal policy, which should be able to give a more accurate estimation of fiscal cyclicity compared to the previous studies.

In the past, very few studies concentrated on Asian countries only, mainly because of lack of data availability. The problem still exists. For most of the Asian countries, longer span of data is not available. Quarterly data is also very rare, that's why annual data is used in this paper. It is also very difficult to find data on different components of government expenditure and other variables. Data quality and cross country comparability is also very poor. In spite of all these drawbacks, this paper took the bold step to find out whether the cyclical behaviour of macroeconomic policies for Asian countries is consistent with results of previous studies and the reason for such behaviour.

This paper makes the following contributions: First, it tries to find out the cyclical behaviour of macroeconomic policies and net capital inflows of countries of different income groups by comparing the cyclical components of real GDP, real government expenditure, interest rate and capital accounts. Secondly, it checks the robustness of the results found by estimating some regression equation. Thirdly, it tries to find the cyclicity of the above mention factors by dividing countries according to their geographical location. Finally, it tries to explain the reason of such cyclical behaviour of fiscal policies by considering corruption, democracy and other factors.

The paper proceeds as follows. Section II discusses the different literature that contributed to the study of this field. Section III provides the theoretical

framework of the study. Section IV presents the data and explains how different data are created. Section V contains the results. Section VI presents some explanation of the results and finally the last section gives some concluding remarks.

## II. LITERATURE REVIEW

Literature on measuring and explaining the cyclical behaviour of macroeconomic policies has grown at a significant rate over the last 10 years. As mentioned earlier, Gavin and Perotti (1997) first called attention to the phenomenon of procyclical fiscal policy. After that many economists tried to explore this sector in different ways and for different sample of countries. Talvi and Vegh (2000), Catao and Sutton (2002), Manasse (2005) and Kaminski, Reinhart, and Vegh (2004) noted that this is not a Latin American phenomenon only, procyclicality of fiscal policy is common in many (though not all) developing countries. For OECD and EU countries, Arreaza *et al.* (1998) generated panel-based estimates of the degree of cyclicity in government consumption, subsidies, transfers and (indirect and direct) tax revenues and found that fiscal surpluses are on average procyclical and government consumption varies positively but less than proportionately with output fluctuations. Using a new econometric approach, Braun (2001) reached a conclusion that fiscal policy is countercyclical in OECD countries and procyclical in developing countries. Lane (2003) also provides evidence on the procyclicality of fiscal policy in developing countries compared to OECD countries. Talvi and Végh (2005) in their study showed that the correlation between the cyclical component of government consumption and GDP is positive for all of the 36 developing countries in their sample (with an average of 0.53). In sharp contrast, the average correlation for G7 countries is zero. In line with previous results, Gupta *et al.* (2004) found econometric support for the procyclicality of government spending in developing countries, though the degree of procyclicality varies across spending categories. In a more recent research, using various econometric methods and the quarterly dataset for 49 countries, Ilzetki and Vegh (2008) came to a conclusion that the developing countries do actually show procyclical fiscal policy. By now, a large number of authors have reached similar conclusions to the point that the procyclicality of fiscal policy in developing countries has become part of the conventional wisdom.

In terms of monetary policy, though there is an impression that the developing countries often follow a contractionary monetary policy in bad times (Lane 2003), systematic empirical work is rare. This is mostly because of the notorious difficulties (present even for advanced countries) in empirically

characterising the stance of monetary policy. But if ‘bad times’ are defined only in terms of currency or banking crisis, then there is a small but growing theoretical literature on monetary policy in general and interest rate defences in particular (see Flood and Jeanne (2000), Aghion, Bacchetta and Banarjee (2001), Lahiri and Vegh (2003)). However, the empirical evidence in this area is rather inconclusive.

In spite of the difficulties, there have been some attempts to measure the cyclical behaviour of the monetary policy by estimating the Taylor's rules for countries for which data are available. Again, most of these studies have been limited to developed countries. Clarida, Gali and Gertler (1997) found that since 1979 Japan and Germany have pursued countercyclical monetary policy (lowering interest rates in bad times and increasing them in good times) but monetary policy in the United States has been acyclical. For South American countries, Corbo (2000) finds that Chile has an acyclical monetary policy (i.e., does not respond to output) and Moron and Castro (2000) find that Peru's monetary policy is countercyclical. In finding this result they used the change in the monetary base as the dependent variable and added an additional term involving the deviation of the real exchange rate from trend.

Why would developing countries pursue a procyclical fiscal policy that might exacerbate the business cycle? There exists a few explanations for procyclical fiscal policy in the literature: (1) political economy explanations typically based on the idea that good times encourage fiscal profligacy and/or rent-seeking activities: (Tornell and Lane 1998, 1999, Talvi and Végh 2005, Alesina and Tabellini 2005) and (2) imperfections in international credit markets that prevent developing countries from borrowing in bad times (Gavin and Perotti 1997, Guerson 2003, Riascos and Végh 2003, Caballero and Krishnamurthy 2004, Mendoza and Oviedo 2006, and Susuki 2006). However, systematic empirical work that firmly supports these theories is scant.

According to Tornell and Lane (1999), Lane and Tornell (1998), when more resources are available (i.e. in booms), the common-pool problem is more severe and the fight over common resources intensifies, leading to budget deficits. An important outcome in this approach is that the government spending can grow more than proportionally to the increase in government income. The authors named this the “voracity effect”. So a basic result of this political economy explanation is that the more scattered the power of the government among different agents, the more procyclical will be the fiscal policy of that country relative to a unitary system. The generality of the voracity hypothesis does not give any indication of how this effect will vary across different parts of government spending. However, it is likely that the specific distribution of fiscal

power will have an impact on the difference in procyclicality across different expenditure items.

There is an impression that the initial level fiscal surplus causes an intense lobbying for higher public spending. That is, if fluctuations in the tax base are small, spending pressures will not play much of a role and full tax smoothing will hold as an approximation. In contrast, when fluctuations in the tax base (and hence in the budget surplus) are large, political pressures become harder to resist and will have a major impact on fiscal policy (Talvi and Vegh 2005). Alesina and Tabellini (2005) made a similar point in which voters prefer higher spending during a boom rather than saving the high resource for corrupt government. They provide cross country evidence mainly in relation to corruption. In the rational budget cycles literature (Rogoff and Siebert 1989 and Rogoff 1990), voters face an adverse selection problem and this leads to distorted fiscal policy before the election. Lane (2002) reports some mixed evidence for various fiscal spending components in the OECD country sample, using a measure of institutional constraints as an index of power dispersion, although it is widely used in the growth literature as an indicator of institutional quality.<sup>2</sup>

The explanation in terms of imperfections in international credit market was first reported by Gavin and Perotti (1997). Its main argument is that a country facing credit constraints may not borrow in bad times and is forced to pay in bad times, resulting in a contractionary fiscal policy. This explanation is largely based on anecdotes (especially during crises), not on econometric evidence. Similar argument was shown by Guerson (2003), Caballero and Krishnamurthy (2004), Mendoza and Oviedo (2006), and Susuki (2006).

### III. CONCEPTUAL FRAMEWORK

This section discusses the conceptual framework that has been used to describe the empirical findings of the following sections. That is, it discusses what variables should be used to find the cyclical behaviour of fiscal and monetary policy and the capital inflows. It will also define procyclical, countercyclical and a-cyclical fiscal and monetary policies. It is important to specify these issues in the beginning because different literature in this field has used different conceptual frameworks for their studies. To avoid controversy and ambiguity, I will be very specific in defining different policies and the variables used to explain the cyclicity of those policies.

---

<sup>2</sup> See Glaeser *et al.* (2004) for more details.

### **III.1 Fiscal Policy**

To measure the cyclical stance of fiscal policy, it is important to consider different factors. First of all, it should be clear whether we should use policy instruments or outcomes to define policy cyclical. In line with Kaminsky, Reinhart, and Vegh (2004), this paper argues that it only makes sense to measure fiscal policy by looking at policy instruments. Outcomes will not be an appropriate variable to define policy cyclical, because it lies outside the policymakers' control. Secondly, it is important to decide which fiscal variable(s) would be appropriate indicator(s) of fiscal cyclical. Theoretically, the following variables have a link with fiscal cyclical: (a) Government spending (b) Tax rates, (c) Tax revenues, (d) Primary fiscal balance, (e) Primary balance as a percentage of GDP, (f) government expenditure as a percentage of GDP, and (g) Tax revenue as a percentage of GDP. In a most comprehensive study, Kaminsky, Reinhart, and Vegh (2004) conclude that government spending and tax rates are the best indicators of cyclical because they are unambiguous about cyclical stances and can be viewed as policy instruments rather than outcomes. Since there is no readily available data on tax rates, the only indicator that will be used in this paper to explain cyclical behaviour of fiscal policy is the government expenditure.

Following Kaminsky, Reinhart and Vegh (2004), fiscal cyclical is defined in the following way:

- A procyclical fiscal policy involves higher government expenditure in good times and lower government expenditure in bad times. This policy is called procyclical because it would tend to reinforce the business cycle (i.e., fiscal policy is expansionary in good times and contractionary in bad times).
- A countercyclical fiscal policy involves lower government expenditure in good times and higher government expenditure in bad times. This policy is called countercyclical because it would tend to stabilise the business cycle (i.e., fiscal policy is contractionary in good times and expansionary in bad times).
- An acyclical fiscal policy involves constant government expenditure over the business cycle. This policy is called a-cyclical because it neither reinforces nor stabilises the business cycle.

### **III.2 Monetary Policy**

There are very few attempts to study cyclical behaviour of monetary policy in the literature and this is mainly because of the difficulty associated with it. Measuring the cyclical behaviour of monetary policy is difficult because of two reasons: (a) monetary policy instrument is often dependent on the existing

exchange rate regime (i.e., fixed or floating exchange rate) and (b) it is difficult to measure the behaviour of endogenous variables (i.e., outcomes) without specifying some implicit models.

Here, the theoretical argument provided by Kaminsky, Reinhart and Vegh (2004) is used. According to them, a common policy instrument across these two different regimes would be a short term interest rate.

Some other variables like real money balances (M1 and M2), real interest rate and the rate of growth of central bank domestic credit could have been used as a policy instrument. But none of these variables show unambiguous relationship with the business cycle across all possible cyclical behaviour of the monetary policy (i.e., procyclical, countercyclical and a-cyclical). For example, a positive correlation between the cyclical component of real money balances and business cycle could mean either a procyclical, countercyclical or a-cyclical monetary policy.

Many authors (as discussed in the literature review section) have tried to find the cyclical of monetary policy by estimating the Taylors rule (see Taylor 1993) for different countries. Most of them used a regression equation of the form:

$$i_t = \alpha + \beta_1(\pi_t - \pi) + \beta_2 y_t^E \quad (1)$$

Here,  $i_t$  is a policy-controlled short-term interest rate,  $\pi_t - \pi$  captures deviations of actual inflation from its sample average and  $y_t^E$  is the output gap, measured as the cyclical component of output (i.e., actual output minus trend) divided by actual output. The stance of the monetary policy over the business cycle is explained by the coefficient  $\beta_1$ . A positive and significant  $\beta_1$  indicates countercyclical, a negative and significant  $\beta_1$  indicates procyclical and an insignificant  $\beta_1$  indicates a-cyclical monetary policy.

There are now numerous studies that have estimated Taylor rules, though most are limited to developed countries due to unavailability of data in developing countries. This paper will stick to short term interest rate as a measure of monetary policy and define monetary cyclical in the following way:

- A procyclical monetary policy involves a reduced interest rate in good times and a increased interest rate in bad times. That means there will be a negative correlation between the cyclical component of the short term interest rate and the business cycle.
- A countercyclical monetary policy involves an increased interest rate in good times and a reduced interest rate in bad times. This implies that there will be a positive correlation between the cyclical component of short term interest rate and the business cycle.



- An a-cyclical monetary means the interest is not dependent on the business cycle. That is there will be zero correlation between the cyclical component of the interest rate and business cycle.

### **III.3 Capital Flows**

In this paper “net capital inflows” is used to explain the cyclical behaviour of capital flows because the relationship between net capital inflow and the business cycle is unambiguous for all the three cases (i.e., positive for procyclical, negative for countercyclical and zero for a-cyclical capital flows). That is why the correlation between the net capital inflows and business cycle is measured in this paper to find the cyclical behaviour of the capital flows.

The cyclical behaviour of the capital flows are defined in the following way:

- Capital flows are procyclical when the correlation between the cyclical component of net capital inflows and business cycle is positive. The economy thus borrows from abroad in good times (i.e., capital flows in) and repays in bad times (i.e., capital flows out).
- Capital flows into a country are said to be countercyclical when the correlation between the cyclical components of net capital inflows and business cycle is negative. In other words, the economy borrows from abroad in bad times (i.e., capital flows in) and repays in good times (i.e., capital flows out).
- Capital flows are a-cyclical when the correlation between the cyclical components of net capital inflows and business cycle is not statistically significant. Which means, the pattern of international lending and borrowing is not systematically related to the business cycle.

### **III.4 Business Cycle and Measuring Cyclicity**

How do we measure business cycle? Throughout this paper, real GDP of different countries’ is used as a proxy of the business cycle. This is recognised by almost all authors in this literature and the availability of GDP data also made it an attractive option. Measuring cyclicity is not straightforward for most developing countries where quarterly data is not available. Many western developed countries calculate the turning points of the business cycle using the quarterly data (i.e., National Bureau of Economic Research in USA). But for most of the developing countries and for almost all countries in its paper’s sample, quarterly data for the national accounts is at best recent and most often nonexistent. Even less is known about economic fluctuations and points of inflexion. Thus, in order to find the cyclical stance of macroeconomic policies and capital flows, it is important to have a criterion that can break down economic conditions into “good” and “bad” times. To sort out this issue, a

filtering technique popularly known as the Hodrick-Prescott (HP) filter is used. This filter decomposes each time series into its stochastic trend and cyclical component. After decomposing each series, a variety of pair wise correlation between the cyclical component of GDP, government expenditure, short term interest rate and capital flows is reported. These correlations are used to establish only contemporaneous co-movements.

### III.5 Regression Model

So far, we have only considered correlation of cyclical components GDP and other macroeconomic policies to measure cyclical. But Forbes and Rigobon (2001) pointed out that the unadjusted correlation coefficient is potentially misleading when samples have different levels of volatility. For this reason, since output volatility differs markedly across countries, many authors in literature (Arreaza *et al.* 1999, Sorensen, Wu and Yosha 2001, Lane 2003, and Alesina and Tabellini 2005) prefer the regression based measure of cyclical as an alternative to the correlation based method to measure cyclical. However, there is no consensus on this issue. As shown later, conclusions about the cyclical of policy do not vary too much no matter which procedure we use. But still, as robustness check both the methods are used.

Most of the current literature has estimated some version of the equation<sup>3</sup>:

$$GE_t = \alpha + \beta GDP_t + \xi_{it}$$

Here,  $GE_t$  and  $GDP_t$  are (the cyclical components of) government expenditure and output and  $\xi_{it}$  is the i.i.d shocks. But according to Rigobon (2004), this can create endogeneity problems and ignoring the problem can lead to highly misleading picture.

To avoid this problem to some extent, this paper uses the following panel data (unbalanced) regression equation:

$$GE_{it} = \alpha + \beta GDP_{it-1} + \gamma tax_{it-1} + \theta trade_{balance}_{it-1} + \xi_{it-1} \quad (2)$$

From this equation, the value of  $\beta$  will be estimated for two different group of countries.<sup>4</sup> Here,  $\alpha$  is the constant term,  $GE_{it}$  is the government expenditure for country  $i$  at period  $t$ ,  $GDP_{it-1}$  is the real GDP for country  $i$  at period  $t-1$ ,  $tax_{it-1}$  is the total amount of tax collected for country  $i$  at period  $t-1$ ,  $trade_{balance}_{it-1}$  is the trade balance for country  $i$  at period  $t-1$  and finally  $\xi_{it-1}$  is the error term. All the values are deflated by the GDP

<sup>3</sup> Some notable exceptions include Braun (2001), Jaimovich and Panizza (2007) and Lane (2003).

<sup>4</sup> Country classification is shown in the appendix (table A.1).

deflator and expressed in real terms. A positive value of  $\beta$  indicates a procyclicality of fiscal policy, whereas a negative value implies countercyclical behaviour. Here, tax and trade balance are used as control variables. Since government expenditure is normally decided at the beginning of the fiscal year during the annual budget, it is likely that it will depend on the previous year's total amount of GDP, tax and trade balance. That is why lagged value of these variables is used as independent variables in the regression equation. A positive value of  $\beta$  greater than one implies that general government expenditure rises (falls) more than proportionally in response to a positive (negative) shock of output. An insignificant or low value of  $\beta$  will indicate an a-cyclical fiscal policy.

Similarly, to measure the cyclicity of monetary policy, I will estimate the Taylor's rule as described in section III.2.

To measure the cyclicity of capital flows, the following panel data regression equation is used:

$$Capflows_{it} = \alpha + \beta GDP_{it} + \gamma inf_{it} + \theta intrate_{it} + \xi_{it} \quad (3)$$

Here,  $Capflows_{it}$  is the capital flow of country  $i$  in period  $t$ . Similarly,  $GDP_{it}$ ,  $inf_{it}$  and  $intrate_{it}$  are the real gdp, inflation rate and short term interest rate for country  $i$  at period  $t$  respectively.

#### IV. THE DATA

The sample of countries included in the analyses is entirely the result of data availability. Ideally, I would have included all countries, but, unfortunately, the data on the different variables were only available for a limited number of countries. The samples also vary between the different regressions. In order to explore the question of cyclicity of macroeconomic policies and capital flows, a dataset of annual frequency is used. Though it would have been interesting to use a dataset of shorter frequency to examine the cyclicity in more details and to find how cyclicity was affected in the recent economic downturn, it was not possible due to unavailability of data. The data comprises of a total of 28 Asian countries. Among those there are 11 high income, 2 upper-middle income, 11 lower-middle income and 4 low income countries. For the convenience of comparison, since there are not many countries in upper middle income and low income groups, all the countries are divided into two income groups—(a) High and upper-middle income, and (b) Lower-middle and low income group. So there are 13 countries in the former group and 15 countries in the latter. Income grouping is primarily based on the World Bank's classification in 2010. To ensure the integrity of annual data, only countries which subscribe to

International Monetary Fund's (IMF's) special data dissemination standard are included. Countries with less than 10 years of annual data are excluded. The coverage spans from as early as 1950 to as late as 2009, but varies from country to country. The main data source is the IMF's International Financial Statistics (IFS) database.<sup>5</sup>

The main variables of interest in exploring the cyclicity of fiscal policy are real government expenditure and real GDP. Though much of the literature on the cyclicity of fiscal policy has used real government expenditure (e.g., Kaminsky, Reinhart and Vegh 2004, and Alesina, Campante and Tabellini 2008), some have also used (mainly in developed countries) government consumption and combination of government consumption and investment to measure the effectiveness of fiscal policy, (e.g., Blanchard and Perotti 2002, Perotti 2004, Ilizetzi and Vegh 2008). Total central government expenditure includes various spending categories, such as government investment and transfers, but also interest payments, which makes this measure noisier. On the other hand, in terms of measuring government consumption, if we had a perfect price deflator for government consumption, cyclical changes in relative prices would not affect real government consumption. In practice, of course, we do not have such refined price indices and it is thus likely that changes in relative prices do affect measured government consumption. Moreover, data on government consumption is rare for Asian countries. That is why government expenditure as a measure of cyclicity of fiscal policy is only used.

As discussed in the earlier section, to measure the cyclicity of monetary policy, the only variable that shows an unambiguous relationship with the business cycle across all possible cyclical behaviour is the short term interest rate. But how do we measure the short term interest rate? Kaminsky, Reinhart and Vegh (2004) used the interbank rate, treasury bill rate, discount rate, lending rate and deposit rate as a proxy of short term interest rate and tried to find out the cyclicity of monetary policy for all these variables. But, unfortunately, for my sample of countries, data on all these variables are not available for all countries. That is why only one of these variables as a proxy of short term interest rate is used. The Treasury bill (T-bill) rate is used whenever possible. For rest of the countries where data on T-bill rate is not available, either discount rate, lending rate or government bond yield is used. Among all the 28 countries, T-bill rate is used for 10 countries, discount rate is used for 7 countries, lending rate is used for 6 countries and government bond yield is used for 4 countries.<sup>6</sup> For two countries (Cambodia and UAE) none of these data were available, so it was not

---

<sup>5</sup> See appendix (Table A.2) for more details of data sources.

<sup>6</sup> Details are showed in Appendix Table A.3.

possible to measure monetary cyclicity for those two countries. The Taylor's rule is also estimated to measure the cyclicity for the two groups of countries. Here, to find inflation, time series data of consumer price index (CPI) for each country is used.<sup>7</sup>

To measure the cyclical behaviour of capital flows, time series data on capital accounts is used as a proxy of net capital inflows whenever possible.

Indices of real GDP and real government expenditure were created by deflating the nominal GDP and government expenditure data by GDP deflator by using the following formula:

$$\text{Real GDP (Government Expenditure)} = \frac{\text{Nominal GDP (Government Expenditure)}}{\text{GDP Deflator}} * 100$$

The data of taxes and trade balance are also deflated using the same formula. To estimate the Taylor's rule, a variable is created which captures deviation of actual inflation from its sample average for each year. To do this, time series data of consumer price index (CPI) is collected for each country as a measure of inflation. Then calculated the average and subtracted it from the actual inflation.<sup>8</sup> To find output gap, the cyclical component of real GDP is separated from the real GDP data by using Hodrick-Prescott (HP) filter and then divided it by the actual output.

To find the state of democracy in different countries, "democracy index 2008" by *Economist Intelligence Unit* was used. This index was created by focusing on five general categories: electoral process and pluralism, civil liberties, functioning of government, political participation and political culture. According to *Economist Intelligence Unit*, the democracy index is a kind of weighted average based on the answers of 60 questions. A higher index indicates more democracy.

To find the level of corruption in different countries, "corruption perceptions Index (CPI) 2009" by *Transparency International* was used. According to *Transparency International*, 16 different polls and surveys from 10 independent institutions were used to create this index.

## V. RESULTS

---

<sup>7</sup> Except UAE, for which CPI data was not available.

<sup>8</sup> MS Excel was used to perform this task.

This section presents a visual overview of the results that came up in the search of finding the cyclical behaviour of the macroeconomic policies and capital flows. The main aim of this paper is to contrast the high and upper middle income countries from the low and lower-middle-income countries and find out how the fiscal, monetary policies and the capital flow for this two group of countries vary with business cycle. The paper has also tried to find out the same results by dividing the countries according to their geographical location rather than income. The reason for doing this is the similarities between the countries of a certain geographical area with respect to political conditions, economy and culture.

### **V.1 Fiscal Policy**

As it is clear from the discussion of the previous sections, I will try to find the cyclicity of fiscal policy in two different ways: the correlation based technique and the regression based technique.

#### ***V.1.1 Correlation based Technique***

In this procedure, I tried to find out correlation between the cyclical component of real government expenditure and real GDP for all the countries in the sample. The results are showed in appendix (Figure A.1). It is clear from the figure that 6 out of the 13 high-and upper-middle-income countries have countercyclical fiscal policy (negative correlation between the cyclical component of real government expenditure and GDP) and 7 of them have procyclical fiscal policy (showing positive correlation for the above mentioned variables).

On the other hand, only 2 among the 14 low-and lower-middle-income countries exhibit countercyclical fiscal policy and the rest exhibit procyclical policy.<sup>9</sup> On average, high and upper middle income countries exhibit a correlation of -0.0798 between (cyclical component of) real government expenditure and real GDP (though most of them have positive correlation, their magnitude of procyclicality is small, resulting in a negative correlation on average). On the other hand, the low-and lower-middle-income countries have an average correlation of 0.465021. From this, we can conclude that the high-and upper-middle-income countries follow an a-cyclical (or slightly countercyclical) fiscal policy on average and the low-and lower-middle-income countries mostly follow a procyclical fiscal policy. A result that is consistent with the previous studies.

---

<sup>9</sup> Myanmar was not considered because of unavailability of government expenditure data.

### V.1.2 Regression based Technique

In this procedure, from the panel data, the value of  $\beta$  in equation (2) is estimated for the two different groups of countries in consideration. Here taxes and trade balance I am used as control variables. The results for the high and upper-middle income countries are shown below:

Dependent Variable: Government Expenditure ( $GE_{it}$ )			
Independent Variables	Coefficient	t-value	Standard Error
$GDP_{it-1}$	<b>0.054633</b>	<b>4.003642</b>	<b>0.013646</b>
$tax_{it-1}$	0.662887	8.023107	0.082622
$trade_{balance}_{it-1}$	-0.236313	-3.296843	0.071679
R squared	0.996308		

From this table, we can see that high-and upper-middle-income countries exhibit a value of  $\beta$  equals to 0.054633 (which is statistically very significant). This low value clearly indicates an a-cyclical (or slightly procyclical) fiscal policy. The results for the low-and lower-middle-income countries are shown in the table below:

Dependent Variable: Government Expenditure ( $GE_{it}$ )			
Independent Variables	Coefficient	t-value	Standard Error
$GDP_{it-1}$	<b>0.121142</b>	<b>24.18362</b>	<b>0.005009</b>
$tax_{it-1}$	0.036194	11.01070	0.032872
$trade_{balance}_{it-1}$	-0.195315	-1.426911	0.136880
R squared	0.914770		

From the table, we can see that low-and lower-middle-income countries have a value of  $\beta$  equals to .121142 (which is also statistically very significant). This value of  $\beta$  indicates a procyclical fiscal policy.

As expected, both types of measurement of fiscal cyclicity give similar results regarding the cyclical behaviour of fiscal policy in the two groups of countries.

## V.2 Monetary Policy

In this paper, the cyclical of monetary policy is measured in three different ways: the correlation based measurement, the regression based measurement and by estimating the Taylor's rule. The results are discussed below.

### V.2.1 Correlation based Measurement

In this procedure, I tried to find out correlation between the cyclical component of short term interest rate and real GDP for all the countries in the sample. The results are shown in appendix (Figure A.2). It is clear from the figure that 10 out of the 12 high-and upper-middle-income countries follow a countercyclical monetary policy (positive correlation between the cyclical component of short term interest rate and real GDP) and only 2 countries have a procyclical monetary policy (negative correlation between the above mentioned variables).<sup>10</sup> On the other hand, 7 out of the 13 low-and lower-middle-income countries follow procyclical monetary policy and the rest follow countercyclical policy.<sup>11</sup>

On average, high-and upper-middle-income countries exhibit a correlation of 0.23467 between (the cyclical component of) short term interest rate and real GDP. On the other hand, the low-and lower-middle-income countries have an average correlation of -0.06303. From this, we can conclude that the high-and upper-middle-income countries mostly follow a countercyclical fiscal policy and the low-and lower-middle-income countries, on average, follow an a-cyclical (or slightly procyclical) monetary policy. Again, a result that is consistent with the previous studies.

### V.2.2 Taylor's Rule

As an alternative procedure, I estimate the Taylor's rule to find out the cyclical of monetary policy. Here, I run the regression of equation (1) and estimate the value of  $\beta_2$  for the two different groups of countries. For low and lower-middle-income countries, the results are shown in the table below:

Dependent Variable: Short term interest rate ( $i_t$ )			
Independent Variables	Coefficient	t-value	Standard Error
Deviations of actual inflation from its sample average ( $\pi_t - \pi$ )	0.248937	7.112602	0.265222
Output gap ( $y_t$ )	<b>0.389930</b>	<b>0.053892</b>	<b>7.235414</b>
R squared	0.156823		

<sup>10</sup> UAE was not included in the sample because of unavailability of interest rate data.

<sup>11</sup> Cambodia and Mongolia were not included in the sample because of unavailability of interest rate data.



From this we can see that for low-and low-income-countries, the value of  $\beta_2$  is statistically insignificant, which indicates an a-cyclical monetary policy. For the high-and high-income-countries the results are shown below:

Dependent Variable: Short term interest rate ( $i_t$ )			
Independent Variables	Coefficient	t-value	Standard Error
Deviations of actual inflation from its sample average ( $\pi_t - \bar{\pi}$ )	-0.034897	-0.753311	0.046325
<b>Output gap <math>y_t^e</math></b>	<b>6.593247</b>	<b>3.554033</b>	<b>1.855145</b>
R squared	0.117527		

From this table we can see that the value of  $\beta_2$  is positive and statistically significant, which indicates a countercyclical monetary policy for high and upper-middle-income countries. So, in this case, the results are similar to the results of the regression based measurement.

Some points about this result need to be mentioned. Firstly, since this estimation is based on annual data, equation (1) does not incorporate the possibility of gradual adjustments of the nominal interest rate to some target interest rate. Secondly, estimation of equation (1) does not mean to imply that every country in the sample has followed some type of Taylor's rule throughout the sample. Rather, it can be seen as a potentially useful way of characterising the correlation between a short term interest rate and the output gap once we control for the monetary authority's implicit or explicit inflation target. The a-cyclical monetary policy of the low-and-lower-middle-income countries can be rationalised in terms of neo-classical models of optimal monetary policy which calls for keeping the nominal interest close to zero. Again, the countercyclical monetary policy of the high-and upper-middle-income countries can be rationalised on the basis that increase (decrease) in the output gap calls for higher (lower) short term interest rates to reduce (boost) aggregate demand.

### V.3 Capital Flows

For measuring the cyclical behaviour of the capital flows, I looked at the correlation between the cyclical component of capital accounts (as a proxy of net capital inflows) and GDP. The results are shown in appendix (Figure A.3). Nine out of the 12 high-and higher-income countries have a countercyclical capital flows (negative correlation between the abovementioned variables).<sup>12</sup> On the other hand, 9 out of the 12 low-and lower-middle-income countries exhibit a

<sup>12</sup> Qatar was not included in the sample because of lack of data.

procyclical capital flows (positive correlation between the variables).<sup>13</sup> On average, high-and upper-middle-income countries have a correlation of -0.0798. So we can conclude that the capital flows in the high-and upper-middle-income countries are a-cyclical (or slightly countercyclical) on average. On the other hand, low-and lower-middle-income countries exhibit an average correlation of 0.18035, which indicates procyclical capital flows.

As a robustness check, the regression equation (3) is run, where capital flow is used as dependent variable and real GDP is used as an independent variable. Here, inflation rate and short term interest rates are used as control variables. For the low-and lower-middle-income countries, the results are shown below:

Dependent Variable: Capital flows ( $Capflows_{it}$ )			
Independent Variables	Coefficient	t-value	Standard Error
Real GDP ( $GDP_{it}$ )	0.463597	2.753311	0.054865
Inflation rate ( $inf_{it}$ )	2.453247	1.554033	1.655145
Interest rate ( $intrate_{it}$ )	0.345654	0.126534	1.173578
R squared	0.819836		

From the table, we can see that low-and lower-middle-income countries have a value of  $\beta$  equals to .463597, which is positive and statistically significant. This value of  $\beta$  indicates a procyclical capital flow, which is consistent with the correlation based result. For the high-and upper-middle-income countries. The results are shown below:

Dependent Variable: Capital flows ( $Capflows_{it}$ )			
Independent Variables	Coefficient	t-value	Standard Error
<b>Real GDP</b> ( $GDP_{it}$ )	<b>0.047331</b>	<b>0.730573</b>	<b>0.174509</b>
Inflation rate ( $inf_{it}$ )	1.653782	4.154183	0.755162
Interest rate ( $intrate_{it}$ )	-0.040653	-0.026588	1.943531
R squared	0.795572		

<sup>13</sup> Cambodia, Mongolia and Vietnam were not included in the sample because of lack of data.

From the table, we can see that high-and upper-middle-income countries have a value of  $\beta$  equals to .047331, which is positive but statistically insignificant. This value of  $\beta$  indicates an a-cyclical capital flow, which is again consistent with the correlation based result.

So from this result it can be seen that the capital flows in the low-income countries are procyclical in nature and do not allow them to stabilise the economy. On the other hand, higher-income countries have an a-cyclical capital flow, which is helpful for a more stabilised economy around the business cycle.

#### V.4 Fiscal Cyclicity by Geographic Location

As mentioned earlier, Asia is a huge continent with a large number of countries. There is a large variation in political, economical and cultural activities across Asia. In this section Asia is divided into three major geographical blocks: (a) East Asia (b) Middle East, and (c) South Asia. The division is shown in the appendix (Table A.1). The reason behind such geographical division is the similarities between the countries in those geographical blocks. For example, South Asia has the poorest of the Asian countries. All the four low-income countries in the sample are in South Asia and all the eight South Asian countries in the sample are either low-or lower-middle- income countries. On the other hand, 8 out of 11 high-income countries in the sample are in Middle East. These countries are similar in many respects. They are all oil rich countries and share the similar cultural background. On the other side, most of Asia's emerging market economies are in East Asia. Countries like Honk Kong, Singapore, China, and Malaysia have grown at a significant rate over the past decade and they are the newly industrialised countries. Due to these similarities between countries in each block, the fiscal cyclicity for each block is estimated using equation (2). The results are shown in the following tables:

East Asian Countries			
Dependent Variable: Government Expenditure ( $GE_{it}$ )			
Independent Variables	Coefficient	t-value	Standard Error
$GDP_{it-1}$	<b>0.304094</b>	<b>14.28592</b>	<b>0.021286</b>
$tax_{it-1}$	-0.224055	-3.069399	0.072996
$trade_{balance}_{it-1}$	-0.033502	-1.137725	0.029446
R squared	0.912968		

South Asian Countries			
Dependent Variable: Government Expenditure ( $GE_{it}$ )			
Independent Variables	Coefficient	t-value	Standard Error
$GDP_{it-1}$	<b>0.131877</b>	<b>34.82173</b>	<b>0.003787</b>
$TAX_{it-1}$	-0.272335	-0.658520	0.413555
$trade_{balance}_{it-1}$	-0.097601	-0.416850	0.234140
R squared	0.948246		

Middle-East Countries			
Dependent Variable: Government Expenditure ( $GE_{it}$ )			
Independent Variables	Coefficient	t-value	Standard Error
$GDP_{it-1}$	<b>0.056640</b>	<b>5.187336</b>	<b>0.010919</b>
$TAX_{it-1}$	0.218335	3.956071	0.055190
$trade_{balance}_{it-1}$	-0.378353	-2.320297	0.163062
R squared	0.897028		

From the tables above it is evident that the low-income South Asian countries and the emerging economies of East Asia exhibit a procyclical fiscal policy. Here the East Asian countries show a slightly more procyclical fiscal policy than the South Asian countries (value of  $\beta$  equals to 0.304094 and 0.131877 respectively). On the other hand, only the oil rich Middle East countries show an a-cyclical (or slightly procyclical) fiscal policy, with value of  $\beta$  equals to 0.056640.

## VI. EXPLAINING VARIATION IN CYCLICALITY ACROSS COUNTRIES

In this section it has been tried to give an explanation of the cyclical behaviour of fiscal policy in different countries that is revealed in the previous sections. It is evident that many countries add to macroeconomic instability by pursuing a procyclical fiscal policy. Some argue that the reason behind this is the lack of supply of credit in bad times. According to Gavin and Parotti (1997), Catao and Sutton (2002), Riascos and Vegh (2003), in bad times, many developing countries are unable to borrow. Even if they can, it requires a very high interest rate. Therefore, they cannot run deficit and have to cut spending. In booms, they can borrow more easily and choose to do so, increasing public spending. But, at a theoretical level, if the government knows that it will lose

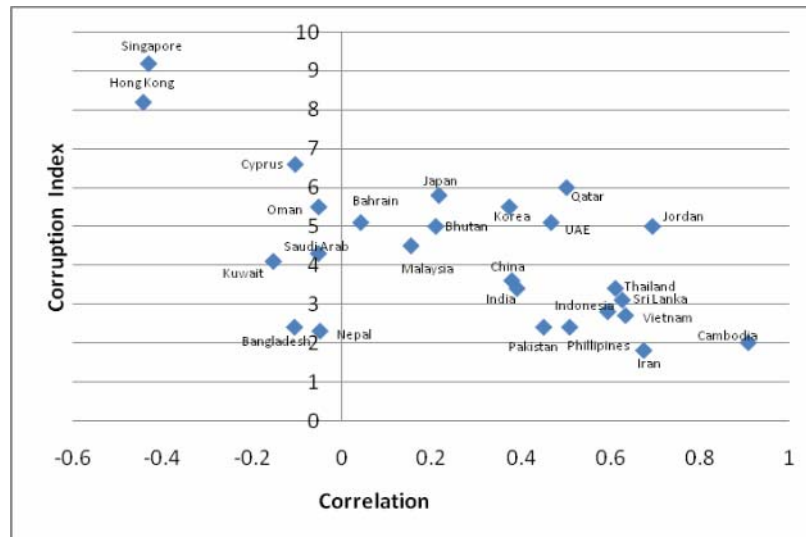
access to international credit markets during bad times, it is not clear why it would not build a buffer stock that would prevent the borrowing constraint from binding in bad times. It has been tried to look at this issue by considering 2 factors: (a) corruption and (2) democracy.

## VI.1 Corruption

### VI.1.1 Relation with Fiscal Policy

It is clear from the empirical results of this paper that many developing countries perform a procyclical fiscal policy, though it might not be an optimal policy for them. To see whether there is any relation between corruption and the procyclicality of fiscal policy, the following scatter diagram (figure 1a) is used:

**Figure 1a:** Correlation between Cyclicity of Fiscal Policy and Corruption



Here, for different countries, correlation between the cyclical component of government spending and GDP is plotted on the horizontal axis and the corruption index is plotted in the vertical axis. The corruption index is taken from the “corruption perceptions Index (CPI) 2009” by *Transparency International*. High corruption index indicates low corruption. From the figure, we can see a negative correlation between fiscal procyclicality and corruption index, which indicates a positive correlation between fiscal procyclicality and corruption. That means, the higher the corruption in a country, the more procyclical their fiscal policy is. Though *Transparency International* is publishing this index since 1995, the time series data of this index is only available for few years for most of the countries in the sample. For this reason it was not possible to run a regression

equation, rather the recent 2009 index is used and it is assumed that corruption is a variable that does not change quickly over time and cross country comparison remains relatively stable.

Why there is a positive correlation between procyclicality of fiscal policy and corruption? Procyclical fiscal policy is observed mainly in developing and low income countries and it is seen that corruption is more severe in those countries. During boom, there are large budget surpluses in those countries and their ability to run such surpluses are often hampered by the corrupt government officials. In the words of *The Economist* (1995).

The trouble is that the lure of those fat rents can be hard to resist. The upshot is routinely an outbreak of competitive rent-seeking. The power centres in any country soon notice that the profits from capturing a slice of the rent from natural resources beat those of any possible alternatives; and they act accordingly. Behind the economic jargon is a simple enough proposition: give a group of people a big pot of money and they will spend their time arguing how to share it out. . . Experience bears this out. In Mexico in the 1970s, politicians and firms battled over the state's oil revenues. So it was in Venezuela, Nigeria, and several other big oil exporting countries. Nor is the experience restricted to oil exporters. Other countries have blown the proceeds of their wealth in competitive rent-seeking: Australia and Brazil are outstanding examples."

So, when funds are readily available, and known by all to be available, it requires exceptionally strong traditions and strong-willed financial officials backed by their political leaders to maintain fiscal discipline. Apart from Mexico, Venezuela and Nigeria, Asian representative Indonesia also had a loss of fiscal control in the aftermath of the first oil shock. As seen from the results, Indonesia's procyclicality of fiscal policy is one of the highest in the sample of Asian countries and their corruption index is one of the lowest.<sup>14</sup> Similar results for some other oil rich Middle East countries (i.e., Iran, UAE) give an indication that they do not maintain their oil exporting revenue well, and their corruption in this sector might be responsible for their procyclical fiscal policy. Also, the rational managers and bureaucrats in developing countries want to import goods on which bribes are the easiest to take, not the goods that are most profitable for their countries. As it seen from the results (section IV.4), the emerging East Asian countries (which, compared to other Asian countries, have a more open economy and import in large amount) have the most procyclical fiscal policy.

---

<sup>14</sup> Correlation between government expenditure and GDP is 0.59 and correlation index is 2.8.

Mauro (1998) investigates empirically whether perceived corruption affects government expenditure, and finds evidence that it does. The only statistically significant finding is that education spending is adversely affected by corruption, but in addition he finds indications that health expenditure may also be adversely affected. These findings are supported by Gupta and Alonso-Terme (1998). Building on Mauro (1998), they argue, without presenting a formal model, that corruption is likely to affect the composition of government expenditure. They mention two main reasons for this. The first reason is the existence of rents in some sectors that motivates rent-seeking behaviour. In particular, in markets with a low degree of competition, such as the market for military equipment, large bribes will be available for government officials. The second reason is that corruption leads government officials to choose goods that have an exact value that is difficult to monitor. We should, therefore, expect to find that countries with more corruption spend relatively more on defence than those with less corruption and also have a procyclical fiscal policy.

In the sample, countries like Iran, Sri Lanka, Pakistan and Korea are well known for spending high proportion of their GDP in defence.<sup>15</sup> Yet, these countries show more procyclical fiscal policy (and also low corruption index) in the sample than other countries. This supports the findings of the above authors and partly explains the reason of the procyclicality of fiscal policy for the above mentioned countries.

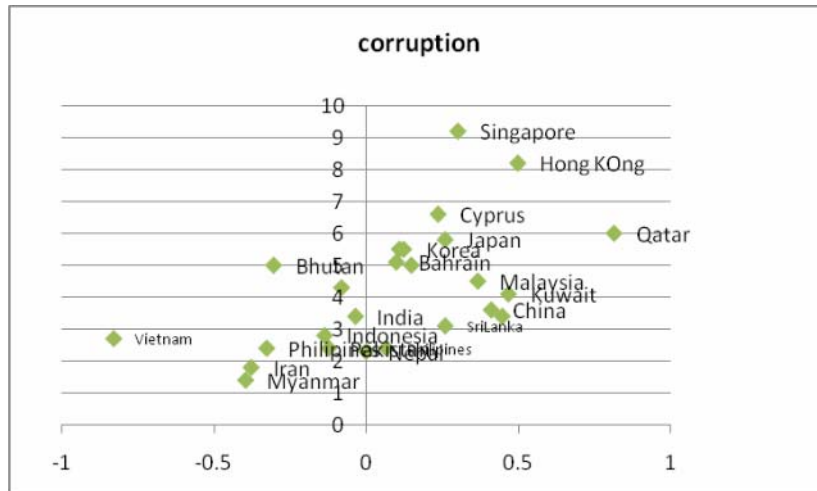
So, after a positive income shock, countercyclical policy entails a rise in the budget surplus and no change (or possibly a small increase) in total government spending. Under a corrupt government, instead, there is no change in the budget surplus and an increase in total government spending (a procyclical policy).

### ***VI.1.2 Relation with Monetary Policy***

The results of this paper show that lower income countries mostly follow a procyclical monetary policy and higher income countries follow an a-cyclical or countercyclical monetary policy. The scatter diagram below shows the relationship between monetary policy and corruption.

---

<sup>15</sup> In 2008, Pakistan, Sri Lanka and Korea spent 3.3 per cent, 3.0 per cent and 2.6 per cent of GDP in defence respectively, which is higher than the median expenditure in defence for all countries (source: World Bank). Data for Iran was not available.

**Figure 1b:** Correlation between Cyclicality of Monetary Policy and Corruption

Here, for different countries, correlation between the cyclical component of short term interest rate and GDP is plotted on the horizontal axis and the corruption index is plotted in the vertical axis. From the figure, we can see a positive correlation between monetary counter-cyclicality<sup>16</sup> and corruption index, which indicates a negative correlation between monetary counter-cyclicality and corruption. That means, the higher (lower) the corruption in a country, the more pro-cyclical (counter-cyclical) their monetary policy is.

Why there is a positive correlation between procyclicality of monetary policy and corruption? One of the reasons might be is that the most powerful people in a corrupt country normally run big businesses. It has been seen in recent years that the main earning source of politicians in the developing countries is business. Even in countries where the army or dictators are in power, ruling class has a tendency to get engaged in business in order to exploit the favourable conditions. In such situation, they are not very eager to increase the interest rate in good times so that it can be beneficial to their business. As a result, they follow a countercyclical monetary policy. As a result of the corruption, large budget deficit is also observed in developing countries. To cover this budget deficit they normally print money and increase the money supply. So in a corrupt country with a low interest rate and high money supply in good times, it is not unusual to see high inflation rates.

<sup>16</sup> Positive (negative) correlation between cyclical component of short term interest rate and real GDP indicates a countercyclical (procyclical) monetary policy.



Although there has not been notable empirical investigation on the effect of corruption on inflation directly, there could be some evidence from the studies that have focused on the political economy of budget deficit. Works of Cukierman et al (1992) and Al-Marhubi (2000) suggest that corruption brings higher inflation. Their results support the above findings.

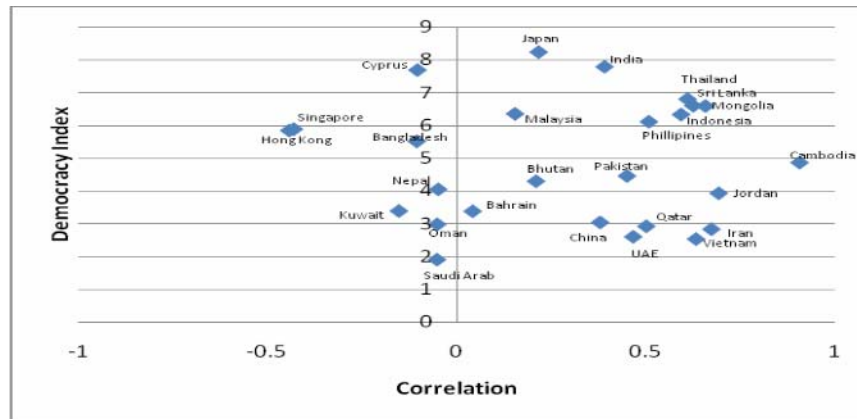
## VI.2 Democracy

### VI.2.1 Relation with Fiscal Policy

Hausken, Plumper and Martin (2004) argued that with an increase in democracy, government spending decreases. By using a model, they showed why and how political participation influences the spending behaviour of opportunistic governments that can choose an optimal combination of rents and public goods to attract political support. If the level of democracy remains low, governments rationally prefer rents as an instrument to assure political support. With increasing democratic participation, however, rents become an increasingly expensive instrument while the provision of public goods becomes more and more efficient in ensuring the incumbent government's survival in power. As a consequence, an increase in democracy tends to reduce government spending.

To see whether there are any relation between democracy and cyclicity of fiscal policy, the following scatter diagram (Figure 2a) is used.

**Figure 2a:** Correlation between Cyclicity of Fiscal Policy and Democracy



Here, for different countries, correlation between the cyclical component of government spending and GDP is plotted on the horizontal axis and the democracy index is plotted in the vertical axis. The democracy index is taken from the “Democracy Index 2008” by *Economist Intelligence Unit*. High democracy index indicates high democracy. Again, due to lack of time series

data for democracy index, it was not possible to run a regression equation. Rather I used the latest democracy index of 2008 and assumed that democracy is a variable that does not change quickly over time and cross country comparison remains relatively stable.

From the figure above, the relationship between democracy and cyclicity of fiscal policy is not clear.

Some facts regarding the countries in the sample are worth mentioning. Most of the high-income countries in the sample that exhibit countercyclical fiscal policy are oil rich countries from Middle East. These countries traditionally are not democratic and most of them have constitutional monarchy. Instead of these countries, if I had used other OECD and high income countries (which are normally democratic countries) in the sample, I might have found a positive relationship between democracy and countercyclical fiscal policy, as predicted by the Plumper and Martin (2004) model. The other high income countries in my sample show countercyclical fiscal policy (i.e., Singapore, Honk Kong) are also very high in the democracy index (as expected). Due to the unique nature of the high-income Middle-East countries compare to other high-income countries in the sample, the scatter diagram shows no significant relationship between democracy and cyclicity of fiscal policy. So we can conclude that the notion that democratic countries pursue countercyclical fiscal policy is mostly true for OECD and other high income countries (as found by previous studies), but not for Middle East.

Most of the developing countries in the sample (i.e. Indonesia, Malaysia, Philippines, India, Sri Lanka), which are also quite high in democracy index, show high fiscal procyclicality. This is very much expected. When the rational voters realise that a positive income shock has hit the economy, they demand immediate benefits in the form of tax cuts or transfers. They also want to see government doing something for the country and spending in productive sectors (i.e., infrastructure, transportation, etc). Governments also know that their staying in power depend on these people and thus it is important to satisfy them. Since the votes occur every 4-5 years, they want to spend quickly and in large amounts (sometimes more than necessary) so the results of their spending is visible in quick time and before the election. Therefore, the fact that people in developing countries like to see development rather than increasing reserves in good time forces the democratic countries to increase their spending.

On the other hand, since the high-income (and democratic) countries are already developed, their need to spend in sectors like infrastructure are limited. Thus they can make their voters happy by spending less proportion of their output compared to the developing democratic countries. That is why the fiscal

policy is less procyclical or countercyclical in those countries (i.e. Hong Kong, Singapore, Japan).

Another thing to notice that the developing countries mentioned above (i.e. Indonesia, Philippines, India, Sri Lanka, Malaysia) are not only high in democracy, but also high in corruption.<sup>17</sup> One explanation might be that when they increase their spending in good times (to make their voters happy), it also gives an opportunity to the corrupt government officials to make some money. For example, it is often seen in developing countries that when the government declares tender for some project, rather than giving it to the lowest bidding company, government officials take bribe from a company to allocate that project to that particular company. These kinds of corruptions are not always easily observed by the people, all they see is the development works! More the development works are taken by the government, the chances of this kind of corruption increases. So this supports the Alesina, Campante and Tabellini (2007)'s argument that it is the interaction of democratic accountability and corruption that leads to procyclicality, not corruption per se (nor democracy per se).

Another striking fact to notice from data of fiscal cyclicity of Asian countries is the relation between the size of the countries and fiscal cyclicity. There seems to be a positive correlation between the overall size of a country and fiscal procyclicality. The comparatively larger countries in the sample like China, India, Pakistan, Iran, Mongolia and Thailand, all show a procyclical fiscal policy (the only exception is Saudi Arabia). On the other hand, the smaller countries like Singapore, Hong Kong, Nepal, Cyprus, Bangladesh, Kuwait and Oman show countercyclical fiscal policy. One explanation for this reason might be the decentralisation of government. According to Treisman (2002), fiscal decentralisation has to do with the way tax revenues and expenditures is distributed among different government tiers. For obvious reasons, larger countries often have more decentralised government structure than the smaller countries. According to Tornell and Lane (1999), multiple power groups compete for a share in fiscal revenues during the boom. This multiple power groups can be of different types like individual ministries within the government or the executive versus congress or even individual parties within a coalition. This model of Tornell and Lane (1999) can be used to explain the procyclicality in a more decentralised economy. A more decentralised government have more "multiple power groups" to handle, and to satisfy them they often run a procyclical fiscal policy. This partly explains the positive correlation between size of a country and procyclical fiscal policy.

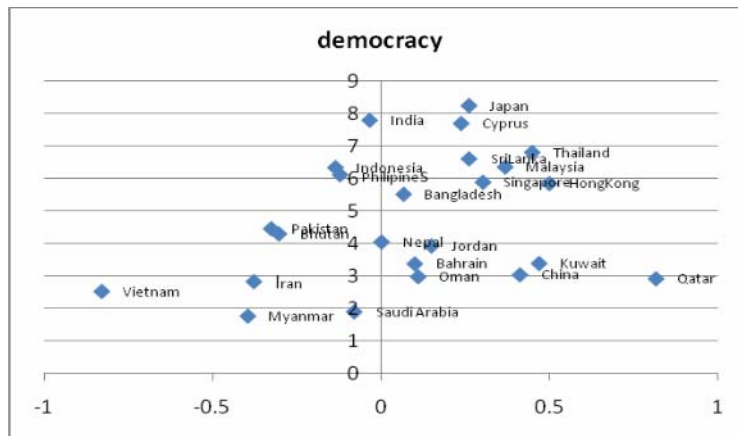
---

<sup>17</sup> All of them have democracy index above 6 and corruption index below 4.

### VI.2.2 Relation with Monetary Policy

To see whether there are any relation between democracy and cyclicity of monetary policy, the following scatter diagram is used:

**Figure 2b:** Correlation between Cyclicity of Monetary Policy and Democracy



Here, for different countries, correlation between the cyclical component of short term interest rate and GDP is plotted on the horizontal axis and the democracy index is plotted in the vertical axis. Again, from the figure above, the relationship between democracy and cyclicity of monetary policy is not clear.

If we look at the scatter diagram carefully, we can divide all the countries in the sample in two parts: countries which have higher democracy (democracy index above 5) and countries which have democracy index lower than that. Here, very few countries in the former part have procyclical monetary policy<sup>18</sup> (i.e. Indonesia, India and Philippines). On the other hand, more countries in the latter part follow procyclical monetary policy. From this it can be concluded that more democratic countries have a tendency to follow countercyclical monetary policy.

The reason behind this is not difficult to find. In democratic countries governments are accountable to their people. During good economic times following a procyclical monetary policy (i.e. lowering the interest rate) can cause the inflation rate to rise. The popularity of governments is related to inflation because it directly affects the standard of living of the people. That's why democratic governments are more careful about keeping the inflation rate under control compared to less democratic countries and thus they follow a more contractionary monetary policy in good times.

<sup>18</sup> Negative (positive) correlation between cyclical component of short term interest rate and real GDP indicates a procyclical (countercyclical) monetary policy.

## VII. CONCLUDING REMARKS

This paper studied the cyclical behaviour of the macroeconomic policies and capital flows for Asian countries and found that they are mostly procyclical in low and lower-middle income countries and mostly countercyclical for high and upper-middle income countries, a result that is similar to other studies conducted for other regions of the world. In the past, research for Asian countries was largely ignored because of difficulties, concerning data and effectiveness of the available data. Despite all these difficulties, this paper looks at the cyclicity of macroeconomic policies of Asian countries from whatever data was available. As mentioned in the introduction, Asia is going to be one of the most important continents for economic activities in the upcoming decade. That's why it was important to look at the behaviour of its economic policies. But since Asia is a large and diverse continent, the characteristics of economic activities are also different in different parts of Asia. That's why this paper also divided Asia into three major geographical areas to study their behaviour of policies. It seems procyclicality of macroeconomic policies will continue for most of the developing and underdeveloped Asian countries for some time in future, but they must find a way to conduct them in a neutral or stabilising way. Decreasing the level of corruption and establishing a more democratic and transparent government can help these countries to achieve this goal. The institutionalised checks and balances in public decision making process are also important. To do this, they might develop and increase the effectiveness of different economic zones based on geographical locations (i.e. Arab League, ASEAN and SAARC).

This paper definitely has its limitations. There are 47 countries in Asia and only 28 were considered. In this paper it was assumed that causality goes from business cycle to macroeconomic policies. But as Ilzetki and Vegh (2008) pointed out, this may not be reasonable inference all the time. In explaining the phenomenon of procyclical fiscal policy, this paper did not use any specific models and it was difficult to come to a statistically significant proof of the arguments made in section VI due to scarcity of data.

Despite all these drawbacks, this can be a useful starting point for studies regarding Asia and the insights of this paper can be used in future. It is hoped, in that future more data will be available for different fields and future studies might explore various other aspects (i.e., cyclicity of different parts of government expenditure, effect of the recent economic downturn, etc.) in details and with more refined techniques.

## REFERENCES

- Aghion, Phillipe, Philippe Bacchetta and Abhijit Banerjee.2001. "Currency Crises and Monetary Policy in an Economy with Credit Constraints." *European Economic Review*, 45:1121-1150.
- Alesina, Alberto and Guido Tabellini.1990. "A Positive Theory of Fiscal Deficits and Government Debt." *Review of Economic Studies*, 57:403-14.
- Alesina, Alberto and Guido Tabellini.2005. "Why Is Fiscal Policy Often Procyclical?" Harvard University, Harvard University and IGIER Bocconi.
- Alesina, Alberto, Felipe Campante, and Guido Tabellini. 2008. "Why is Fiscal Policy Often Procyclical?" *Journal of the European Economic Association*.
- Al-Marhubi, F. 2000. "Corruption and Inflation." *Economics Letters* 66: 199–202.
- Arreaza, Sorensen and Yosha.1998. "Consumption Smoothing through Fiscal Policy in OECD and EU countries." NBER Working Paper No. W6372.
- Bayoumi, T. and B. Eichengreen.1995. "Restraining Yourself: Fiscal Rules and Stabilization." *International Monetary Fund Staff Papers*, 42:32-48.
- Blanchard, Olivier, and Roberto Perotti. 2002. "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output." *Quarterly Journal of Economics*, 117: 1329-1368.
- Braun, Miguel.2001. Why is Fiscal Policy Procyclical in Developing Countries? Mimeo, Harvard University.
- Caballero, Ricardo J., and Arvind Krishnamurthy. 2004."Fiscal Policy and Financial Depth".NBER Working Paper No. 10532.
- Catao, Luis A. and Bennett W. Sutton. 2002. "Sovereign Defaults: The Role of Volatility." IMF Working Papers 02/149. International Monetary Fund.
- Clarida, Richard, Jordi Gali, and Mark Gertler. 1997. "Monetary Policy Rules in Practice: Some International Evidence." NBER Working Paper No. 6254.
- Cooley, T.F. and G.D.Hansen.1995. "Money and the business cycle." In: T.F. Cooley (ed.), *Frontiers of Business Cycle Research*. Princeton: Princeton University Press. pp. 175– 216.
- Corbo, Vittorio. 2000. "Monetary Policy in Latin America in the 90s." Central Bank of Chile Working Paper No. 78
- Cukierman, A., S. Edwards, G. Tabellini. 1992. "Seigniorage and political instability." *American Economic Review*, 82: 537–555.
- Flood, Robert P. and Olivier Jeanne.2000. "An Interest Rate Defense of a Fixed Exchange Rate?" IMF Working Paper No. 00/159.
- Forbes, Kristin and Roberto Rigobon.2001. "Contagion in Latin America: Definitions, Measurement, and Policy Implications." *Economía*, 1(2) Spring: 1-46.

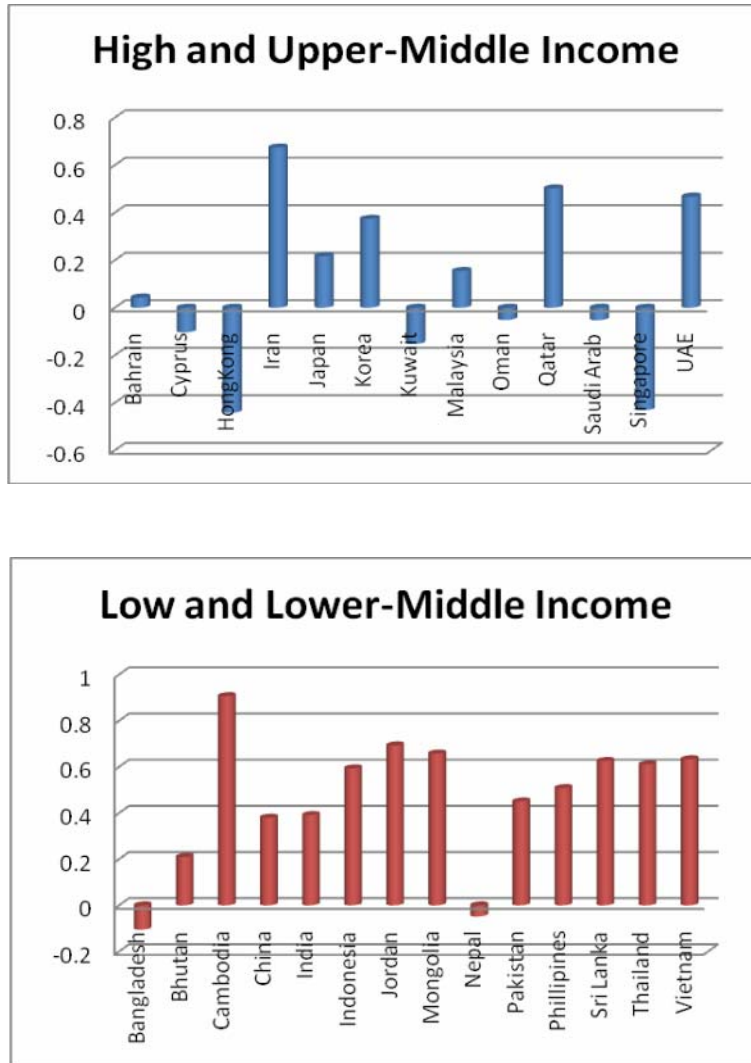
- Gavin, Michael and Roberto Perotti. 1997. "Fiscal Policy in Latin America." *NBER Macroeconomics Annual 1997*, edited by Ben Bernanke and Julio Rotemberg. Cambridge, MA: MIT Press.
- Glaeser, Edward, Rafael LaPorta, Florencio Lopez de Silanes, and Andrei Shleifer .2004. "Do Institutions Cause Growth?" *Journal of Economic Growth*, 9: 271-303
- Guerson, Alejandro.2003. "On the Optimality of Procyclical Fiscal Policy when Governments are not Credible". Ph.D. dissertation, George Washington University.
- Gupta, Sanjeev, Benedict Clements, Bernardin Akitoby, and Gabriela Inchauste.2004. "The Cyclicity of Government Spending in Developing Countries." IMF. Mimeo.
- Hausken, Cristian W. Martin and Plumper.2004. "Government Spending and Taxation in Democracies and Autocracies" *Constitutional Political Economy*, 15(3): 239-259.
- Ilzetzki, E. And C.A. Vegh. 2008. "Procyclical Fiscal Policy in Developing Countries: Truth or Fiction?" NBER Working Papers, No.14191.
- Jaimovich, Dany and Ugo Panizza. 2007. "Procyclicality or Reverse Causality?" RES Working Papers 1029, Inter-American Development Bank.
- Kaminski, Graciela, Carmen Reinhart, and Carlos Vegh.2004. "When it Rains it Pours: Procyclical Capital Flows and Macroeconomic Policies." *NBER Macroeconomic Annual 2004*, edited by Mark Gertler and Kenneth Rogoff. Cambridge, MA: MIT Press.
- Lahiri, Amartya and Carlos A. Végh.2003. "Delaying the Inevitable: Interest Rate Defense and BOP Crises." *Journal of Political Economy*, 111: 404-424.
- Lane, P. R. and A.Tornell. 1996. "Power, Growth and the Voracity Effect." *Journal of Economic Growth*, 1: 213-241.
- Lane, Philip and Aaron Tornell.1998. "Why Aren't Latin American Saving Rates Procyclical?" *Journal of Development Economics*, 57: 185-200.
- Lane, Philip. 2002. "The Cyclical Behaviour of Fiscal Policy: Evidence from the OECD." *Journal of Public Economics*, 87: 1661 75
- Lane, Philip. 2003. "Business Cycles and Macroeconomic Policy in Emerging Market Economies." Mimeo, Trinity College, Dublin.
- Lucas Jr., R.E. and N.Stokey. 1983. "Optimal Fiscal and Monetary Policy in an Economy without Capital." *Journal of Monetary Economics*, 12: 55– 93.
- Manasse, Paolo. 2005. "Pro-Cyclical Fiscal Policy: Shocks, Rules and Institutions: A View from MARS." IMF Working Papers 06/27. International Monetary Fund.
- Mauro, P. 1998. "Corruption and the Composition of Government Expenditure." *Journal of Public Economics*. Elsevier.

- Mendoza, Enrique G., and Marcelo Oviedo .2006. "Fiscal Policy and Macroeconomic Uncertainty in Developing Countries: The Tale of the Tormented Insurer". University of Maryland and Iowa State University. Mimeo.
- Moron, Eduardo and Juan Francisco Castro. 2000. "Uncovering Central Bank's Monetary Policy Objective: Going beyond the Fear of Floating," Universidad del Pacifico. Mimeo.
- Perotti, Roberto.2004. "Estimating the Effects of Fiscal Policy in OECD Countries." Working Paper 274. IGIER, Bocconi University.
- Plumper, T., and C.W. Martin.2003. "Democracy, Government Spending, and Economic Growth: A Political-Economic Explanation of the Barro-Effect." *Public Choice*, 117(1-2): 27-50.
- Riascos, Alvaro and Carlos A. Végh .2003."Procyclical Government Spending in Developing Countries: The Role of Capital Market Imperfections." UCLA and Banco Republica, Colombia.Mimeo.
- Rigobon, Roberto. 2004." Comments on .When It Rains It Pours: Pro-cyclical Capital Flows and Macroeconomic Policies." In *NBER Macroeconomics Annual*, edited by Mark Gertler and Kenneth Rogoff. Cambridge, MA: MIT Press.
- Rogoff, Kenneth and Ann Siebert .1999. "Elections and Macroeconomic Policy Cycles." *Review of Economic Studies*, 55: 1-16.
- Rogoff, Kenneth. 1990. "Equilibrium Political Budget Cycles." *American Economic Review*, 80: 21-36.
- Sorensen, B. E., L.Wu and O. Yosha. 2001. "Output Fluctuations and Fiscal Policy: US State and Local Governments 1978-1994." *European Economic Review*, 45: 1271-1310.
- Susuki, Yui .2006. "Fate for Procyclical Fiscal Policy in Emerging Economies: Role and Function of Sovereign Borrowing with Default Option." University of Michigan. Mimeo.
- Talvi, Ernesto and Carlos Vegh .2005. "Tax Base Variability and Procyclicality of Fiscal Policy." *Journal of Development Economics*, 78: 156-190.
- Talvi, Ernesto and Carlos Vegh. 2005. "Tax Base Variability and Procyclicality of Fiscal Policy." *Journal of Development Economics*, 78: 156-190.
- Taylor, John.1993. "Discretion versus Policy Rules in Practice." *Carnegie-Rochester Conference Series on Public Policy*, 39: 195-214.
- Tornell, A. and P.R Lane. 1999. "The Voracity Effect." *American Economic Review*, 89: 22-46.
- Tornell, A. and P.R. Lane. 1998. "Are Windfalls a Curse? A Non-representative Agent Model of the Current Account." *Journal of International Economics*, 44: 83-112.
- Treisman, D. 2002. "Defining and Measuring Decentralization: A Global Perspective." Unpublished paper. Available at <http://www.polisci.ucla.edu/faculty/treisman>.



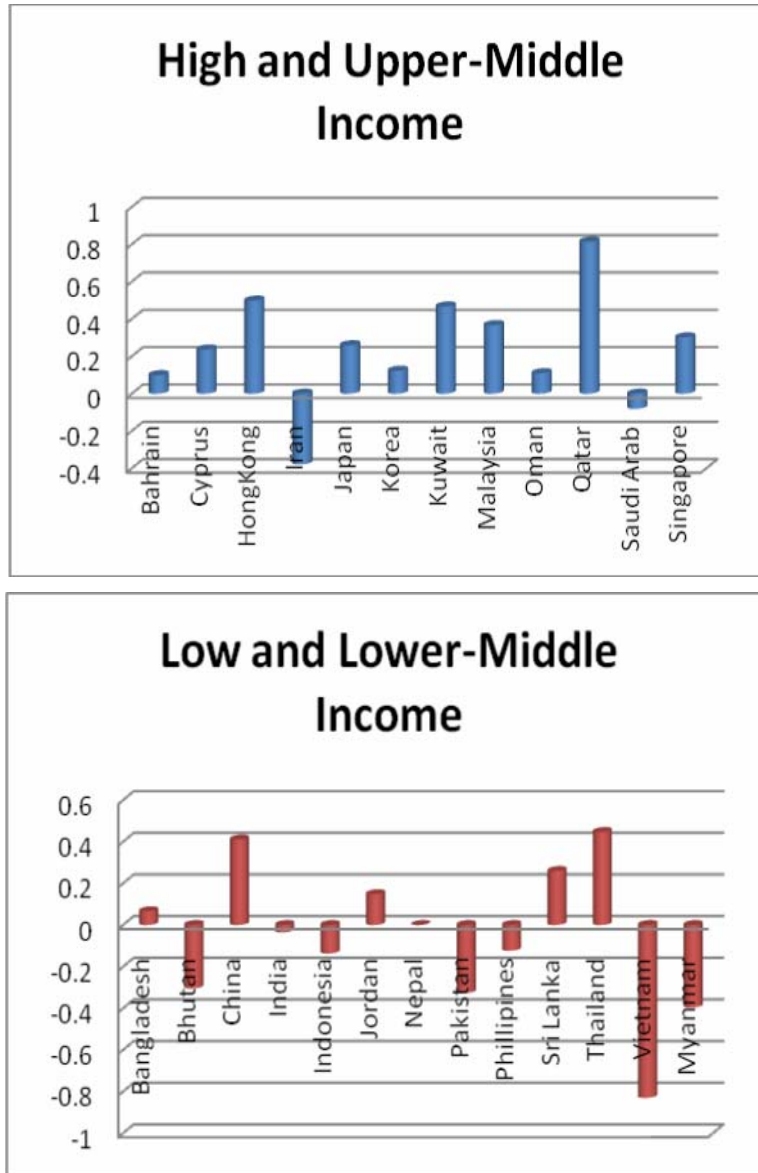
Woo, J. 2006. "Why DO More Polarized Countries Run More Procyclical Fiscal Policy?"  
*The Review of Economics and Statistics*.

## APPENDIX

**Figure 1:** Country Correlation between the Cyclical Components of Real Government Expenditure and Real GDP

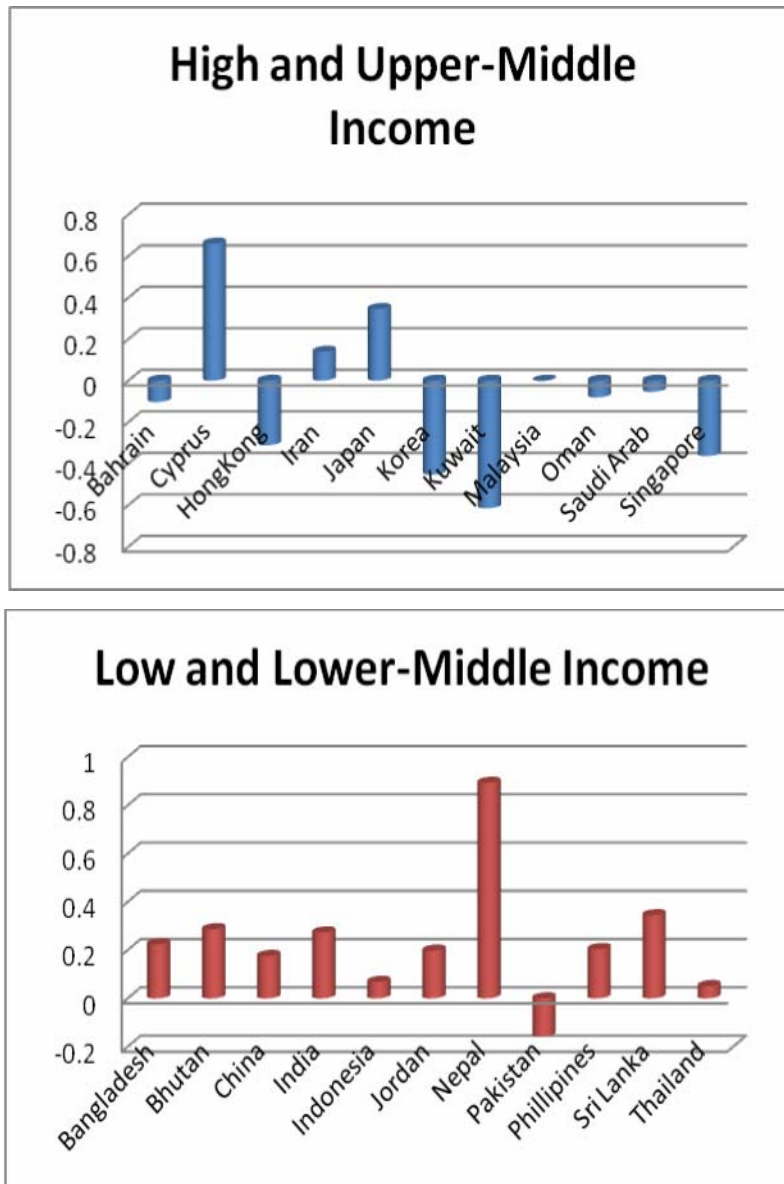
**Note:** Countries are shown in the horizontal axis and the correlation between the cyclical components of real GDP and government expenditure is shown in the vertical axis. The cyclical components have been estimated by using the Hodrick-Prescott filter. Detail data of this figure is shown in Table 4.

**Figure 2:** Country Correlation between the Cyclical Components of Short Term Interest Rate and Real GDP



**Note:** Countries are shown in the horizontal axis and the correlation between the cyclical components of real GDP and short term Interest rate is shown in the vertical axis. The cyclical components have been estimated by using the Hodrick-Prescott filter. Detail data of this figure is shown in Table 4.

**Figure 3:** Country Correlation between the Cyclical Components  
Net Capital Inflows and Real GDP



**Note:** Countries are shown in the horizontal axis and the correlation between the cyclical components of real GDP and short term Interest rate is shown in the vertical axis. The cyclical components have been estimated by using the Hodrick-Prescott filter. Detail data of this figure is shown in Table 4.

TABLE A.1  
**COUNTRIES IN THE SAMPLE**  
**TOTAL COUNTRIES: 28**

Country classification according to income

Low-Income Countries (4)	Lower-middle-Income Countries (11)	Upper-middle-Income Countries (2)	High-Income Countries (11)
Bangladesh	Bhutan	Iran	Bahrain
Cambodia	China	Malaysia	Cyprus
Myanmar	India		Hong Kong
Nepal	Indonesia		Japan
	Jordan		Korea
	Mongolia		Kuwait
	Pakistan		Oman
	Philippines		Qatar
	Sri Lanka		Saudi Arabia
	Thailand		Singapore
	Vietnam		UAE

Country classification according to geographical location

Middle-East (9)	South Asia (8)	East Asia (11)
Bahrain	Bangladesh	China
Cyprus	Bhutan	Hong Kong
Iran	Cambodia	Indonesia
Jordan	India	Japan
Kuwait	Pakistan	Korea
Oman	Nepal	Malaysia
Qatar	Myanmar	Mongolia
Saudi Arabia	Sri Lanka	Philippines
UAE		Singapore
		Thailand
		Vietnam

TABLE A.2  
DATA SOURCES

Indicator	Source	
Gross Domestic Product (GDP)	International Financial Statistics (IFS), IMF	
Government Expenditure		
GDP deflator		
Treasury Bill Rate		
Discount Rate		
Government Bond Yields		
Lending Rate		
Consumer Price Index (CPI)		
Taxes		
Trade Balance		
Corruption Perception Index (2009)		Transparency International
Democracy Index (2008)		Economist Intelligence Unit
Country Classification According to Income (2010)		World Bank

TABLE A.3  
MEASURES OF SHORT TERM INTEREST RATE USED  
FOR DIFFERENT COUNTRIES

Measures of Short term Interest Rate	Countries Used
T- Bill	Bahrain, Cyprus, Hong Kong, Malaysia, Mongolia, Nepal, Pakistan, Philippines, Singapore , Vietnam
Discount Rate	Bangladesh, Indonesia, Iran, Korea, Kuwait, Oman, Saudi Arabia
Lending Rate	Bhutan, China, Japan, Jordan, Qatar
Government Bond Yeild	India, Myanmar, Sri Lanka, Thailand

TABLE A.4  
**CORRELATION BETWEEN MEASURES OF MACROECONOMIC POLICIES,  
 CAPITAL FLOWS, BUSINESS CYCLE AND CORRUPTION AND  
 DEMOCRACY INDEX BY COUNTRY**

Country	Correlation between cyclical component of government expenditure and real GDP	Correlation between the short term interest rate and real GDP	Correlation between the cyclical component of net capital inflows and real GDP	Corruption Perception Index	Democracy Index
Bahrain (H)	0.042815	0.098922	-0.10297	5.1	3.38
Banglds (L)	-0.10504	0.065902	0.224189	2.4	5.52
Bhutan (LM)	0.21032	-0.30424	0.286434	5	4.3
Cambodia (L)	0.907026			2	4.87
China (LM)	0.379811	0.410858	0.175741	3.6	3.04
Cyprus (H)	-0.10326	0.236411	0.660303	6.6	7.7
HK (H)	-0.44217	0.498357	-0.31136	8.2	5.85
India (LM)	0.391462	-0.03509	0.273112	3.4	7.8
Indonesi (LM)	0.593603	-0.13645	0.068332	2.8	6.34
Iran (UM)	0.674026	-0.37844	0.139126	1.8	2.83
Japan (H)	0.217122	0.259612	0.345121	5.8	8.25
Jordan (LM)	0.693451	0.148206	0.198048	5	3.93
Korea (H)	0.374079	0.122714	-0.4526	5.5	
Kuwait (H)	-0.15223	0.467483	-0.6149	4.1	3.39
Malaysia (UM)	0.154812	0.367033	-0.00124	4.5	6.36
Mongolia (LM)	0.658129				6.6
Myanmar (L)		-0.39631	-0.39657	1.4	1.77
Nepal (L)	-0.04814	0.000185	0.893438	2.3	4.05
Oman (H)	-0.05107	0.109072	-0.08081	5.5	2.98
Pakistan (LM)	0.450791	-0.32699	-0.15798	2.4	4.46
Phillip (LM)	0.5087	-0.12274	0.20397	2.4	6.12
Qatar (H)	0.501866	0.814668		6	2.92
Saudi Arab (H)	-0.05174	-0.08101	-0.05412	4.3	1.9
Singp (H)	-0.4304	0.301227	-0.3631	9.2	5.89
Srilanka (LM)	0.626022	0.259771	0.344739	3.1	6.61
Thailand (LM)	0.610797	0.447278	0.050744	3.4	6.81
UAE (H)	0.467303		-0.1212	5.1	2.6
Vietnam (LM)	0.633364	-0.82989		2.7	2.53

**Note:** High “Corruption Perception Index” shows low level of corruption and high “Democracy Index” shows high level of democracy.