

Economic and Fiscal Policy Determinants of Public Deficits: The Philippine Case

By

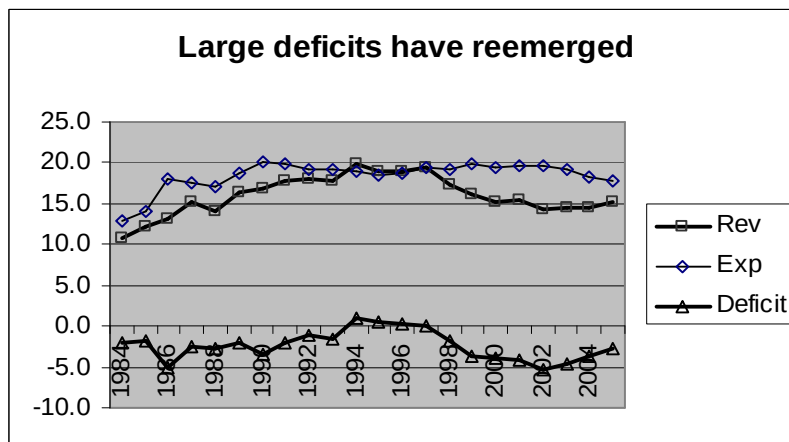
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I. INTRODUCTION

The Philippine national government experienced large and unsustainable budget deficits in the 1980s. After a brief period of near balanced budget in the mid-1990s, large budget deficits have reemerged in recent years. But unlike the heavy fiscal imbalances in the early 1980s which were caused by large investment in public infrastructure and low tax effort, the return of large fiscal deficits in recent years was accompanied by falling tax effort and underspending for education, health and public infrastructure. With deficits rising and investment in human capital and public infrastructure deteriorating, an appropriate question is: what has caused the poor fiscal performance of the Philippines in recent years? Is it the result of unfortunate events, macroeconomic shocks or misdirected fiscal policy?

Chart 1: Fiscal Performance: 1981-2005

As percent of GDP



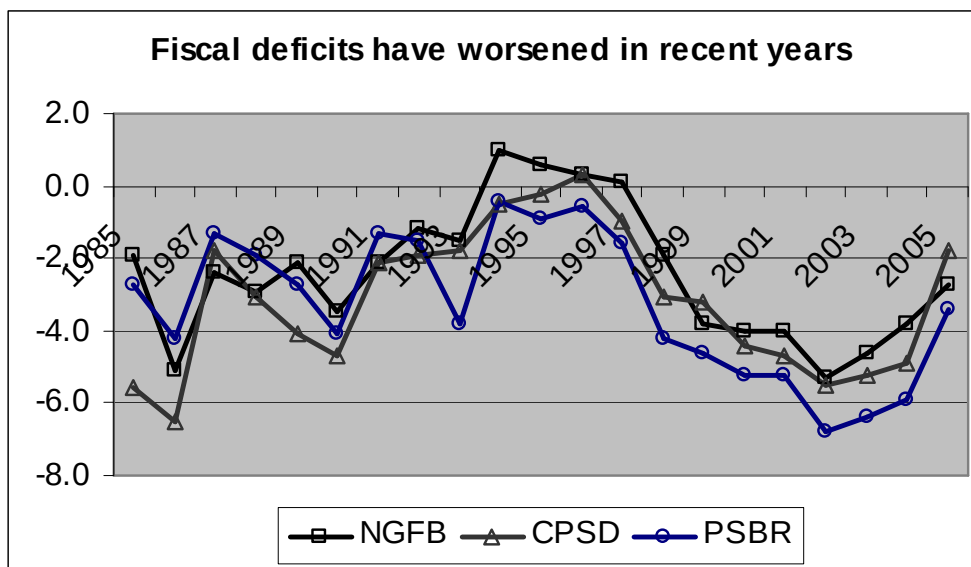
This paper estimates how macroeconomic and fiscal policy variables affect the fiscal position of the government. There are at least three possible ways of measuring the fiscal

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health of the Philippines: the national government fiscal balance (NGFB or NGAB for national government account balance), the consolidated public sector financial position (CPSFP or CPSD for consolidated public sector deficit), or the public sector borrowing requirement (PSBR). The NGFB or NGAB which measures the fiscal performance of the national government alone is the one generally understood by policymakers, the media practitioners and the general public. Among the three measures, NGAB is no doubt the narrowest and the least accurate in describing the ‘true’ fiscal position of the government. The CPSD, on the other hand, is the combined deficits of the national government, the monitored government-owned and controlled corporations, government financial institutions, local governments, and other public sector entities. CPSD is a better measure of the public sector’s true state of finances than NGFB. From the economic standpoint, PSBR is perhaps the most relevant measure of fiscal imbalance. It is the deficit of the national government and the 14 monitored corporations less the budgetary assistance to the monitored corporations in the form of equity contributions and net lending. It measures the amount the government has to borrow domestically or externally to finance the combined deficits of the national government and the monitored state corporations.

Chart 2: Deficit Measures: NGAB, PSBR, CPSFP

In percent of GDP



In the paper, two indicators of fiscal health will be used, namely: the national government account balance (NGAB) and the consolidated public sector fiscal balance (CPSF). The results of the econometric work will show that fiscal policy variables have more influence on Philippine fiscal balances compared to macroeconomic variables.

The paper is organized as follows: Section 2 presents a selected review of literature of theory of fiscal deficits, Section 3 discusses the methodology and data sources and Section 4 analyzes the results. The final section discusses some implications for policy.

II. THEORETICAL UNDERPINNINGS

What explains persistent budget deficits? What are the theoretical implications of persistent budget deficits? Theories of budget deficits run in two general directions. Some theories look at the effect of fiscal deficits on economic variables. Others look at the reverse direction, that is, what macroeconomic and fiscal variables (including budget rules and institutions) affect and determine fiscal deficits. This section gives a brief review of the theories of budget deficits with focus on both macroeconomic and fiscal policy variables.

A. How Persistent Deficits Affect the Economy

How do persistent budget deficits and large government debt affect the economy? Macroeconomic theory has divergent hypotheses regarding the implications of government deficits and debt on the economy. One strand of the literature contends that government debt reduces national saving which, in turn, crowds out capital accumulation.² Thus, government debt hinders economic growth. Another strand of the literature implies the opposite: public debt does not influence national saving or capital accumulation. This view is based on the Ricardian equivalence theorem that asserts that it is only the quantity of government purchases, not whether such purchases are financed through between taxation or borrowing, which affects the economy. This implies that economic agents are indifferent between government borrowing now or to a tax increase in the future.³ It has been shown empirically that this is not the case in the real world. In addition, when the permanent income hypothesis and the effect on consumption are considered, the Ricardian equivalence may not hold.⁴

Barro's tax-smoothing theory states that what determines the deficit is the desire of government to minimize distortions associated with raising taxes. The model implies that deficits and surpluses arise when the ratio of government purchases to output is expected to change. War and recession are times when the expected future ratio of government purchases to output is less than the current ratio. Consistent with the tax smoothing model, it has been observed that government usually run deficits during these times.⁵ This implies that when national income is low, or government purchases are large, governments run deficits.

Roubini and Sachs [1988] find only partial evidence to support tax-smoothing, wherein tax rates are set over time to minimize the excess burden of taxation. They found a

² Mankiw [2000]

³ Ibid

⁴ Romer [2001]

⁵ Ibid.

tendency for larger deficits in countries characterized by a short average tenure of government, the presence of many political parties in a ruling coalition and higher tax collection cost.

B. What Macroeconomic Variables Affect Fiscal Balance?

Inflation may affect budget deficits through various ways. The first way is through real tax revenues -- inflationary conditions reduce the real tax revenues collected by government, thus, pushing toward budget deficits. The second way is via the effect on nominal interest rates. Inflation increases the nominal interest rates and consequently debt servicing, thus increasing the budget deficit. With these two factors in mind, it may be expected that inflation negatively affects fiscal balances.⁶

However, inflation may positively affect fiscal stance by raising revenues via income tax 'bracket creep.' The US experience in the late 1970s was high federal tax receipts as a percentage of GDP in the face of high inflation rates (of approximately 10%). The explanation given by Saez [1999] and Auerbach [2000] was that the US income tax system at the time was not indexed for inflation (i.e. fixed in nominal terms), resulting in taxpayers near the top-end of a bracket to creep to the next bracket even if real income remained the same. Furthermore, if the tax system is designed to be elastic to changes in economic activity, it may be possible to have increased revenues with a boom and thus a positive influence on fiscal balance.

Easterly and Schmidt-Hebbel [1994] estimated the relationship between inflation and fiscal deficits. Across countries, the decision to print money to finance deficits (i.e. seignorage) would depend on the extent to which other means of financing are available. In their cross section estimation, they found no simple relationship between fiscal deficits leading to inflation. For case studies using time series data, revenue-maximizing inflation rates seem to rise with actual average inflation. In addition, money demand and inflation are nonlinearly related. It was found that money demand has decreasing semi-elasticity with respect to inflation. This implies that as inflation rises money demand becomes less semi-elastic. They concluded that seignorage is unimportant as a steady-state phenomenon, but it can be important as a temporary source of revenue in times of crisis. Furthermore, large surges of money creation are not closely linked to accelerated inflation. Though Easterly and Schmidt-Hebbel [1994] looked at how budget deficits affect inflation via seignorage, the opposite direction of this study, it is evident that the relationship of inflation and fiscal stance is not a simple one. The effect of inflation may be through various routes, thus making the actual relationship dependent on empirical evidence.

The level of development of the financial market is also believed to be related to fiscal performance. A more developed financial market would have more readily available forms of money to buy goods and services without incurring costs. The World Bank

⁶ Dornbush et al. [2003]

suggests that a more developed financial sector has increased flexibility in adjusting to macroeconomic shocks to prevent banking or financial crises. A measure of financial depth used by the World Bank is the ratio of liquid liabilities (i.e. broad money or M3) to GDP.⁷

Another aspect of a financially deep economy is the link between banking openness and economic growth. Bayraktar and Wang [2006] found empirical evidence that banking sector openness may directly affect growth by improving the access to financial services and indirectly by improving the efficiency of financial intermediaries, both of which reduce the cost of financing and in turn, stimulate capital accumulation. Increased investments lead to economic growth and an improved fiscal performance, implying a positive relationship.

The literature on financial openness has also hinted at a positive relationship between financial depth and fiscal balance. Financial repression, as indicated by a less liquid banking sector, is practiced by government either to finance its budget deficits or to direct its access of cheap credit to select industries, or both.⁸ Restrictive financial policy can be implemented in various ways: (1) imposing high nominal interest rate ceilings; (2) money creation (i.e. seignorage); and (3) imposing high reserve requirements.⁹ Denizler, Desai and Gueorguiev [1998] found evidence that the post-Communist governments in their study inhibit the development of financial institutions to ensure adequate flows of external capital to enterprise sectors rather than to finance deficits.

Other empirical evidence, however, has shown a negative relationship between fiscal deficit and financial market development. Woo [2001] looked at the effect of financial depth on consolidated public sector deficit in developing countries. He found that an increase in financial depth is negatively associated with fiscal stance. He explained that a more liquid banking system can more easily finance fiscal deficits by issuing bonds without having to resort to inflationary finance. Aizenman and Noy [2003] found similar evidence that a budget surplus has a negative impact on financial openness for developing countries. That is, a bigger budget deficit will increase *de facto* financial openness. This was explained by evidence that developing economies engage in pro-cyclical, rather than counter-cyclical, policy. In developing economies, financial crises tend to lead to recessions that in turn result in lower budget deficits because government reduces its spending. In addition, if the tax system is relatively inelastic to economic activity, an economic recession would lead to relatively higher tax revenues. However, in the same study, evidence of a positive relationship of fiscal balance and financial openness was found for OECD countries.

Turning to the open economy, most of the literature and studies about fiscal deficits and exchange rates have used fiscal stance as the independent variable. Easterly and Schimdt-Hebbel [1994] found robust relationships between the fiscal deficit, the trade deficit, and the real exchange rate. The fiscal deficit and the real exchange rate have a

⁷ 2005 World Development Indicators.

⁸ Mishkin [2004]

⁹ Remolona [1985]

two-step relationship: the fiscal deficit and other determinants of investment and saving behavior determine the external deficit, which then determines the real exchange rate consistent with clearing of the domestic goods market.¹⁰ Clarida and Prendergast [1999] estimated the dynamic relationship between fiscal policy and the real exchange rate in G3 countries since the advent of floating exchange rates. They found that in response to a fiscal expansion, there is, initially, an appreciation of the domestic currency. However, over time, the exchange rate overshoots and depreciates relative to the initial rate prevailing prior to the fiscal expansion shock.

The 1997 Asian financial crisis which was triggered by the collapse of the Thai baht brought about, through contagion effect, the sharp depreciation of all Asian currencies, including the overvalued Philippine peso, and an economic slowdown in the region. The combined effect of the depreciation of the peso, capital flight and decrease in economic activity contributed to the deterioration of the Philippine fiscal stance starting in 1998. The negative impact on the Philippine public finances may be attributable to three major factors: first, higher debt servicing; second, lower revenues because of slower economy and lower net taxable income of Philippine banks and other private firms; third, slowdown in economic activity which resulted in lower direct and indirect taxes. On debt servicing, over the past 25 years, foreign debt has averaged about 50 percent of total outstanding Philippine government debt.

C. What Fiscal Policy Variables Affect Budget Deficits?

Government has two main policy instruments that are used to direct the economy to a path of growth and development. First is expenditure policy that is embodied in the national budget which reflects the spending priorities of government. The second policy lever is its revenue policy or tax program. In addition, the mode of financing the deficit has an impact on future fiscal stance.

Expenditure policy

Economic growth theory emphasizes the importance of capital accumulation in the attainment of economic growth -- the higher the stock of capital the higher the level of economic output in the long-run. Governments invest in physical infrastructure in order to increase the productive capacity of an economy. Government spending on public infrastructure reduces transactions cost for businesses and signals the commitment of government to ensure profitability for prospective investors. In a study by the World Bank, Philippine investment in physical infrastructure for the year 2005 was less than 2% of GDP. This amount is considerably lower than the World Bank prescribed 5% of GDP to lead to a sustainable economic growth.¹¹

¹⁰ Rodriguez [1989] as cited in Eaterly & Schmidt-Hebbel [1994].

¹¹ World Bank [2005].

Another policy direction that is believed to have an effect on national government financial health is fiscal decentralization. The theory of local public good¹² argues that efficiency is enhanced through a process by which constituents reveal their true preferences for local public goods by ‘voting-with-their-feet,’ i.e. citizens move to the locality that offers their most preferred taxing-expenditure mix. Fiscal decentralization would allow the national government to focus on broader issues such as interjurisdictional externalities and income redistribution.

The 1991 Local Government Code of the Philippines was enacted in with the aim of creating self-reliant local government units (LGU). In theory, local authorities are believed to be more attuned to their constituents and make decisions based on the preferences of their local constituencies. Moreover, increased spending and revenue-raising responsibilities for LGUs enhances accountability. In general, there is a mismatch between revenue-raising and spending responsibilities, owing to variations in the tax base and the unequal distribution of income across LGU; this provides the rationale for intergovernmental fiscal transfers (IGFTs). In the Philippines, the IGFTs -- called internal revenue allotment (IRA) -- is largely an unconditional block grant, except for 20% which is required to be allocated to development purposes. The total IRA is 40% of all internal revenue, based on actual collections in the third preceding fiscal year. The expected relationship of IRA and fiscal balance is positive since decentralization was designed create self-reliant local governments.

Revenue policy

Tax revenue is a crucial factor in reducing the probability of persistent budget deficits.¹³ Auerbach [2003] found that the United States economic downturn, beginning in March 2001, was because of the decrease in federal government revenues rather than increased spending. About 28% of the loss in projected revenues for 2003 is attributed to new legislation, i.e. the Bush tax cut; the remaining loss in revenues is attributed to economic and technical adjustments.

One of the objectives of the study is to quantify the effect of tax reforms on fiscal balances, via tax effort.¹⁴ In the case of the Philippines, the period under study includes two major tax reforms, namely: (1) 1986 Tax Reform Program and (2) 1997 National Internal Revenue Code, or Comprehensive Tax Reform Program (CTRP). Diokno [2005] argues that while the 1986 tax reform program contributed significantly to fiscal improvements in the late 1980s and early 1990s, the 1997 CTRP was a major contributor for the progressive decline in tax effort. The peaks and troughs of tax and revenue efforts in the Philippines are shown in Chart 3 below. The 1986 tax reform program resulted in higher tax effort which peaked in 1997. Attempts were made to improve upon this tax performance by tinkering with the tax system in 1997. What came out of the legislature was a watered-down version of the original proposal. Congress failed to include the

¹² For a full discussion on this concept, see the seminal work by Tiebout [1956].

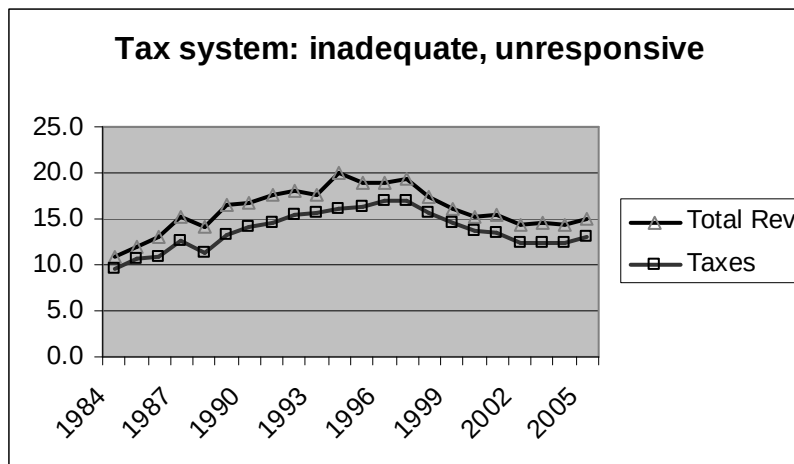
¹³ Tax effort is defined as total tax revenue as a percent of GDP.

¹⁴ Initially, regressions were run using dummy variables for each major tax reform program. However, there was a problem of multicollinearity. The tax reform dummy variables are used as instrumental variables for tax effort instead.

crucial rationalization of fiscal incentives and broadening of the value-added tax base. The reason for this unwanted outcome was the delay in the approval of the 1997 CTRP tax proposals and the subsequent posturing of politicians who were then aspiring to run in the 1998 national and local elections.¹⁵

Chart 3: Tax Effort and Revenue Effort

As percent of GDP



Financing the deficit

If revenues are inadequate to fund planned expenditures, the government has three options to finance the budget gap: borrow, print money, or increase taxes. In the past, the Philippine government has resorted to external and domestic borrowing to finance its deficits. It has amassed huge public debt not only to finance previous years' budget deficits but also to pay for losses incurred by other public sector institutions such as poorly performing government owned or controlled corporations, public financial institutions and the Central Bank (CB) but which were later assumed by the national government.

Government borrowing can crowd out investments in two ways. First, if borrowing is largely domestic, this may lead to lower investment because of less loanable funds available for private investors, and thus, to lower output and consumption in the long-run.¹⁶ Second, if debt was incurred to settle other debt rather than to finance government projects in human and physical infrastructure, then crucial public spending is being forgone. The financing of debt negatively affects important public investment spending.¹⁷ A study by the Asian Development Bank [2005] looked at the implications

¹⁵ For a more detailed comparison of the two tax reform programs, see Diokno [2005].

¹⁶ Stiglitz [2000].

¹⁷ Diokno [1995].

of the current Philippine fiscal policy on government debt. It concluded that the government debt situation is not sustainable given the current policy regime. Furthermore, it found evidence of a weak debt Ponzi game.¹⁸ This implies that the Philippine government is simply borrowing to pay off its current debts. Current government debt is vulnerable to adverse shocks and simple budgetary deficit control policy is inadequate. These considerations imply a negative relationship between debt servicing and fiscal balance.

Woo [2001], using panel data, found that debt servicing costs are insignificant determinants of fiscal deficits.¹⁹ Panel data, however, is subject to huge variations and inconsistently reported data for various countries. It is hypothesized that time-series data for the Philippines may give different results.

III. METHODOLOGY AND DATA

The objective of this section is to test the relationship of fiscal deficits and the variables discussed earlier. The estimation method is two-stage least squares method (2SLS).²⁰ Data will be culled from official Philippine government publications.²¹

A. The Regression Model

$$FB_t = \alpha_1 ECONGR_t + \alpha_2 INFLAT_t + \alpha_3 M3GDPRAT_t + \alpha_4 REER_t + \alpha_5 INTGDP + \alpha_6 CAGDP2_t + \beta X_t + \varepsilon_t$$

where t denotes the year.²²

The dependent variable, fiscal balance (FB), represents the two fiscal indicators that will be presented as a percentage of gross domestic product (GDP). First is the national government account balance (NGAB) which is defined as total revenues less total disbursements for the Philippine national government for any given fiscal year. The second measure of fiscal health is the consolidated public sector fiscal position (CPSFP). The CPSFP gives an overall view of the public sector. It is the combined surplus (deficit) of the national government, the Central Bank restructuring accounts, the major non-financial government corporations, the government financial institutions, local government units, the social security institutions (Social Security System, Government Service Insurance Systems), the Oil Price Stabilization Fund and the Bangko Sentral ng

¹⁸ A government is playing a Ponzi game when it keeps on paying old debts with new ones; see Duo Qin, et. al. [2005].

¹⁹ Woo [2001].

²⁰ Initial regressions were run using the ordinary least squares method, however, there was evident multicollinearity with several variables.

²¹ See Appendix A for a detailed description and sources of the data.

²² The benchmark regression equation is like that of Woo [2003].

Pilipinas (BSP). Separate regressions will be run with each of these as the dependent variable. In addition, regressions will be run with and without the variable Capital Outlays as percent of GDP, with a two-year lag.²³

B. Macroeconomic Variables

The model includes explanatory variables that are traditionally macroeconomic in nature. The first variable is the growth rate of real GDP (ECONGR). It is expected that increases in real GDP growth rates have a positive effect on fiscal balance.

The second independent variable is the rate of growth of the consumer price index (CPI) or the inflation rate (INFLAT). It may be either positively or negatively related to fiscal stance so this is an empirical question in the case of the Philippines.²⁴

The variable M3GDPRAT is a proxy for the level of development of the financial market. It is the ratio of liquid liabilities of the financial system (M3) to GDP. Liquid liabilities are defined as the sum of currency and deposits in the central bank (M0); plus transferable deposits and electronic currency (M1); plus time and savings deposits, foreign currency transferable deposits, certificates of deposit, and securities repurchase agreements (M2); plus travelers' checks, foreign currency time deposits, commercial paper, and shares of mutual funds or market funds held by residents.

Empirically, Woo [2003] found a significantly negative relationship between liquidity and fiscal balance. Aizenman and Noy [2003] also found a negative relationship between financial openness and budget stance for developing countries. In the latter study, a budget deficit induces financial openness. For OECD countries, they found a positive relationship, i.e. a budget deficit reduces financial openness. This study would like to establish empirically the relationship between domestic liquidity and fiscal balance.

The variable REER represents the nominal effective exchange rate of the peso adjusted for inflation rate differentials with the countries whose currencies comprise the nominal effective exchange rate basket (NEER1).²⁵ Considering that foreign debt account for about half of total outstanding government debt, it is anticipated that there is a negative relationship between real exchange rates and fiscal balance. That is, a depreciation of the real exchange rate is associated with a worsening fiscal balance.

²³ See discussion below.

²⁴ Dornbusch et al. [2003].

²⁵ Formally, $REER = NEER1 \times (\text{domestic price index} / \text{weighted price index of countries whose currencies are in the NEER1 basket})$. The Bangko Sentral ng Pilipinas (BSP) defines NEER1 as the weighted average exchange rate of the peso vis-à-vis a basket of foreign currencies (i.e. US Dollar, Japanese Yen, European Monetary Unit (Euro), British Pound) unadjusted for the effects of inflation. The reason for using the real exchange rate instead of the nominal exchange rate is to address the problem of multicollinearity detected from earlier regressions using nominal exchange rates.

C. Fiscal Policy Variables

Debt servicing is an important variable in examining an economy's fiscal position. The variable INTGDP, is defined as interest payments as percent of GDP for year t . The expected sign is negative, implying as debt servicing increases (decreases), fiscal balance worsens (improves).

Traditional growth theories have policy implications for capital stock accumulation. This study uses capital outlays as a percent of GDP, lagged by two years (CAGDP2) to quantify its effects on the fiscal balance.²⁶ Capital outlays are lagged by two years to allow for full completion of infrastructure projects. Regressions are run for the two specifications with and without CAGDP2. It is expected to be positively associated with fiscal balance.

The variable X_t represents other explanatory fiscal policy variables.

Another important policy reform that took place during the period under study was the 1991 Local Government Code that seriously promoted fiscal decentralization. Local governments were assigned more expenditure responsibilities and broader taxing powers. The intergovernmental transfer system was radically changed: the level of support was significantly increased, the allocation structure became more predictable and transparent, and the release procedure was made automatic. The allocation to each level of local governments – provinces, cities, municipalities and barangays – is determined through a formula based on population, land area and equal sharing. The aggregate national government fiscal transfers to local governments are captured by the variable, IRAEXP, defined as total internal revenue allotment (IRA) as percent of total national government spending. The contention is that, with the goal of creating self-reliant local government units, decentralization efforts have enhanced the efficiency of the delivery of public goods and services. The expected relationship is positive since LGUs have been given broader revenue-raising capabilities, somewhat relieving the national government of financial burden except for IRA.

TAXEFFORT is defined as tax revenues as a percent of GDP. It is expected to have positive relationship with fiscal balance: the higher (lower) the tax effort, the higher (lower) the fiscal balance. What is interesting is the effect of tax reforms on tax effort. The dummy variable TAXREF86 indicates the years in which the 1986 tax reform program was in force; it is formulated as 1 for all 1986 and onward years and 0 otherwise since it was not entirely repealed with the CTRP. It is expected that TAXREF86 has a positive effect on fiscal position since it is broader, simpler to implement, and more buoyant than the tax system prior to 1986. The dummy variable TAXREF97 is for the years when the CTRP is in effect. However, this variable also

²⁶ Though capital outlay is also a fiscal policy variable, the manner in which the regressions were run merit its inclusion in the general economic variables.

represents laws that were passed during the Ramos administration that resulted in the narrower tax base and reduced the tax buoyancy.²⁷

The regressions were run for both specifications (i.e. with and without CAGDP2) using the tax reform dummy variables in two ways. First, both tax reform dummy variables was used as instrumental variables for TAXEFFORT. Second, only the tax reform dummy variable for the CTRP, TAXREF97, was used as an instrumental variable. A regression for TAXEFFORT was run using both tax reform dummy variables as independent variables. The expectation is that TAXREF86 would be positively related to TAXEFFORT while TAXREF97 would be negatively related.²⁸

IV. RESULTS AND ANALYSIS

The results of the empirical estimation for both fiscal balance indicators – NGAB and CPSD -- are presented in this section.

The statistically significant determinants of NGAB are the following: inflation, domestic liquidity, capital outlays, and tax effort. On the other hand the following variables were found to be statistically insignificant: economic growth, REER, interest payment as percent of GDP, and intergovernmental grant (IRA) as percent of total government expenditures.

Inflation (INFLAT) is shown to have a positive relationship with the national government account balance (NGAB) because revenues adjust with inflation (that is, higher inflation leads to higher nominal tax base and consequently higher revenues) while expenditures are, in general, restricted to what Congress has authorized the President based on the General Appropriations Act.²⁹

Domestic liquidity (M3GDPRAT) is shown to have a negative relationship with the national government account balance. This is in line with previous findings (i.e. Woo [2003]) implying an increase in domestic liquidity is associated with an increase in the budget deficit. The availability of non-inflationary finance through more developed financial system may lead to higher (lower) budget deficit (fiscal balance).

Capital outlays as percent of GDP, lagged by two years (or CAGDP2) is positively associated with NGAB, meaning the higher the level of capital spending as percent of GDP the higher (lower) fiscal balance (budget deficit). This suggests that investments in capital projects may, in fact, improve fiscal position. A plausible explanation is that higher capital spending results to higher economic activity which then leads to higher taxable base and thus higher taxes, and finally lower deficit (or higher fiscal balance).

²⁷ See Diokno [2005] for a comparative analysis of the two tax reform programs.

²⁸ See Appendix B.

²⁹ A major exception is debt service because it is automatically appropriated. A higher inflation that leads to higher nominal interest rates may lead to result to higher aggregate expenditure.

A. National Government Account Balance (NGAB)

Table 1. Dependent Variable: NGAB as a percent of GDP

Variable	1	2	3	4
<i>Econgr</i>	0.021 (0.089)	0.111 (0.080)	0.013 (0.087)	0.108 (0.081)
<i>Inflat</i>	0.050 (0.039)	0.074** (0.032)	0.047 (0.038)	0.072** (0.032)
<i>M3gdprat</i>	-0.274** (0.107)	-0.252*** (0.079)	-0.264** (0.105)	-0.248*** (0.080)
<i>Reer</i>	-0.032 (0.047)	-0.031 (0.035)	-0.026 (0.046)	-0.029 (0.036)
<i>Intgdp</i>	-0.890** (0.400)	-0.452 (0.275)	-0.833** (0.394)	-0.438 (0.283)
<i>Cagdp2</i>	-	1.008*** (0.333)	-	0.996*** (0.338)
<i>Iraexp</i>	0.115 (0.113)	0.123 (0.087)	0.114 (0.111)	0.122 (0.086)
<i>Taxeffort</i>	1.274*** (0.259)	1.282*** (0.192)	1.231*** (0.256)	1.268*** (0.206)
<i>Taxref86</i>	IV for taxeffort	IV for taxeffort	-	-
<i>Taxref97</i>	IV for taxeffort	IV for taxeffort	IV for taxeffort	IV for taxeffort
Adjusted R ²	0.6562	0.7986	0.671	0.8003
No. of Observations	23	23	23	23

*Statistically significant at the 10-percent level, ** statistically significant at the 5-percent level, and

*** statistically significant at the 1-percent level.

IV: Instrumental variable

Tax effort (TAXEFFORT) turned out to be the most robust determinant of fiscal balance. As expected, it has a positive relationship with NGAB; that is, a higher tax effort is associated with larger fiscal surplus or lower deficit. The contribution of the 1986 tax reform program (TAREF86) to tax effort is positive and highly significant while that of the 1997 tax reform program (TAXREF97) is negative and statistically significant (see Appendix B).

Economic growth (ECONGR) turned out to be statistically insignificant which suggest that the national government's fiscal behavior during the period under study is generally invariant to the economy's growth performance. It may be argued that there might be offsetting effects at work on the revenue and expenditure sides of the fiscal equation. On the revenue side, the responsiveness of the tax system to GDP growth has increased after the 1986 tax reform program and declined after the 1997 comprehensive tax reform program. On the expenditure side, citizens do not have large entitlements such as food

subsidy or unemployment insurance, thus there is little mandatory pressure for the Government to spend more when the economy is slowing down. In fact, external pressure from external creditors and international financial institutions for the Government to pursue fiscal consolidation when the economy is slowing down effectively limits the political leaders' countercyclical spending tendency.

Real exchange rate (REER) also turned out to be statistically insignificant. This results suggest that the effect of a peso depreciation on fiscal stance is unclear, arising plausibly from offsetting effects of the peso depreciation on revenues and expenditures. The depreciation (appreciation) of the peso has positive (negative) effect on revenues through the higher (lower) peso value of imports, other things constant. On the expenditure side, the depreciation (appreciation) of the peso has negative (positive) effect on debt servicing since about half of the national government debt are from foreign sources.

B. Consolidated Public Sector Fiscal Position (CPSFP)

Table 2. Dependent Variable: CPSFP as a percent of GDP

Variable	1	2	3	4
<i>Econgr</i>	0.361** (0.161)	0.324*** (0.098)	0.288* (0.155)	0.281** (0.099)
<i>Inflat</i>	0.161 (0.107)	0.159** (0.065)	0.107 (0.103)	0.125* (0.067)
<i>M3gdprat</i>	-0.380** (0.142)	-0.297*** (0.084)	-0.283* (0.140)	-0.242** (0.088)
<i>Reer</i>	-0.155 (0.111)	-0.128* (0.064)	-0.056 (0.113)	-0.067 (0.073)
<i>Intgdp</i>	-1.569* (0.885)	-0.842 (0.513)	-0.813 (0.891)	-0.418 (0.562)
<i>Cagdp2</i>	-	1.468*** (0.350)	-	1.357*** (0.349)
<i>Iraexp</i>	0.231 (0.142)	0.175* (0.088)	0.200 (0.135)	0.160*** (0.087)
<i>Taxeffort</i>	1.509*** (0.370)	1.527*** (0.216)	1.133*** (0.381)	1.288*** (0.255)
<i>Taxref86</i>	IV for taxeffort	IV for taxeffort	-	-
<i>Taxref97</i>	IV for taxeffort	IV for taxeffort	IV for taxeffort	IV for taxeffort
Adjusted R ²	0.6987	0.8849	0.7309	0.8897
No. of Observations	18	18	18	18

*Statistically significant at the 10-percent level, ** statistically significant at the 5-percent level, and

*** statistically significant at the 1-percent level.

IV: Instrumental variable

The statistically significant determinants of the consolidated public sector fiscal position (CPSFP) are the following: economic growth, inflation, domestic liquidity, capital outlays, intergovernmental fiscal transfers (IRA) and tax effort. Two variables – economic growth and intergovernmental fiscal transfer – which were not statistically significant using the national government fiscal balance as the explanatory variable for budget deficit turned out to be significant using the consolidated public sector deficit concept.

Real GDP growth rate (ECONGR) is found to be positively associated with CPSFP, indicating economic growth may lead to a better fiscal position. The most plausible explanation for this result is that the other public sector entities – the monitored corporations, the government financial institutions, and social security institutions like the Government Service Insurance System, the Social Security System, and Philhealth, and others – perform better financially when the economy is growing and poorly when the economy is slowing down.

Intergovernmental fiscal transfers (IRA) is found to be positively associated with the consolidated public sector fiscal balance, that is, the higher the IRA, the higher the consolidated fiscal balance. The explanation is that under existing budget rules, local governments are mandated by law to generate a surplus of at least 5 percent for contingency; the higher the grant, the higher the mandated overall mandated surplus for local governments, and consequently the higher the consolidated fiscal surplus.

C. Summary of Results

First, using NGAB, the narrowest measure of fiscal balance, the statistically significant determinants are the following: inflation, domestic liquidity, capital outlays, and tax effort. On the other hand the following variables were found to be statistically insignificant: economic growth, REER, interest payment as percent of GDP, and intergovernmental grant (IRA) as percent of total government expenditures.

Second, using CPSFP, the broader measure of fiscal balance, the statistically significant determinants of fiscal balance are the following: economic growth, inflation, domestic liquidity, capital outlays, intergovernmental fiscal transfers (IRA) and tax effort. Two variables – economic growth and intergovernmental fiscal transfer – which were not statistically significant using the national government fiscal balance as the explanatory variable for budget deficit turned out to be significant using the consolidated public sector deficit concept.

Third, the negative association of domestic liquidity with fiscal balances implies that in financing the deficit, the government may opt to resort to debt financing first, rather than printing money or increasing taxes. In the Philippine context, monetizing the deficit is not a preferred option because of legal restrictions and financial limitations on the

monetary authorities (BSP). On the other hand, passing new tax laws to raise revenues has always been a difficult option politically.

Fourth, tax effort has been the most robust determinant of national government fiscal balance or the broader measure of fiscal balance (CPSFP). What is more interesting though is the exploratory regression of tax effort and the tax reform dummy variables. It is found that tax effort is positively related to the 1986 tax reform at a 1% level of significance while it is negatively associated with 1997 CTRP at the 15% level of significance.³⁰ A plausible explanation why the coefficient of the 1997 CTRP is less significant is that while major reforms initiated in 1986 such as value-added (VAT) are still in place, the VAT's effect was not as potent as before because the tax base was narrowed as a result of the 1997 CTRP.³¹

Fifth, real GDP growth rate (ECONGR) is found to be positively associated with fiscal balance using CPSFP as the explanatory variable, but insignificant if the more limited deficit concept (NGAB) is used. The results suggests that strong economic growth may lead to a better fiscal position. While the effect of economic growth on the national government deficit is unclear, its effect on other public sector entities is unequivocally positive. The monitored corporations, the government financial institutions, and social security institutions including Philhealth, local governments perform better financially when the economy is growing and poorly when the economy is slowing down.

Finally, intergovernmental fiscal transfer (IRA) is found to be positively associated with the consolidated public sector fiscal balance, though its association with the national government deficit is found to be statistically insignificant. The empirical result suggests that the higher the IRA, the higher the consolidated fiscal balance. The explanation is that under existing budget rules, local governments are mandated by law to generate a surplus of at least 5 percent to cover future contingencies; the higher the grant, the higher the mandated overall mandated surplus for local governments, and consequently the higher the consolidated fiscal surplus.

V. IMPLICATIONS FOR POLICY

Based on the foregoing results and discussion, the following implications for policy appear warranted. First, in order to arrive at more meaningful decisions, policymakers should use the broader measure of consolidated public sector fiscal position (CPSFP) rather than the narrower concept of national government account balance (NGAB) in evaluating the fiscal health of the government. The empirical results for the regression using NGAB as the dependent variable suggest that economic growth rate and intergovernmental fiscal transfers do not affect fiscal balance. But using the broader

³⁰ See Appendix B.

³¹ Diokno [2005]. The most important are R.A. 8184 An Act Restructuring the Excise Tax on Petroleum Products; R.A. 8241 Additional exemptions to value-added tax, VAT and more recently R.A. 9010 An Act Deferring the Imposition of VAT on Certain Services Imposed in R.A. 8761.

concept of CPSFP, the results suggest that economic growth rate and intergovernmental fiscal transfers are both associated with fiscal stance positively.

Second, infrastructure investment has a positive and robust influence on fiscal health. Consequently, government must prioritize spending on public infrastructure. Investment in productivity-enhancing capital projects makes private investment more productive, reduces transactions costs, and increases the profitability of private sector businesses. Regretfully, because of the shortsightedness of policymakers, spending in public infrastructure has always suffered cuts during periods of fiscal consolidation.

Finally, tax effort has been the strongest positive determinant of the Philippines' fiscal health. Public policy must be directed to improving revenue effort, not only by correcting existing weaknesses in the tax system (such, as for example, narrow tax base because of the proliferation of fiscal incentives laws), but also by improving tax administration.

Appendix A

Data description and source

<i>Variables</i>	<i>Description & source</i>
NGAB	National government account balance: total government revenues less expenditures, as a percent of GDP. Source: Fiscal Statistics Handbook (FSH), Department of Budget & Management (DBM).
CPSFP	Consolidated public sector fiscal position: NGAB plus other public sector (i.e. Central Bank (CB) restructuring accounts, major non-financial government corporations (GOCC), government financial institutions (GFI), local government units (LGU), social security institutions, the Oil Price Stabilization fund & the Bangko Sentral ng Pilipinas (BSP)), as a percent of GDP. Source: FSH, DBM
ECONGR	Growth rate of real GDP. Source: FSH, DBM
INFLAT	Inflation rate: rate of growth of the consumer price index (2000=100). Source: FSH, DBM.
M3GDPRAT	The ratio of liquid liabilities of the financial system (M3) to GDP. Source: Bangko Sentral ng Pilipinas (BSP) & FSH, DBM..
REER	REER IS the nominal effective exchange rate of the peso adjusted for inflation rate differentials with the countries whose currencies comprise the nominal effective exchange rate basket (NEER1). Formally, $REER = NEER1 \times (\text{domestic price index} / \text{weighted price index of countries whose currencies are in the NEER1 basket})$. NEER1 Is the weighted average exchange rate of the peso vis-à-vis a basket of foreign currencies (i.e. US Dollar, Japanese Yen, European Monetary Unit (Euro), British Pound) unadjusted for the effects of inflation. Source: (BSP).
INTGDP	National government debt service interest payments as a percent of GDP. Source: FSH, DBM.
CAGDP2	Two-year lag of Capital Outlay expenditures as a percent of GDP. Source: FSH, DBM.
IRAEXP	Total internal revenue allotment (IRA) for year t as a percent of GDP. Source: FSH, DBM.
TAXEFFORT	Total tax revenue as a percent of GDP. Source: FSH, DBM.
DECENT	Dummy variable indicating years in which the 1991 Local Government Code of the Philippines (LGC) is in effect, implemented in 1992.
TAXREF86	Dummy variable indicating years in which the 1986 Tax Reform Program (TRP) is in effect, implemented in 1987.
TAXREF97	Dummy variable indicating years in which R.A. 8424, the 1997 Comprehensive Tax Reform Program (CTRP), was in effect.

Appendix B
DEPENDENT VARIABLE: Taxeffort

Variable	1	2	3
Taxref86	4.468**** (0.740)	4.657**** (0.814)	4.639**** (0.817)
Taxref97	-1.101* (0.740)	-1.128* (0.754)	-1.322* (0.784)
Econgr	-	-0.046 (0.076)	-0.099 (0.095)
Inflat	-	-	-0.041 (0.044)
Adjusted R ²	0.6132	0.6007	0.5980
No of Observations	23	23	23

Level of Significance: *15%, ** 10%, *** 5%, **** 1%

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