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No. 85

Macroeconomic Effects of Fiscal Policies:

Empirical Evidence from Bangladesh,
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and Philippines

Geoffrey Ducanes, Marie Anne
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MACROECONOMIC EFFECTS OF FISCAL POLICIES: EMPIRICAL EVIDENCE FROM BANGLADESH, PEOPLE'S REPUBLIC OF CHINA, INDONESIA, AND PHILIPPINES

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PILIPINAS QUIRING, AND MOHAMMAD ABDUR RAZZAQUE**

NOVEMBER 2006

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FOREWORD

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ABSTRACT

This paper studies macroeconomic effects of fiscal policies in four Asian countries—Bangladesh, People’s Republic of China, Indonesia, and Philippines—by means of structural macroeconometric model simulations. It is found that short-term fiscal multipliers from an untargeted increase in government expenditure are positive but much less than those from an increased expenditure targeted to capital spending. The multiplier effects from fiscal expansion via a tax rate reduction are found to be typically much less than through higher spending. The effectiveness of automatic stabilizers in general, and more specifically, the effectiveness of expenditure versus tax-side stabilizers, differs across countries.

I. INTRODUCTION

With the emergence of the European Monetary Union (EMU) and the growing interest in the possibility of the same for Asia, there is a resurgent interest in the role of fiscal policy as both an expansionary and stabilization tool for government. The 1997 Asian financial crisis, which left some economies in tatters and revived discussions on pump-priming; as well as Japan's protracted experience of near-zero interest rate in a slumping economy (what has been called a liquidity trap) have also highlighted the role that fiscal policy can play. Under a monetary union, stabilizing monetary policy is unavailable to individual countries as a tool to address asymmetric or country-specific shocks. Monetary policy is also pointless in a liquidity trap.

As a result of this resurgent interest, the empirical literature on the topic is growing, employing such tools as structural macroeconomic models and (structural) vector auto regression models (VAR). At present, however, the bulk of this literature is still concentrated on countries of the EMU and Organisation for Economic Co-operation (OECD), a likely offshoot of the relative abundance of available models for these groups of countries. In contrast, there is little empirical literature on fiscal policy effectiveness for the developing countries of Asia, even as these countries are interesting for the variety of their growth experiences and the differences in the relative size of their governments.

This paper is an attempt to fill in some of the gaps. This paper studies the macroeconomic effects of fiscal policy and automatic stabilizers in four developing Asian countries—Bangladesh, People's Republic of China (PRC), Indonesia, and Philippines—by means of structural macroeconomic model simulations. The main questions posed are: How do fiscal policy shocks affect these economies on a macro scale; specifically, how do changes in the fiscal position affect economic growth? What are the transmission channels of the shocks and what are the size and dynamic path of the effects not only on gross domestic product (GDP) growth but also on its components? Which kinds of fiscal shocks have the desired property of stabilizing the macroeconomy? Once found, how effective would these automatic stabilizers be in smoothing out large cyclical downturns in these countries?

The paper is organized as follows: Section II gives a short review of the relevant literature, and describes the method of investigation. Section III contains a short summary of the macroeconomic context, including the fiscal picture, in each of the four countries considered here. Section IV discusses the simulation results. The last section concludes.

II. REVIEW OF LITERATURE AND METHODOLOGY

Discussions on the effectiveness of fiscal policy may be divided into two strands: the first strand on *discretionary policy* and the second on *automatic stabilizers*.¹ Discussions on discretionary fiscal policy typically focus on *fiscal multipliers*, which may be defined as the percent change in

¹ Formally defined, discretionary policy is the deliberate manipulation of government purchases, transfers, and taxation in the pursuit of macroeconomic goals such as growth and full employment. Automatic stabilizers are cyclically induced changes of government spending and taxes, which tend to stabilize aggregate output.

GDP associated with a 1 percent increase in the budget deficit (also known as a fiscal expansion). Discussions on automatic stabilizers typically center on their ability to dampen business cycles.

Empirical studies on fiscal multipliers can be classified into two: those employing the VAR methodology and those utilizing structural macroeconometric models. Examples of recent VAR-based studies include Blanchard and Perroti (1999), Fatas and Mihov (2001), and Mountford and Uhlig (2002). For recent studies that employ structural models, see Roeger and In't Veld (2002), Barrell and te Vede (2002), Barrell et al. (2004), and Hunt and Laxton (2003).

Most of these studies find that the fiscal multipliers are positive but small in the short run and diminish to zero in the long run due to crowding out effects. Estimates presented in Capet (2004) for the short-term multipliers range from 0.6 to 1.3 across countries in Europe. Barrell et al. (2004) find that these multipliers are typically not dependent upon whether consumers exhibit forward-looking behavior. Al-Eyd et al. (2004) find that the greater the proportion of liquidity-constrained households there are in an economy, the larger the fiscal multipliers. They also find that if classified by source of expansion, the spending multiplier is usually larger than the tax multiplier. The opposite is, however, found by Mountford and Uhlig (2002) using the VAR methodology. They obtain a multiplier of 2 for a (surprise) deficit-financed tax cut as compared to a deficit spending multiplier of only 0.5.

Discretionary fiscal policy is often criticized for the very long lag normally involved in implementing such policy, especially in comparison to the implementation of monetary policy. Significant changes in government spending have to undergo protracted bureaucratic processes such as legislative approval in most circumstances. Under this reasoning, the only feasible kind of fiscal policies are automatic stabilizers, which are cyclically induced, and the only criterion on which such policies are to be judged is their ability to dampen business cycles (e.g., see Zagler and Dürnecker 2003). The effectiveness of such policies, however, are found to depend also on the fiscal multiplier, with the higher the multiplier the better the smoothing power of the automatic stabilizers (Scharnagl and Tödter 2004). Al-Eyd et al. (2004) find fiscal stabilizers to be generally weak, as a result of typically small multipliers. Auerbach and Feenberg (2000) estimate the effect of automatic tax stabilizers to be as much as 8% of any initial shock to GDP.

In this paper, structural macroeconometric model simulations are made for Bangladesh, PRC, Indonesia, and Philippines to measure fiscal policy effectiveness. These are done for (i) *discretionary policy*, where effectiveness is measured by the size of the multipliers; and (ii) *automatic stabilizers*, where effectiveness is measured by the magnitude of an exogenous shock that fiscal policy can smooth out. The four macroeconometric models were developed at the Asian Development Bank (ADB) using quarterly time-series data. The models vary in size from 60 to 90 equations. Each model is divided into eight blocks: income and consumption, labor and employment, investment, government, foreign trade, the three sectors of GDP, price and wage, and monetary blocks (see Qin et al. 2006 and Cagas et al. 2006) for detailed description of the PRC and Philippines models, respectively.

In brief, the four models share the following properties: The behavioral equations are econometrically estimated following the so-called London School of Economics dynamic-specification approach (see, for example, Hendry 1995 and 2002), with certain long-run parameters imposed for theoretical consistency. Constancy of all parameter estimates is checked via recursive estimations, and use of dummy variables is kept at a minimum. The models exhibit good within-sample and out-of-sample forecasting ability gauged, respectively, by small root mean square percentage error and relatively narrow band of forecasts based on stochastic simulations.

The designs of the policy simulations are described below.

A. Discretionary Policy Simulations

For each country, two types of shock simulations—impulse shock and step shock—are carried out for three variations of fiscal expansion. An impulse shock refers to a 1-year shock (2006), whereas a step shock refers to a shock up to the end of the simulation period (2006–2010).

The first two variations, henceforth referred to as *Expenditure 1* (EXP 1) and *Expenditure 2* (EXP 2), involve fiscal expansion through an increase in government spending equivalent to 1 percent of GDP.² The difference in the two is in the allocation of the spending between current and capital expenditures. In EXP 1, the additional spending is assumed to follow the allocation in the most recently observed period. In EXP 2, all the additional spending is assumed to go to capital expenditures.³ In the last variation, henceforth called *Tax*, the fiscal expansion is through a reduction in the tax rate equivalent to about 1% of GDP while keeping spending fixed at the baseline level for the shock period.

In the case of impulse shocks, both the short-term and medium-term effects are measured, where short-term effect refers to the average effect for the 2-year period covering the year of the shock and the year immediately after (2006–2007), and medium-term effect refers to the average effect for the period 2008–2010. In the case of step shocks, only the medium-term impacts are calculated as the short-term effect would not differ much from that of the first case. The impacts on concerned variables are shown in terms of percent changes in the levels of those variables.

B. Automatic Stabilizer Simulations

In order to measure the effectiveness of automatic stabilizers, we use the tool of alternative equations for the relevant government variables.⁴ Two stabilizers are simulated: one on the government expenditure and another on the tax revenues. For the expenditure stabilizer, the expenditure equation is respecified for the simulation period to indicate an automatic increase (reduction) in total government expenditure as a result of a decline (increase) in GDP growth. For the tax stabilizer, on the other hand, the tax equation is respecified so that the tax rate automatically falls (rises) when GDP growth falls. In both cases, the magnitude of the change in the relevant fiscal tool is assumed proportional to the decline in GDP. Next, three exogenous demand shock scenarios on GDP are simulated separately, each representing a negative shock measuring 5% of GDP for 1 year (2006): (i) via consumption, (ii) via investment, and (iii) via exports. The effectiveness of expenditure and tax stabilizers is measured by comparing the benchmark scenario in which the alternatively specified equations of the automatic stabilizers are deactivated to where they are activated.

Following Scharnagl and Tödter (2004), let Δy be the difference in *GDP without demand shock* and *GDP with shock and with the stabilizer deactivated*; let Δy_s be the difference in *GDP without shock* and *GDP with shock but with stabilizer activated*. The effectiveness of a stabilizer can then be defined as:

² Operationally, it is 1 percent of GDP of the previous quarter.

³ This is to allow for endogenous growth model type effects, where a distinction is drawn between productive and nonproductive expenditures (see, for example, Barro 1990, Zagler and Dürnecker 2003).

⁴ The models are simulated using WinSolve (see Pierse 2001). The software allows for alternative formulations of the same structural equation, which can be deactivated in default forecasting.

$$stab_y = \frac{\Delta y - \Delta y_s}{\Delta y} \quad (1)$$

A value of unity indicates complete smoothing $\Delta y_s = 0$, whereas a value of zero indicates no smoothing at all $\Delta y = \Delta y_s$; a negative figure indicates a deterioration instead of a smoothing effect $\Delta y < \Delta y_s$.

An alternative measure of the effectiveness is through a comparison of the shock-induced output variances between the cases of *activated versus deactivated automatic stabilizers*. Specifically, let σ be the standard deviation of *GDP with shock and with the stabilizer deactivated* and let σ_s be the difference in *GDP with shock and with stabilizer activated*. We then have:

$$stab_\sigma = \frac{\sigma - \sigma_s}{\sigma} \quad (2)$$

As in (1), a value of unity indicates complete smoothing $\sigma_s = 0$, whereas a value of zero indicates no smoothing at all $\sigma = \sigma_s$; a negative value indicates an increase in output variability $\sigma < \sigma_s$.

In the context of the experiments, assuming a relatively large negative demand shock on output, equation (1) appears to be the more relevant than equation (2) as the definition of smoothing out. The stabilizer, as much as possible, should push GDP back up to its previous level before the shock, which implies a value for equation (1) close to unity. In contrast, a positive value for equation (2) is consistent with GDP at much lower levels than before the shock, as it is only concerned with variability.

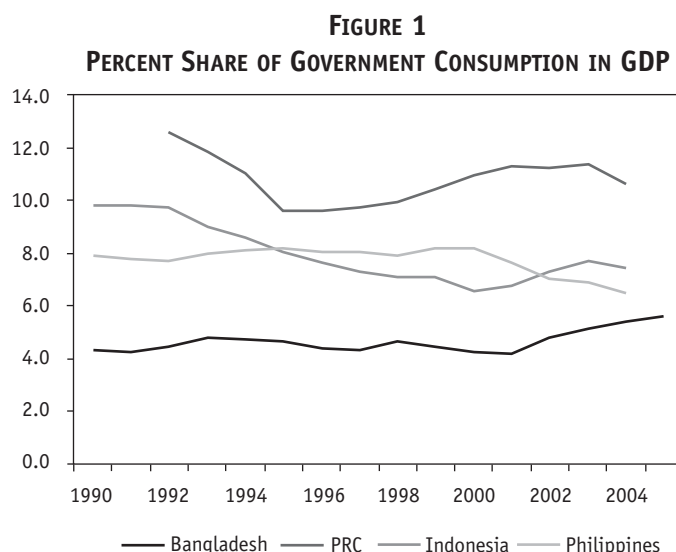
III. MACROECONOMIC CONTEXT

The four countries considered here vary in terms of macroeconomic experiences as well as in terms of the size and activity of the government. Indonesia and the Philippines have been heavily affected by the Asian crisis, whereas Bangladesh and the PRC were hardly affected. Bangladesh has been growing at a consistent pace of around 5% since the 1990s (Table 1). The PRC has been growing at around 10% annually for the last one-and-a-half decades. Indonesia suffered a massive double-digit decline in output at the height of the crisis but has since recovered and has been growing at a rate 4–5% since then. The growth of the Philippines has been boom and bust, enduring near-zero growth during the Asian crisis and averaging a low growth of 2.8% annually for the 1990s as a whole, and again suffering a huge decline in output growth in 2001 as a result of a political crisis. Recently, its economic growth has been hovering between 4–6% per annum.

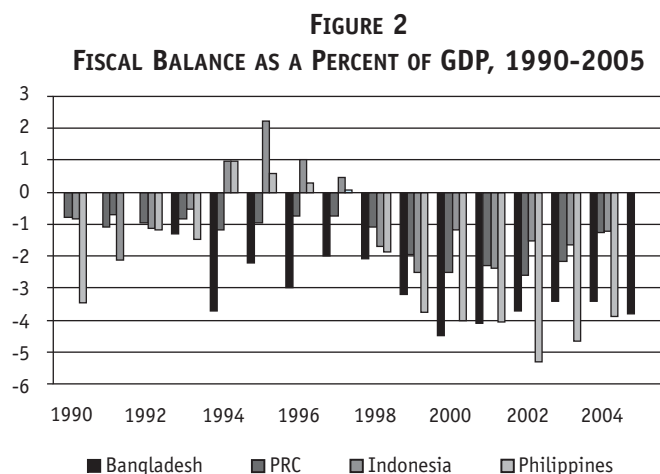
TABLE 1
GDP GROWTH RATE: BANGLADESH, PRC, INDONESIA, AND PHILIPPINES,
1990–2005 (PERCENT)

COUNTRY	1990–1999 (AVERAGE)	2000	2001	2002	2003	2004	2005
Bangladesh	4.8	5.9	5.3	4.4	5.3	6.3	5.4
PRC	10.0	8.4	8.3	9.1	10.0	10.1	9.9
Indonesia	4.3	4.9	3.8	4.4	4.9	5.1	5.6
Philippines	2.8	4.4	1.8	4.4	4.5	6.0	5.1

In terms of the size of government consumption, the PRC is the largest and Bangladesh the smallest of the four countries (see Figure 1). The share of government consumption to GDP is around 11% in the PRC, 8% in Indonesia and the Philippines, and only 4% in Bangladesh. One may wish to add government investment in this consideration, which is around 3% of GDP in the PRC, 3% in Indonesia (but was about 7–9% pre-crisis), and 6–7% in Bangladesh.⁵



The four countries have had histories of incurring fiscal deficits, as shown in Figure 2. Fiscal deficit as a percentage of GDP has been largest in the Philippines, where in the last six years it has averaged more than 4%, followed by Bangladesh, where the deficit ratio has averaged more than 3% in the same period. In the PRC and Indonesia, the fiscal deficit ratio has been around 2% in this decade.



In both Bangladesh and the Philippines, contributing to the deficit and high debt levels are the low household saving rates, as well as the losses incurred by state-owned enterprises. The PRC has a very active fiscal policy, resulting partly from its fixed exchange rate that constrains its use of

⁵ In the Philippines national income accounts data, investment data is not disaggregated between the contributions of the private sector and government.

monetary policy. In recent years, it has tried to scale back fiscal stimulus by curbing infrastructure programs and limiting the deficit to about 2% of GDP. Most of Indonesia's fiscal problems stem from the Asian crisis, which left the Indonesian government saddled with a huge amount of debt, primarily due to the recapitalization of the failed banking system. As is true also for the Philippines, the depreciation of its currency during the crisis raised substantially the burden of servicing its external debt. In recent years, as its economy recovers, Indonesia's fiscal position has also been improving. The Philippines has recently instituted tax reforms that seek to improve its fiscal position.⁶

IV. EMPIRICAL RESULTS

A. Discretionary Fiscal Policy

Tables 2 and 3 report the results of a one-year (impulse) fiscal expansion shock for the short and medium terms, respectively.⁷ Table 4 presents the results over the medium term of a permanent (step) fiscal expansion shock.

In the case of an untargeted *impulse* fiscal spending shock (*Exp 1*), the short-term GDP multipliers for the four countries range from 0.22 to 0.40, with the highest observed in Bangladesh. There is some evidence that Bangladesh has a much higher level of liquidity constraint relative to the other three countries (see Godquin and Sharma 2005), and this may account for its higher short-term multiplier (see Al-Eyd et al. 2004). A fiscal expansion targeted to capital formation (*Exp 2*) has significantly higher multipliers of 0.74 for the Philippines, 0.76 for Indonesia, 0.79 for Bangladesh, and 1.57 for the PRC. The very large value for the PRC is consistent with recent finding in Qin, Cagas, He, and Quising (2006) that government budgetary investment plays a key role in encouraging investment fever in the PRC. The short-term multipliers of a fiscal expansion through tax reduction (*Tax*) vary more widely, from a low 0.03 for the Philippines to a high of 0.44 for the PRC.

In general, the results are consistent with the postulate that the spending multiplier is higher if targeted to productive expenditures such as investment (e.g., see Barro 1990, and Zagler and Dürnecker 2003). They also conform to the findings for other countries that the spending multiplier is typically larger than the tax multiplier (e.g., see Capet 2004).

Over the medium term (Table 3), for untargeted spending, there is complete or near-complete crowding out for Bangladesh, Indonesia, and Philippines, whereas in the PRC the multiplier is actually higher than in the short term. For targeted spending, the multiplier is the highest for the PRC, followed by the Philippines, and then Indonesia and Bangladesh, with the last case being negative but almost insignificant. The case for the PRC is within expectation. In the case of the Philippines, the country has been starved of investment and the economy as a whole is seen to benefit significantly from a greater level of capital expenditure by the government (Paderanga 2001).⁸ In

⁶ For more description of the fiscal position of the Philippines, see the recent study by Qin, Cagas, Ducanes, Magtibay-Ramos, and Quising (2006).

⁷ The shocks are applied in each of the four quarters of 2006. Because many variables adjust only after some lag, the short term was defined to cover not only the year of the shock but also the year immediately after, or 2006–2007. In other words, the short-term effect is the average effect over the 2-year period. The medium term was defined to cover the period 2008–2010, and the medium-term effect is the average effect over the 3-year period.

⁸ The share of capital expenditures in total expenditures has declined precipitously over the past two decades for the Philippines, from about a quarter of the total in the 1980s to single-digit levels in recent years. This is taken to indicate a serious underspending in physical infrastructure (Paderanga 2001).

TABLE 2
SHORT-TERM FISCAL MULTIPLIERS: IMPACT ON GDP OF AN INCREASE (DECREASE) IN
GOVERNMENT EXPENDITURE (TAX) BY 1% OF GDP FOR 1 YEAR

COUNTRY	EXP 1	EXP 2	TAX
Bangladesh	0.40	0.79	0.13
PRC	0.29	1.57	0.44
Indonesia	0.22	0.76	0.16
Philippines	0.27	0.74	0.03

Note: Short-term is defined as year contemporaneous with the shock and the year after, i.e., 2006–2007.

TABLE 3
MEDIUM-TERM FISCAL MULTIPLIERS: IMPACT ON GDP OF AN INCREASE (DECREASE) IN
GOVERNMENT EXPENDITURE (TAX) BY 1% OF GDP FOR 1 YEAR

COUNTRY	EXP 1	EXP 2	TAX
Bangladesh	–0.05	–0.02	–0.05
PRC	0.59	3.83	0.06
Indonesia	0.02	0.19	–0.03
Philippines	0.00	1.36	0.09

Note: Medium-term is defined as the period from 2008–2010.

TABLE 4
MEDIUM-TERM FISCAL MULTIPLIERS: IMPACT ON GDP OF A *PERMANENT* INCREASE
(DECREASE) IN GOVERNMENT EXPENDITURE (TAX) BY 1% OF GDP

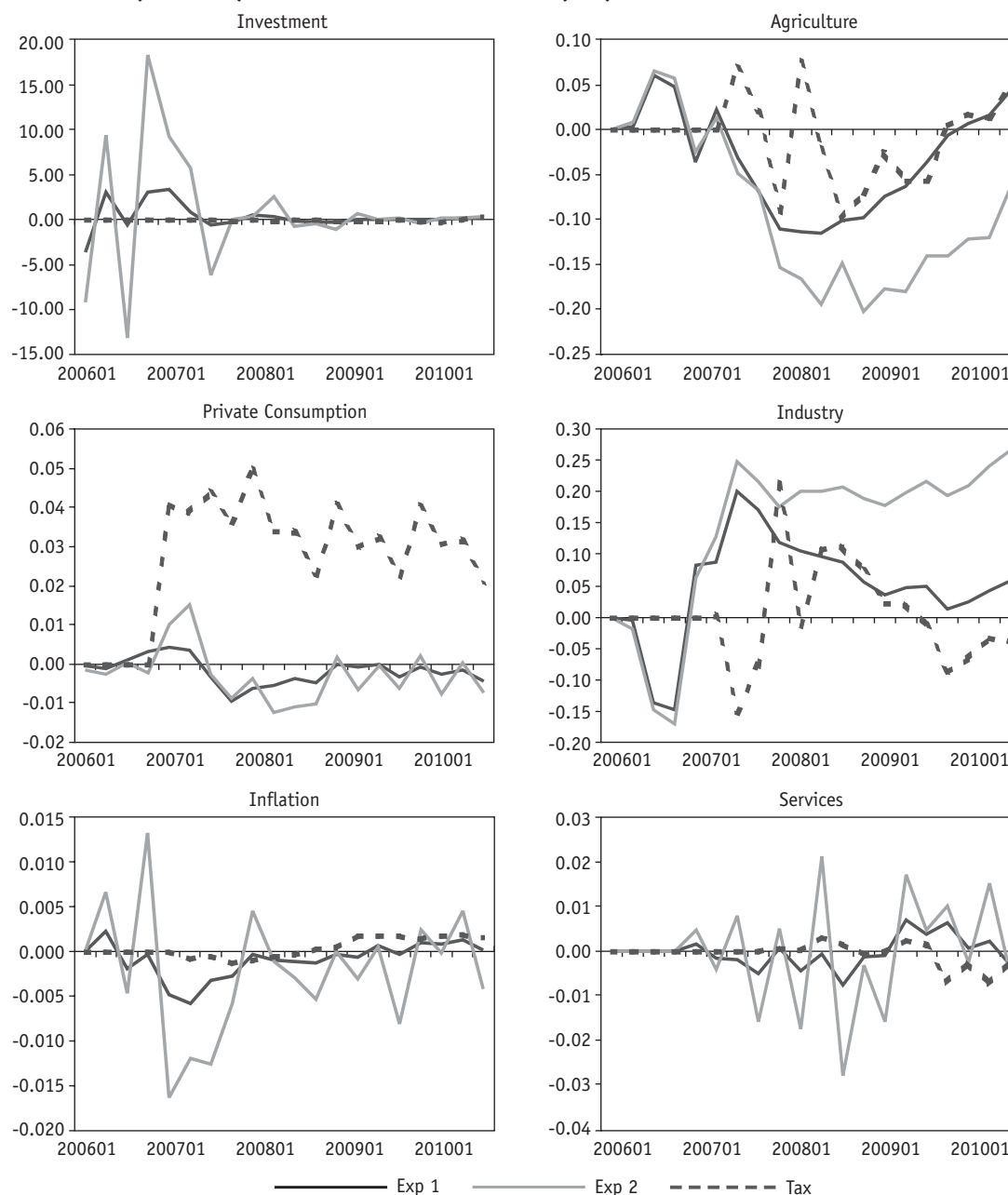
COUNTRY	EXP 1	EXP 2	TAX
Bangladesh	0.74	2.07	0.16
PRC	1.91	12.87	1.03
Indonesia	0.59	2.13	0.61
Philippines	0.55	4.47	0.27

Note: Medium-term is defined as the period from 2008–2010.

the case of Bangladesh, there is a serious concern about the quality of public capital expenditure. A large proportion of what is reported as capital expenditures is actually recurrent expenditure, and hence should not be considered as investment. Furthermore, it has been argued that weak governance significantly reduces the efficacy of capital expenditures in the country (World Bank and ADB 2003, CPD 1997). In the medium term, the multiplier of a tax reduction declines to very low levels for Bangladesh, PRC, and Indonesia, and rises, but only slightly, for the Philippines.

Figures 3 to 6 show the impact of the fiscal expansion on the major components of GDP as well as on inflation for each of the four countries over the duration of the simulation period. The figures show that in general, the short-run positive impact of higher fiscal spending, whether targeted or not, occurs mainly through investment on the demand side and the second sector

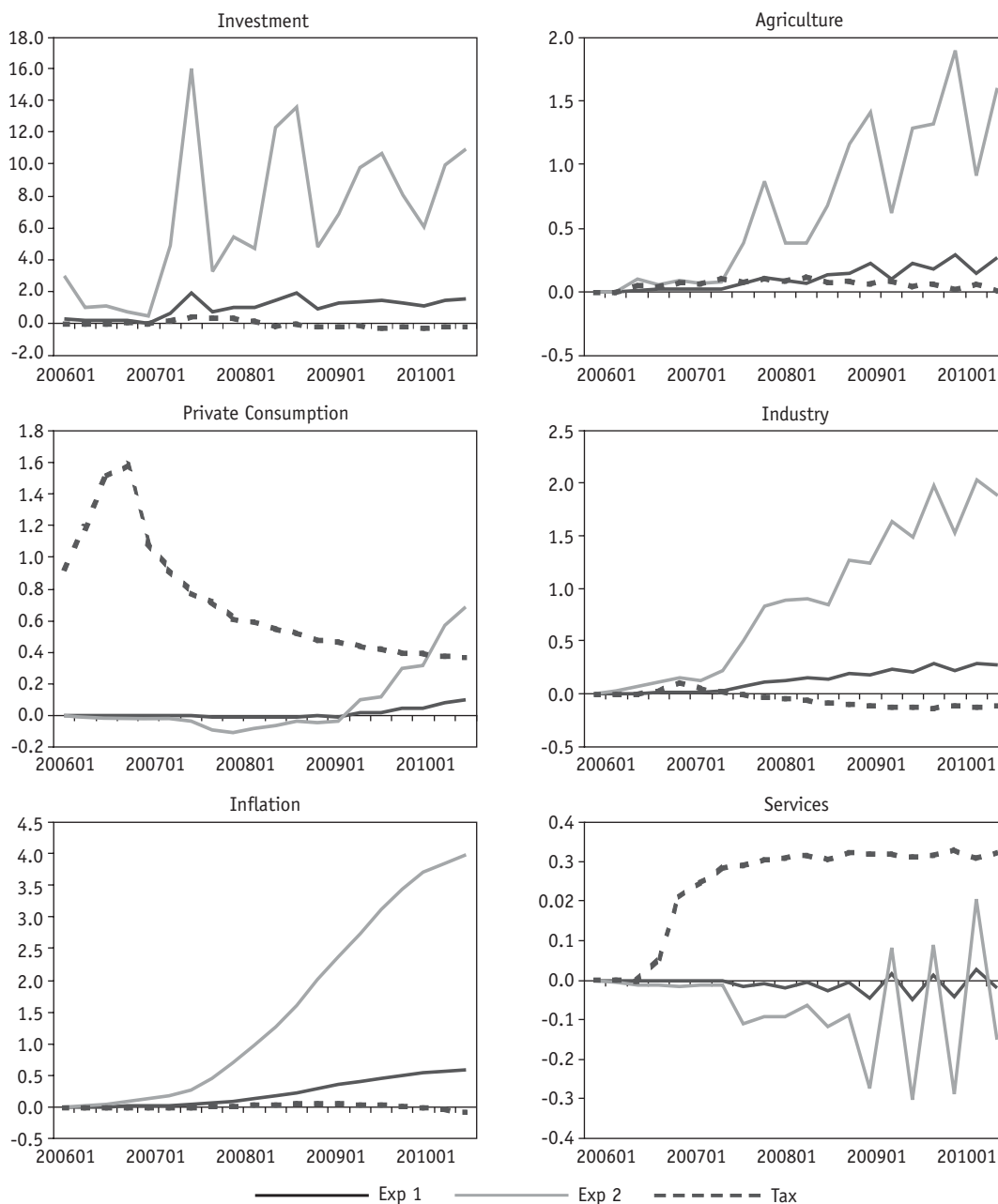
FIGURE 3
BANGLADESH: IMPACT ON GDP COMPONENTS AND INFLATION OF AN INCREASE (DECREASE) IN GOVERNMENT EXPENDITURE (TAX) BY 1 PERCENT OF GDP FOR 1 YEAR



Note: Figures are in percent changes in own variables.

output on the supply side. On the other hand, a tax reduction affects output primarily through private consumption and the tertiary sector output. It is worth noting from Figure 4 that while targeted fiscal expansion raises the PRC's output markedly, it also raises inflation significantly—by about 4% at the end of the simulation period. This reflects from another angle the earlier point

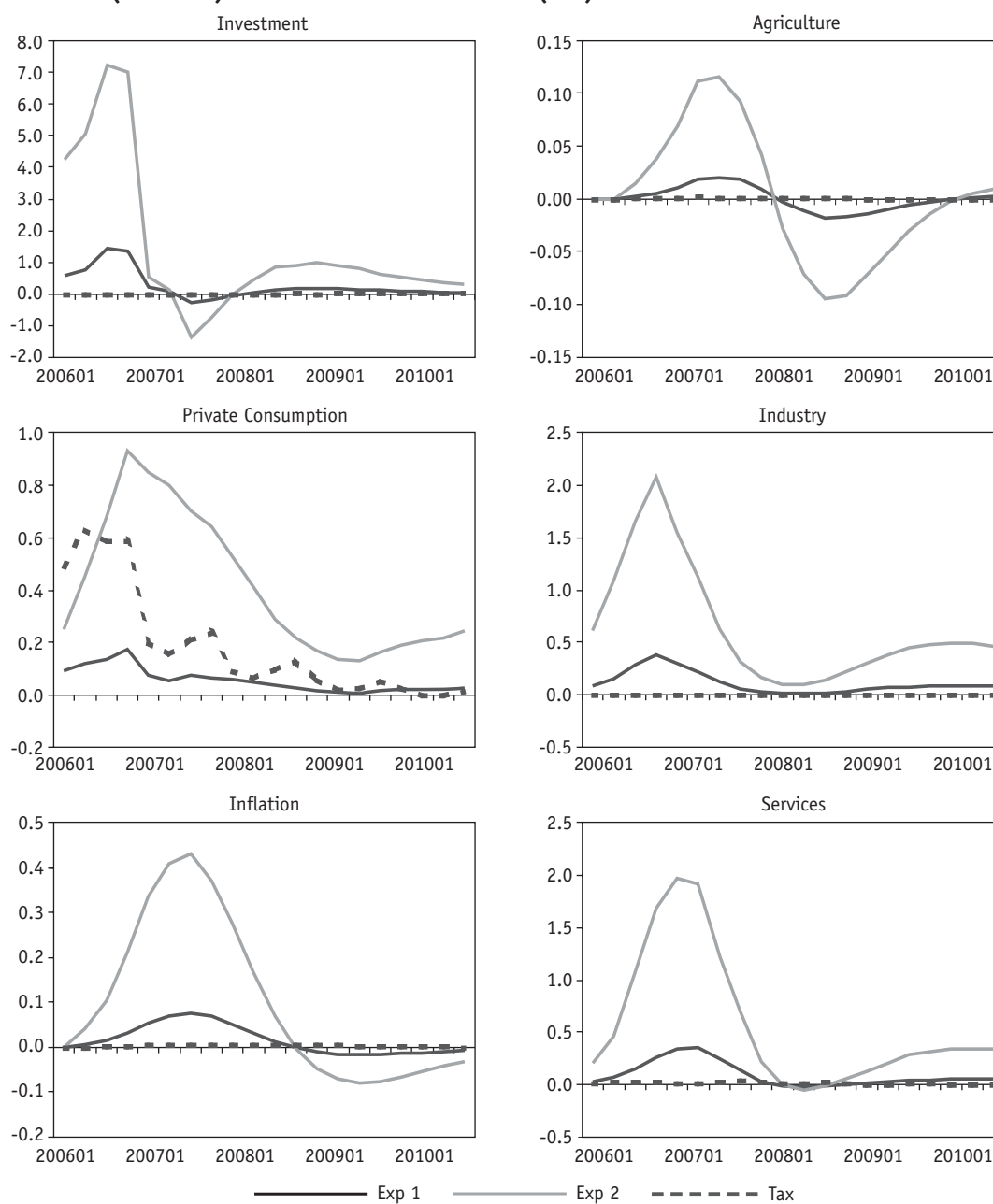
FIGURE 4
PEOPLE'S REPUBLIC OF CHINA: IMPACT ON GDP COMPONENTS AND INFLATION OF AN INCREASE (DECREASE) IN GOVERNMENT EXPENDITURE (TAX) BY 1 PERCENT OF GDP FOR 1 YEAR



Note: Figures are in percent changes in own variables.

that increasing government investment encourages overinvestment in the PRC. Such a significant inflationary impact is not observed in the other countries, indicating that government-led investment is still far from saturated in these countries.

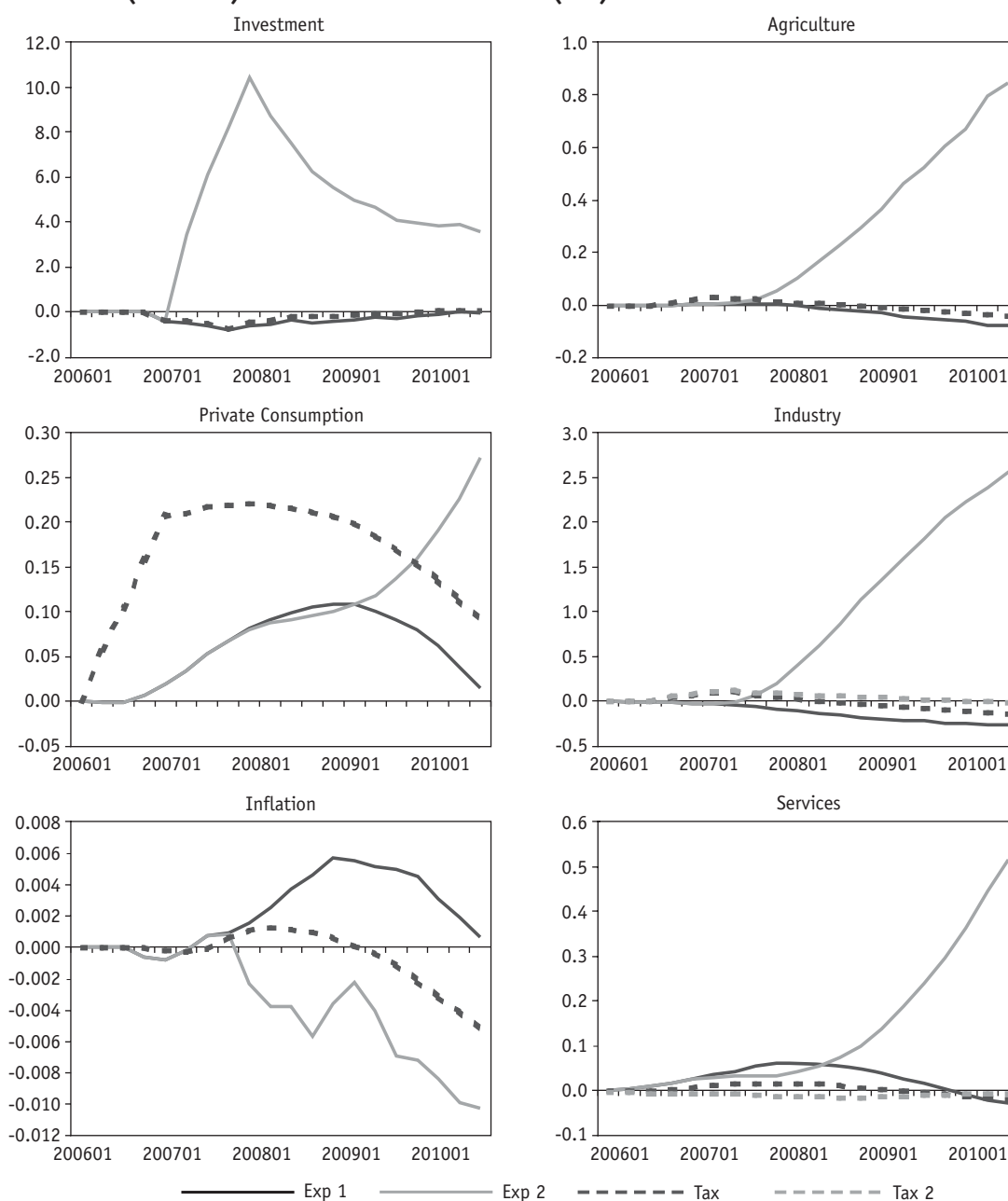
FIGURE 5
INDONESIA: IMPACT ON GDP COMPONENTS AND INFLATION OF AN INCREASE
(DECREASE) IN GOVERNMENT EXPENDITURE (TAX) BY 1 PERCENT OF GDP FOR 1 YEAR



Note: Figures are in percent changes in own variables.

In the case of *step* shocks, Table 4 shows that, other than in the PRC, the untargeted spending multiplier and the tax multiplier are less than unity. On the other hand, the targeted spending multiplier is very high particularly for the PRC and the Philippines. Figures 7 to 10 show the dynamic

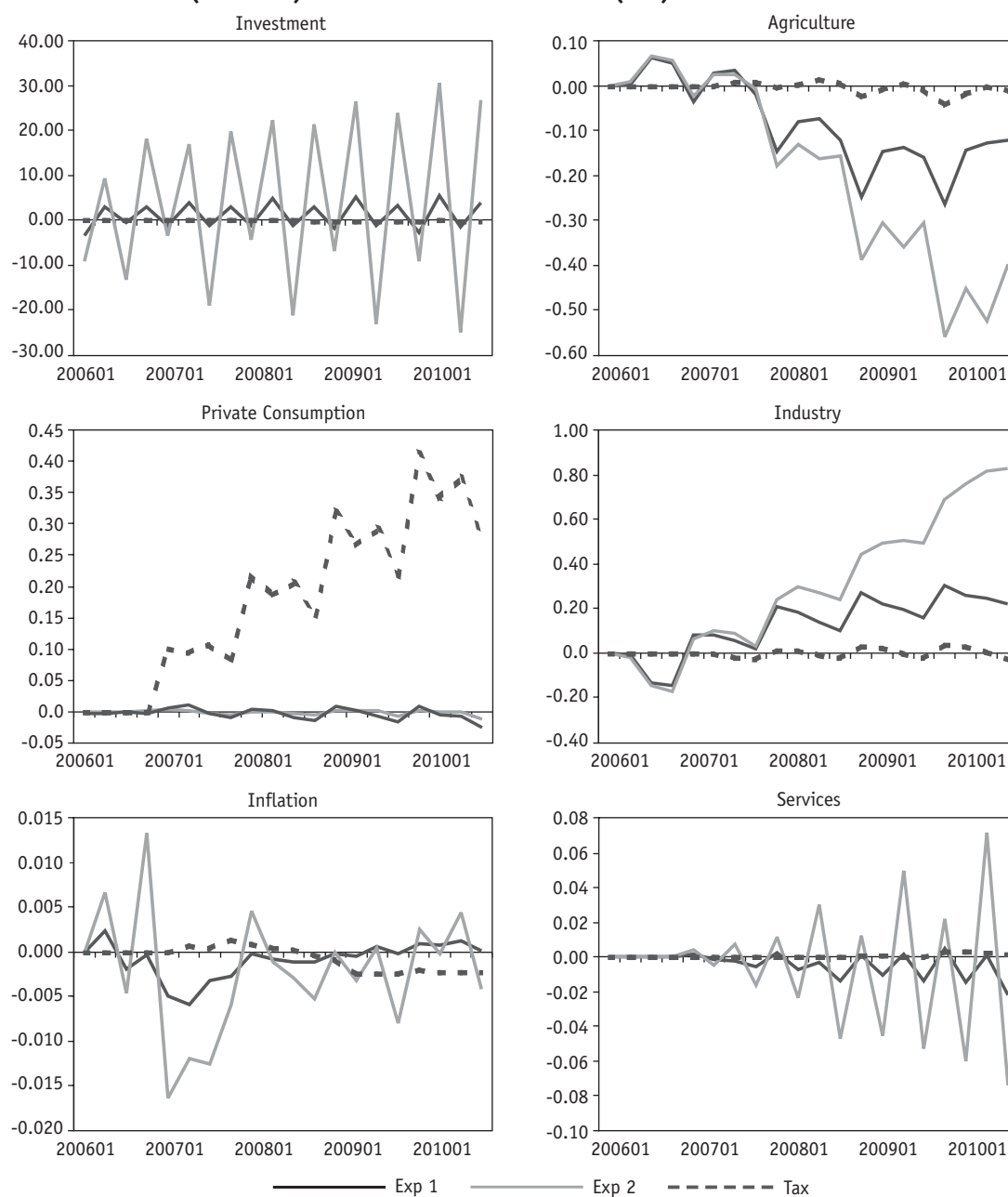
FIGURE 6
PHILIPPINES: IMPACT ON GDP COMPONENTS AND INFLATION OF AN INCREASE
(DECREASE) IN GOVERNMENT EXPENDITURE (TAX) BY 1 PERCENT OF GDP FOR 1 YEAR



Note: Figures are in percent changes in own variables.

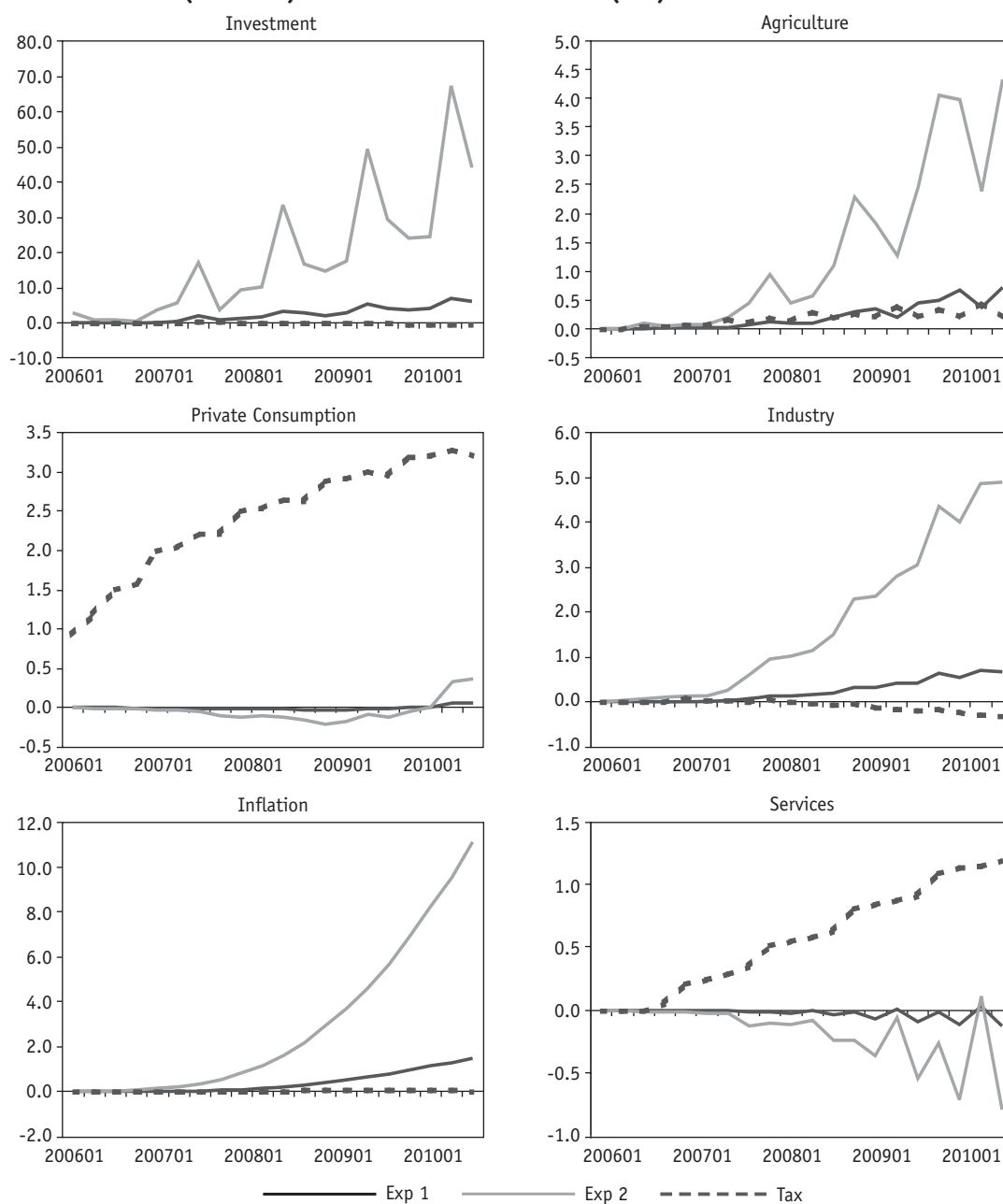
effect on the major components of GDP and on inflation as well for each of the four countries. Again, it is worth noting that in the case of the PRC, the additional growth puts a lot of strain on inflation, to the tune of an additional 11% by the end of the simulation period, and rising.

FIGURE 7
BANGLADESH: IMPACT ON GDP COMPONENTS AND INFLATION OF A PERMANENT INCREASE (DECREASE) IN GOVERNMENT EXPENDITURE (TAX) BY 1 PERCENT OF GDP



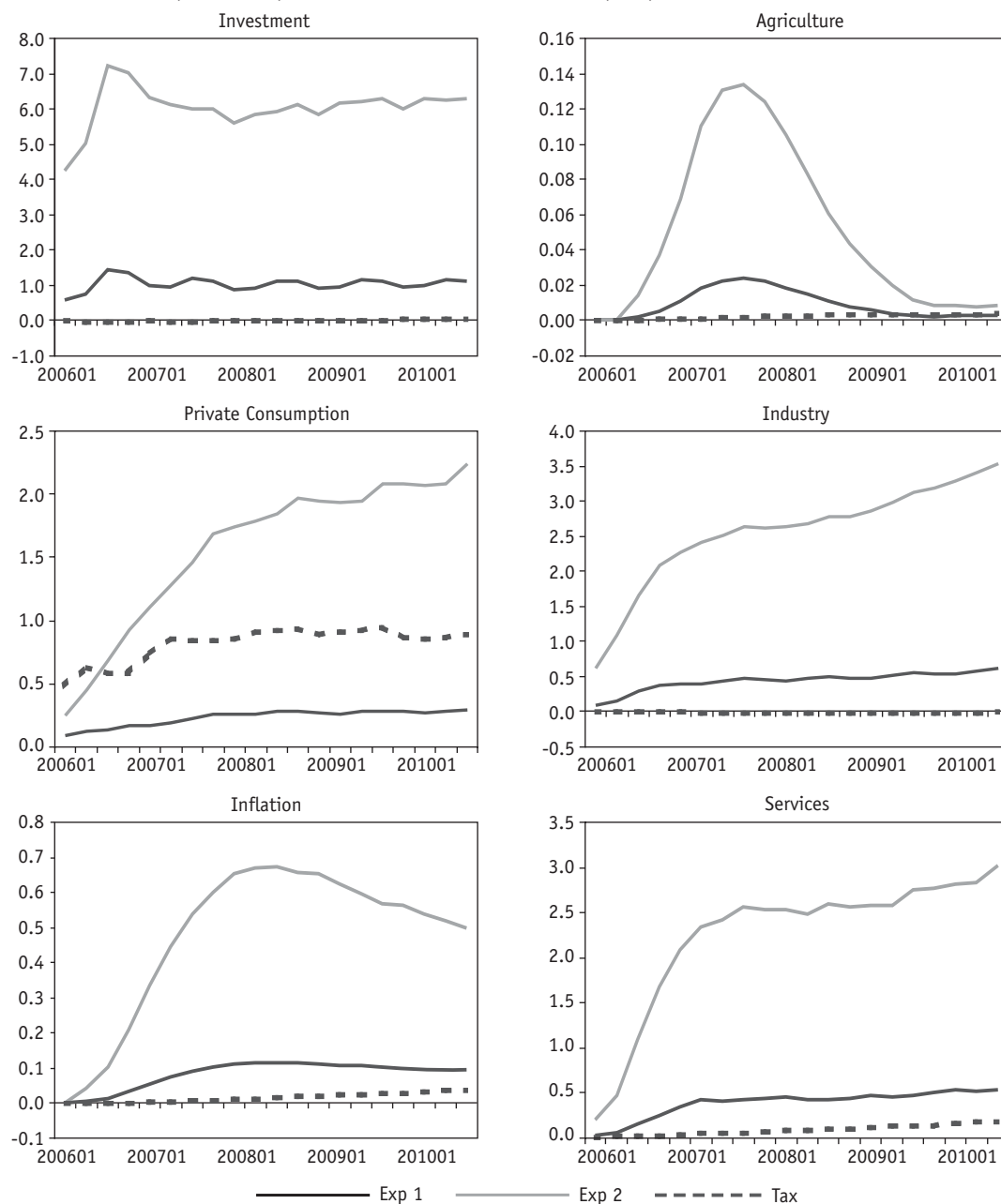
Note: Figures are in percent changes in own variables.

FIGURE 8
PEOPLE'S REPUBLIC OF CHINA: IMPACT ON GDP COMPONENTS AND INFLATION OF A PERMANENT INCREASE (DECREASE) IN GOVERNMENT EXPENDITURE (TAX) BY 1 PERCENT OF GDP



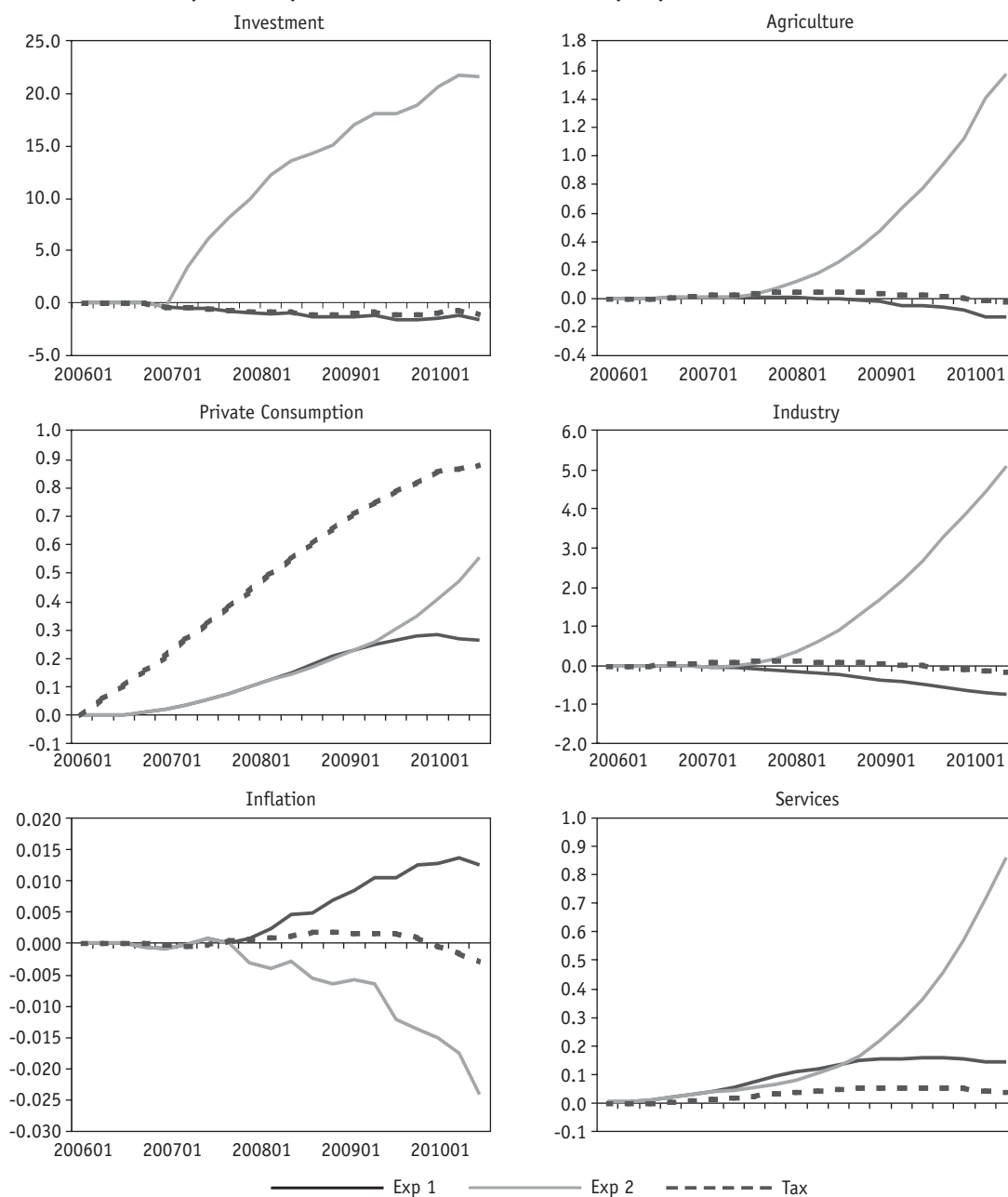
Note: Figures are in percent changes in own variables.

FIGURE 9
INDONESIA: IMPACT ON GDP COMPONENTS AND INFLATION OF A PERMANENT INCREASE (DECREASE) IN GOVERNMENT EXPENDITURE (TAX) BY 1 PERCENT OF GDP



Note: Figures are in percent changes in own variables.

FIGURE 10
PHILIPPINES: IMPACT ON GDP COMPONENTS AND INFLATION OF A PERMANENT INCREASE
(DECREASE) IN GOVERNMENT EXPENDITURE (TAX) BY 1 PERCENT OF GDP



Note: Figures are in percent changes in own variables.

B. Automatic Stabilizers

Tables 5 and 6 report the smoothing power of automatic stabilizers at the spending and taxation sides, respectively. Since it is assumed in Section II that the shock originates from a demand-side decline in output, the stabilizers in the simulations respond (at least initially) through either an increase in government spending or a tax reduction.

The smoothing power of expenditure-side automatic stabilizer appears weak and ineffectual in Bangladesh and Indonesia. In the case of Bangladesh, using equation (1), only 1% of the consumption shock is smoothed out, while the investment and export shocks are not smoothed out at all. For Indonesia, no smoothing out occurs for any of the shocks. In contrast, the expenditure-side stabilizer appears highly effective in the PRC, where it smoothes out about 7–8% of all three types of demand shocks, which is comparable to the estimates of Auerbach and Feenberg (2000) for the US. In the case of the Philippines, this stabilizer is effective for consumption and investment shocks—even as measured by equation (2)—but not for the export shock.

In the case of the tax-side automatic stabilizer, Table 4.5 indicates that it is potentially only effective for Indonesia, where it is able to smooth out consumption and export shocks, also even under equation (2). It has a marginal impact for Bangladesh across shock categories, and does not smooth out at all for the PRC and the Philippines.

In summary, the expenditure-side automatic stabilizer appears to be relatively effective for the PRC and the Philippines but ineffective for Bangladesh and Indonesia. On the other hand, a tax-side automatic stabilizer is effective for Indonesia. Unfortunately, neither side of the automatic stabilizers appears to be effective for Bangladesh.

A caveat must be noted here: the designed automatic stabilizers are highly aggregate since the models we have do not contain disaggregate equations explaining different tax categories or specific spending categories. Al-Eyd et al. (2004) and Brunila et al. (2002), for instance, show that the effect of automatic stabilizers depends on the disaggregate structure of taxes.

TABLE 5
EFFECTIVENESS OF AUTOMATIC STABILIZERS: EXPENDITURE ADJUSTMENT

SHOCK TO	BANGLADESH	PRC	INDONESIA	PHILIPPINES
Consumption	0.01	0.07	−0.05	0.04
	<i>−0.01</i>	<i>−0.06</i>	<i>0.24</i>	<i>0.09</i>
Investment	−0.04	0.08	−0.12	0.05
	<i>−0.02</i>	<i>−0.06</i>	<i>0.25</i>	<i>0.05</i>
Exports	−0.04	0.08	−0.05	−0.03
	<i>−0.02</i>	<i>−0.06</i>	<i>0.23</i>	<i>0.03</i>

Note:

- (i) The upper figures correspond to smoothing as defined in equation (1) in Section II. The italicized lower figures correspond to smoothing as defined in equation (2).
- (ii) Smoothing power is measured for the period of the shock and the year immediately after (2006–2007).

TABLE 6
EFFECTIVENESS OF AUTOMATIC STABILIZERS: TAX ADJUSTMENT

SHOCK TO	BANGLADESH	PRC	INDONESIA	PHILIPPINES
Consumption	0.00	-0.01	0.04	-0.04
	<i>0.00</i>	<i>0.01</i>	<i>0.15</i>	<i>0.01</i>
Investment	0.01	-0.01	-0.02	-0.03
	<i>0.00</i>	<i>0.01</i>	<i>0.16</i>	<i>0.02</i>
Exports	0.01	-0.02	0.04	-0.08
	<i>0.00</i>	<i>0.01</i>	<i>0.14</i>	<i>0.03</i>

Note:

- (i) The upper figures correspond to smoothing as defined in equation (1) in Section II. The italicized lower figures correspond to smoothing as defined in equation (2).
- (ii) Smoothing power is measured for the period of the shock and the year immediately after (2006–2007).

V. CONCLUSION

This paper examines empirically the effectiveness of fiscal policy in four Asian countries—Bangladesh, PRC, Indonesia, and Philippines—using structural macroeconomic model simulations. Fiscal policy is divided into two: discretionary policy and automatic stabilizers. For discretionary policy, the effectiveness is evaluated on the basis of the sizes of the short-term and medium-term multipliers under three scenarios: (i) untargeted government spending increase, (ii) investment-targeted government spending increase, and (iii) and tax reduction.

In the case of an impulse shock of untargeted spending, the short-term multipliers are found to be positive but way below unity for each of the four countries. The multipliers are much higher in the case of targeted increases, especially for the PRC. The multipliers from a tax reduction are generally lower than the spending multipliers except in the case of the PRC against untargeted spending. Over the medium term, the multiplier impact of a fiscal impulse shock dies out, except in the targeted spending scenario for the PRC and the Philippines.

Automatic stabilizers are classified into two types: one that works on the expenditure side, and the other through the tax side. The paper finds that, at least for PRC, Indonesia, and Philippines, automatic stabilizers are effective in smoothing out some of the effects of a large demand shock. The results also indicate that an expenditure-side automatic stabilizer is more effective for the PRC and the Philippines, while a tax-side stabilizer is more effective for Indonesia.

Finally, putting the results together, increased fiscal spending is found to be an effective expansionary and stabilizing tool for the PRC and the Philippines, with the qualification that, for the former, it is also inflationary. On the other hand, increased fiscal spending is only expansionary but not stabilizing in Indonesia and Bangladesh. Meanwhile, tax reduction is found to be generally a less effective expansionary tool and is stabilizing only in the case of Indonesia.

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Geoffrey Ducanes, Marie Anne Cagas, Duo Qin, Pilipinas Quising, and Mohammad Abdur Razzaque study the effectiveness of fiscal policies for economic expansion and stabilization in four developing Asian countries (Bangladesh, People's Republic of China, Indonesia, Philippines) using structural macroeconometric model simulations. They find that fiscal expansion via increased spending, especially if targeted, is typically more effective than fiscal expansion via tax rate reduction for stimulating growth. On the other hand, the effectiveness of expenditure versus tax-side automatic stabilizers differs across countries.

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