EFFECTS OF POLITICAL INSTABILITY ON THE DOMESTIC SAVINGS RATE IN BANGLADESH: AN EMPIRICAL STUDY

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ABSTRACT

It is commonly believed that by creating an environment detrimental to long-term planning, political instability reduces the domestic savings rate in the LDCs. Since the domestic savings rate in Bangladesh is among the lowest in the LDCs and the country hosts a chronically unstable political regime, it provides an interesting test case for the hypothesis. This study estimates an error correction model of the domestic savings rate in Bangladesh and finds that political instability has significantly depressed the domestic savings rate which underscores the importance of promoting political stability in Bangladesh, the lack of which poses the single most challenging obstacle to achieving its economic potential.

Introduction

The topic of political instability and its deleterious effects on the growth dynamics of the LDCs has recently gained prominence in the development economics literature, which coincides with the emergence of the new institutional economics that emphasizes the significance of institutions in economic development[1]. It has been argued that by creating an uncertain economic environment detrimental to long-term planning and by reducing economic growth and investment opportunities, political instability reduces the domestic savings rate in the LDCs and thus poses a formidable hurdle to achieving their long-term development objectives (Barro 1991, Corbo and Schmidt-Hebbel 1991, etc.). Several empirical studies, such as Stewart and Venieris (1985), Venieris and Gupta (1986), Gyimah-Brempong and Traynor (1996), etc. have found econometric evidence that political instability does contribute to a significant reduction of the domestic savings rate in the LDCs.

Since Bangladesh has time and again been jolted by bouts of political turmoil and the savings rate in the country is among the lowest in the LDCs, it would be a worthwhile research issue to investigate whether there exist any causal linkages between political instability and savings rate in that country. In order to bridge the shortfall of domestic savings, Bangladesh has zealously campaigned over the years to promote a more hospitable image to attract more foreign investment; foreign investors, however, have remained wary of the country's troubled history of political instability. The Bangladesh political frontier has been plagued by a chronically unstable political regime, which has always lacked serious discipline and accountability, and the present political situation is anything but congenial to investment—both domestic and foreign. A complex array of hurdles, compounded by political instability, poses a formidable hurdle to government initiatives of attracting more foreign investment. The US Department of State aptly reports: "although the [Bangladesh] government has enacted some liberal investment policies to foster private sector involvement (mainly in energy and telecommunications), poor infrastructure, bureaucratic inertia, corruption, labor militancy, and a generally weak financial system discourage investment. Political unrest and a deteriorating law and order situation also discourage domestic and foreign investors" (Heritage 2003).

This study seeks to empirically quantify the deleterious effects of political instability on the domestic savings rate in Bangladesh over the 1971-1999 period. In line with the recent econometric emphasis on estimating cointegrated time-series, this study applies the cointegration method and estimates an error correction model. The Engle-Granger cointegration method is applied to a standard savings function to estimate the short-run dynamic and the long-run equilibrium behavior of the gross domestic savings rate in Bangladesh. The estimated results suggest that political instability has indeed significantly depressed the domestic savings rate in Bangladesh; the estimated results further suggest that GDP growth rate, export earnings, remittances from abroad, inflation, and foreign aid are also important determinants of domestic savings. The principal finding of this study, that political instability has significantly depressed the domestic savings rate in Bangladesh, underscores the importance of devising strategies to promote political stability—a course that holds much at stake not only for Bangladesh, but also for the LDCs in general.

The rest of the paper is organized as follows: The next section discusses the state of the political

frontier in Bangladesh, followed by a brief literature review, the model and, finally, the results and discussions leading to policy implications.

The Political Frontier in Bangladesh

Once a land of prosperity and peace, Bangladesh now hosts a political frontier plagued by a chronically unstable political regime. The legacy of its political instability stems back to the Pakistani rule during the 1947-71 period, when Bangladesh was the eastern wing of Pakistan. Even though the majority of the population resided in East Pakistan, it was West Pakistan that assumed the role of political and economic leadership of the entire country. As a consequence of economic discrimination and exploitation by the West, the economy of the East experienced severe downturns that caused mass grievances throughout the 1960s. Low agricultural growth, increasing incidence of unemployment, poverty, etc. contributed to further deterioration of the socio-economic plight of the East that eventually led to a brutal civil war and subsequent independence of Bangladesh in 1971.

The post-independence political frontier in Bangladesh has been extremely turbulent. Two elected heads-of-state were killed by army coups, nearly 25 unsuccessful coups were staged, one dictator was forced out of office by popular uprising, and all but three national elections were orchestrated by the incumbent parties. The stage for immediate post-independence political instability was set by the atrocious independence war, which left the population exhausted, the countryside ravaged, the economy shattered, and an inexperienced leadership in power facing a host of problems of monumental dimensions. Declining production, high rates of chronic unemployment, runaway public financial mismanagement, falling per capita income and, above all, the ravaging famine in 1974 led to severe socio-economic chaos, which culminated in the gruesome overthrow of the Mujib regime in August 1975 by a gang of junior army officers. This catastrophic change of regime and its aftermath created a sharp political division among the general population that still divides the nation right down the middle.

The aftermath of the August coup resulted in a complete breakdown of the chain of command in the military, which gave way to two more coups in quick succession in November 1975, the latter of which catapulted General Zia to the helms of power. The military-turned-civilian regime of Zia generally enjoyed popular support, as it was successful in restoring a decent level of socio-economic stability in the late 1970s. However, Zia's rule was constantly being challenged by a series of unsuccessful coups that were subdued with draconian force. One such coup ultimately brought down Zia's regime, as he met with his tragic end in 1981.

Following the death of Zia, the nation again witnessed a period of turmoil. As Zia's successor, Sattar, tried to strengthen his rein over the country, his rule was challenged by the army chief, General Ershad, who eventually forced Sattar out of office by a bloodless coup in 1982. Ershad never enjoyed much public support as the people generally perceived him as a corrupt despot who had tremendous interests in women and wealth but not in good governance. From time to time, Ershad's rule was challenged by violent student protests, which enjoyed tremendous popular support particularly in the mid- and late 1980s. These fierce student protests gathered enough momentum and public support to force him out of office in 1990.

Following Ershad's ouster from power, for the first time in the nation's history the national parliamentary election was held under the supervision of a non-partisan caretaker government to ensure a free and fair election. The election brought the Bangladesh Nationalistic Party (BNP), headed by the widow of Zia, Begum Khaleda Zia, to power. People had hoped that the transition of power to a democratically elected government would stabilize the political arena. But, during most of 1995 and early 1996, Bangladesh was again jolted by the most violent bout of political turmoil in its recent history.

The opposition party Awami League (AL), which was headed by the daughter of Mujib, Sheikh Hasina, waged a militant movement to oust the BNP government and threatened to boycott the next election unless it was supervised by a caretaker government. To press its demand home, the opposition waged a menacingly violent campaign of as many as 173 days of country-wide work stoppages (*hartals*), which at times halted all economic activities nonstop for three to four days. The BNP government brushed aside the opposition's demand and adamantly proceeded with holding the election on schedule, only to relent to the opposition's demand several weeks later.

Following the 1996 national election, the AL came to power. In a bitter twist of irony, the AL government faced the same sort of political challenges from the BNP-led opposition, albeit on a much smaller scale, that they themselves had waged when they were in the opposition camp. Although the militancy of street

agitations was on a decline from the fiery days of 1995/1996, the culture of confrontation continued to dominate the political arena The 2001 election again reversed fortunes for the two political rivals and brought the BNP back to power

To date, the two rival parties remain bitterly critical of each other over various issues A recent commentary notes: "Bangladesh's parliament has been bitterly divided since the October 2001 elections . This has hampered government efforts to maintain law and order, thereby discouraging foreign investors" (Heritage 2003) Despite the constitutional amendment that makes permanent the unique provision of caretaker governments to ensure that all national elections are held free and fair, the bitter acrimony between the two parties, which perhaps reflects the personal spite between their two leaders, does not seem to be patching up in the near future. Unless these rivals find ways to bridge their gap, the political culture of confrontation is likely to loom large on this poor country's long-run economic horizon.

Literature Review

Empirical studies of domestic savings in the LDCs have almost exclusively focused on economic variables, such as foreign capital, GDP growth, etc., while non-economic variables such as political instability have not hitherto received much attention. Papanek (1972), Scully (1988), North (1990), Dawson (1998) have long argued, however, that the non-economic institutions are no less crucial than the usual economic factors in determining the macroeconomic performance of a country Most researchers nonetheless seemed to have presumed the existence of stable political systems in their empirical investigations; only a few studies have investigated the effects of political instability on domestic savings

Several studies, such as Stewart and Venieris (1985), Venieris and Gupta (1986), Gyimah-Brempong and Traynor (1996), etc. have found for a cross-section of LDCs that political instability significantly reduces domestic savings in the afflicted countries These studies generally conclude that frequent occurrences of political turmoil seriously erode the investors' confidence in the local investment climate, which reduces domestic savings Quazi (2000) is hitherto the only study that investigates the effects of natural and political shocks on the macroeconomic performance in Bangladesh The study found that the effects of these exogenous shocks on GDP growth are significantly negative, while the effects on

domestic savings are also negative, but not statistically significant Since the study had used a single composite variable for natural disasters and political turmoil, the effects of political instability on domestic savings are not separated out from the effects of natural disasters In a recent study, Alam and Quazi (2003) have found that by creating an unfavorable business climate and bringing about fear of an uncertain future, political instability also pushes out domestic capital from Bangladesh to safer havens, i e political instability causes capital flight from Bangladesh[2].

Most savings studies have generally included subsets of the following economic variables as determinants of domestic savings: the GDP growth rate, per capita income, export earnings, real interest rate, foreign capital, inflation rate, age dependency ratio, etc Among these studies, Mikesell and Zinzer (1973), Fry (1986), Lahiri (1989) and Gyimah-Brempong and Traynor (1996) contended that higher economic growth and per capita income raise transitory income more than permanent income, which induces increased savings Lee (1971), Papanek (1972), Rahman (1984), Fry (1986) and Lahiri (1989) argued that exports of primary products usually generate highly concentrated income, which is more likely to be saved, and also export taxes are a significant source of government revenues and, hence, public savings McKinnon (1973) and Shaw (1973) contended that the real interest rate positively affects the savings rate in the LDCs[3] Mahdavi (1989), among others, argued that a higher inflation rate reduces the domestic savings rate by diminishing the incentive to save Fry (1986) and Mahdavi (1989) argued that a higher age dependency ratio, defined as the ratio of non-working population (aged 0-14 and 65+) to working population (aged 15-64), causes a larger fraction of income earned by the productive population to be spent to support the consumption of the non-productive population, which ultimately reduces the domestic savings rate.

Many studies have described foreign capital (aid) as a significant determinant of domestic savings with opposing effects, which in itself is a huge research topic and requires some further explanation There are two phases in the aid-savings literature. The first phase corresponds to the 1960s when the traditional view held that aid augments domestic savings, while the second phase started in the early 1970s when the radical economists argued that aid in fact reduces domestic savings Griffin and Enos (1970) led the radical camp by postulating that foreign capital may depress public savings by either reducing public revenues or increasing public consumption

expenditures The former is due to lower taxation efforts by the government, which in turn is due to the fact that foreign capital provides the government with a cushion from resorting to either tax increases or tax collection—neither of which is very popular, while the latter is due to the availability of additional resources at the government's disposal. Furthermore, foreign capital may reduce private savings by providing the private entrepreneurs with easy credit loans, which would essentially diminish the necessity for the local entrepreneurs to generate domestic savings. There are numerous much-cited empirical studies, such as Chenery and Strout (1966), Griffin and Enos (1970), Weisskopf (1972), etc., which found ample empirical evidence that foreign capital reduces domestic savings. Among the early aid-savings studies in Bangladesh, Alamgir (1974) and Rahman (1984) found that foreign capital had affected the domestic savings rate positively in the short run. Several later studies, such as Taslim and Weliwita (1998) and Quazi (2000), covering longer sample periods have found contrary results.

This present study adds to the LDC savings literature a single-country empirical study of Bangladesh and estimates the causal relationship between political instability and domestic savings with the cointegration method. It is well established in the current empirical literature that if time-series variables are not tested for the presence of non-stationarity, the estimated regression results are possibly spurious and, hence, may not be very reliable. Since most time-series variables used in empirical research are non-stationary, it is important to "detrend" these variables appropriately with cointegration methods. This study accordingly applies the Engle-Granger (1987) cointegration method and estimates the behavior of the domestic savings rate in Bangladesh as an error correction model, which is presented next.

The Model

Theoretical Design of the Model

Following the literature, the following function can be formulated as a general domestic savings function for Bangladesh.

$$S_t = f(AID_t, GR_t, Y_t, EX_t, R_t, INFL_t, DR_t, PI_t)$$

where, S = gross domestic savings as a percentage of GDP; AID = foreign aid as a percentage of GDP; GR = real GDP growth rate; Y = per capita real GDP; EX = export earnings as a percentage of GDP; R = real interest rate; INFL = inflation rate; DR = age

dependency ratio [ratio of non-working population (aged 0-14 and 65+) to working population (aged 15-64)]; PI = political instability; and t = time

Rationale of the Model

The general savings function is essentially grounded in a Keynesian type saving function. Most empirical studies of the domestic savings rate, such as Dowling and Hiemenz (1982), Gupta (1987), Deaton (1992), etc., have used similar functions. The above function augments the standard savings functions by including the effects of political shocks on domestic savings.

Foreign aid (AID)[4] is included in the function following the seminal works of Chenery and Strout (1966), Griffin and Enos (1970) and Weisskopf (1972), while the GDP growth rate (GR) and per capita income (Y) have been added following Mikesell and Zinzer (1973), Fry (1986), Lahiri (1989) and Gyimah-Brempong and Traynor (1996). Next, export earnings as a percentage of GDP (EX) has been added following Lee (1971), Papanek (1972), Fry (1986) and Lahiri (1989), which have included it in similar studies for other third world countries, and M. Rahman and K. Rahman (1983), A. Rahman (1984), Ahmed (1992), and Quazi (2000), which have included it for previous domestic savings studies of Bangladesh. Next, the real interest rate (R) has been added following McKinnon (1973) and Shaw (1973), while inflation (INFL) has been added following Mahdavi (1989), and age dependency ratio (DR) has been added following Fry (1986) and Mahdavi (1989). Finally, political instability (PI), the main focus of this study, has been added following Stewart and Venieris (1985), Venieris and Gupta (1986), Barro (1991), Gyimah-Brempong and Traynor (1996) and Gounder (2002), which suggest that domestic savings is determined to a large extent by economic growth and investment opportunities and by investors' perceptions of the overall investment climate and security of property rights; but frequent occurrences of political turmoil are likely not only to depress investment opportunities, but also to seriously erode the investors' confidence in the local economy

As precise measurement of political uncertainty is difficult, several studies, such as Fatehi and Gupta (1992), Gibson and Tsakalotos (1993), Lensink et al (2000), etc., have used either the occurrences of strikes, political assassinations, etc. or dummy variables as proxy variables for political instability. The model estimated in this study also uses a dummy variable as the proxy variable for political instability in Bangladesh[5].

Data, Methodology, and Estimation

Annual time-series data from 1971 to 1999 are used in model estimation. Data on domestic savings rate, foreign aid, GDP, per capita GDP, real GDP growth rate, real interest rate, export earnings, remittances from abroad, inflation rate, and age dependency ratio are collected from the *World Tables* (World Bank 2000). A dummy variable is used as a proxy for years of political instability. The dummy takes on the value of 1 in the following years: 1971-72 (the chaotic period of the independence war and the post-war anarchy), 1974-75-76 (the period of severe political chaos compounded by a ravaging famine, violent regime changes, successive army coups, imposition of military rule, and the post-coup uncertainty), 1982-83 (the period of political turmoil triggered by the ouster of an elected president from office by an army coup and the post-coup uncertainty), 1990 (the year of intense popular uprising that forced an unpopular president out of office), 1995-96 (the period of fierce anti-government street agitations).

There are several alternative methods, such as the Johansen method and Engle-Granger method, which are widely used to estimate cointegration models. This study uses the Engle-Granger method due to its small sample size[6]. Before the cointegration method can be applied, the order of integration of each variable must be determined by the Augmented Dickey-Fuller (ADF) test to probe the presence of any unit-root process. Table 1 in the appendix presents the ADF test statistics, which show that S, AID, GR, EX, INFL and R are integrated of order 1, while Y and DR are integrated of order 2. In order to test if the variables are cointegrated, the model is first estimated by the OLS method and the residual (u_t) is tested for non-stationarity. If the residual is found to be stationary, the variables are cointegrated and finally the error correction model is estimated.

This study follows a "general-to-specific" method to arrive at a parsimonious model. Accordingly, the cointegration method discussed above is applied to estimate the model in its general specification and also in other specifications comprising various combinations of the explanatory variables. Each model specification is tested for statistical significance as well as for consistency with the cointegration method. After discarding the specifications that are not statistically satisfactory, the following model specifications are selected. The next section presents the static long-run equilibrium equations and the dynamic short-run equations for each model specification.

The Long-run Equilibrium Equations

Model 1:

$$S = 3.74 - 0.09\,AID + 0.17\,GR^{**} + 0.95\,EX^{**} - 1.96\,PI^{**}$$
$$\quad\quad (-1.57)\quad\ (2.51)\quad\ (6.29)\quad\ (-2.97)$$

Adjusted $R^2 = 0.86$; D-W Statistic $= 2.21$; $F_{4,24} = 43.72$

** significant at 5% level of significance

Although Model 1 above adequately captures the long-run equilibrium behavior of the domestic savings rate in Bangladesh, since the coefficient of AID turns out only marginally significant (significant at 15%), it is replaced by another variable, INFL, in the following alternative specification. It was found that when INFL is lagged by one period, suggesting that the domestic savings rate responds to changes in the inflation rate with a time lag—a reasonable assumption—the statistical properties of the model improve significantly. Model 2 presents the alternative specification.

Model 2:

$$S = 2.13 - 0.05\,INFL_{t-1}^{**} + 0.30\,GR^{**} + 1.01\,EX^{**} - 1.24\,PI^{*}$$
$$\quad\quad (-2.72)\quad\quad\quad (4.30)\quad\ (10.01)\quad\ (-1.86)$$

Adjusted $R^2 = 0.89$; D-W Statistic $= 1.44$; $F_{4,23} = 58.11$

*significant at 10% level of significance
** significant at 5% level of significance

Both Model 1 and Model 2 capture the long-run equilibrium behavior of domestic savings rate in Bangladesh very well. It should be noted that although the share of export earnings in GDP (EX) has been routinely used in many similar studies, in the context of Bangladesh, remittances from abroad are also a significant source of foreign exchange earnings and hence may have similar effects on domestic savings[7]. To address that possibility, export earnings and remittance from abroad are combined into a single variable – FX (foreign exchange earnings as a percentage of GDP). The ADF test statistics reported in Table 1 show that the data series of FX is integrated of order 2, which suggests that FX can be included in the model only if there is another variable with the same order of integration[8]. Accordingly, a very restrictive model specification can be formulated with the exogenous variables Y, DR, and FX, which are all integrated of order 2. After testing for statistical significance of the possible combinations, the following model specification is presented.

Model 3:

$$S = 17\,08 - 14\,06\,DR + 0\,64\,FX^{**} - 2\,14\,PI^{**}$$
$$\quad\quad (-1\,04) \quad\quad (2\,69) \quad\quad (-2\,75)$$

Adjusted $R^2 = 0\,80$; D-W Statistic $= 2\,09$, $F_{3,25} = 37\,93$

** significant at 5% level of significance

The long-run equilibrium behavior of the domestic savings rate in Bangladesh captured by each of the model specifications above appears theoretically consistent. The coefficients turn out with the correct signs and except the variables AID in Model 1 and DR in Model 3 all other variables turn out statistically significant. It should be noted here that the coefficient of political instability (PI) turns out significantly negative in all three specifications, suggesting that over the long run political instability exacts a heavy toll on domestic savings rate in Bangladesh.

The estimated coefficients of u_{t-1} or the error correction term (ECM_{t-1}), which are presented in the appendix, also appear statistically highly significant in each specification. Therefore, the residuals appear stationary and the series appear co-integrated. The final step is to add ECM_{t-1} to each specification and estimate them in a first differencing regression, which also represents the short-run dynamic equation of each specification, which are presented next.

The Short-run Dynamic Equations

Model 1:

$$\Delta S = 0.31 - 0.08\,\Delta AID + 0\,11\,\Delta GR^* + 1\,49\,\Delta EX^{**} - 1\,34\,PI^*$$
$$- 1\,16\,ECM_{t-1}^{**}$$
$$\quad\quad\quad (-1\,12) \quad (1\,79) \quad\quad (3\,96) \quad\quad (-1\,82)$$
$$(-5\,03)$$

Adjusted $R^2 = 0\,70$; D-W Statistic $= 2\,06$; $F_{5,22} = 13\,63$

Model 2:

$$\Delta S = 0\,37 - 0\,08\,\Delta INFL_{t-1}^{**} + 0\,22\,\Delta GR^{**} + 0\,97\,\Delta EX^{**} - 0\,59\,PI$$
$$- 0\,80\,ECM_{t-1}^{**}$$
$$\quad\quad\quad (-6\,99) \quad\quad\quad (5\,28) \quad\quad (3\,32) \quad\quad (-1\,19)$$
$$(-4\,48)$$

Adjusted $R^2 = 0\,84$; D-W Statistic $= 1\,34$; $F_{5,21} = 27\,39$

Model 3:

$$\Delta S = 0\,59 - 6\,05\,\Delta DR + 0\,62\,\Delta FX - 1\,62\,PI^*$$
$$- 1\,14\,ECM_{t-1}^{**}$$
$$\quad\quad\quad\quad (-0\,21) \quad\quad (1\,45) \quad\quad (-1\,89)$$
$$(-4\,98)$$

Adjusted $R^2 = 0\,59$; D-W Statistic $= 1\,56$; $F_{4,23} = 10\,73$

* significant at 10% level of significance
** significant at 5% level of significance

The short-run dynamic behavior of the domestic savings rate in Bangladesh also appears theoretically consistent in each specification above. All 14 coefficients turn out with the correct signs, and, except AID in Model 1, PI in Model 2, and DR and FX in Model 3, the other 10 variables turn out statistically significant. Out of the four insignificant variables above, as many as three turn out marginally significant. Also, the adjusted R^2, D-W statistics, and F statistics both in the long-run and short-run equations in each specification suggest that the estimated equations have strong explanatory power, the error terms are free of autocorrelation and the explanatory variables are jointly highly significant. Finally, the error correction terms (ECM_{t-1}) turn out negative and highly significant in each specification, which indicates that ΔS adjusts in the next period to correct departures from the equilibrium in the previous period, which in turn suggests that the domestic savings rate in Bangladesh follows an equilibrium path.

The estimated results from the long-run equilibrium as well as from the short-run dynamics in each specification validate the hypothesis that political instability adversely affects the domestic savings rate in Bangladesh. Furthermore, these results also suggest that higher GDP growth rate, higher export earnings and remittances from abroad increase the domestic savings rate in Bangladesh, which is consistent with the findings of Fry (1986), Lahiri (1989), Deaton (1992), etc.; a higher inflation rate depresses the domestic savings rate, which is consistent with the findings of Mahdavi (1989), and increased foreign aid inflow decreases the domestic savings rate, albeit not very significantly, which conforms to the radical anti-aid view advocated by Chenery and Strout (1966), Griffin and Enos (1970), Weisskopf (1972), etc.

Conclusions

During the last several decades, development economists have emphasized the importance of savings and investment in the growth dynamics of the LDCs. Savings may not accumulate in an unstable economic environment that is not conducive to long-term planning. Most empirical studies of LDC savings, however, routinely ignore the deleterious effects of political instability on the economic environment. This study tests the hypothesis that by creating an economic environment detrimental to long-term planning, political instability reduces the domestic savings rate in Bangladesh. An error correction model with several alternative specifications is estimated with 1971-1999 time-

series data that finds results which suggest that political instability has indeed significantly depressed the domestic savings rate in Bangladesh

It should be noted here that distinctions should be made carefully between the two components of domestic savings—private savings and public savings—as the effects of political instability on private savings are likely to be significantly different from those on public savings. Political instability should drastically reduce private savings, as the confidence of households and business firms in the local economy should be severely depressed by the occurrences of politically destabilizing events. However, political instability should have only minimal effects on public savings, as the public savings rate is more likely to respond to factors such as the availability of foreign aid, size of government expenditure programs, etc than to the domestic political environment. Therefore, it would be worthwhile to estimate the impact of political instability on both private and public savings. However, reliable data on private and public savings in Bangladesh are not readily available, which makes it difficult to meaningfully address this issue. Future studies should further explore this particular avenue of research.

The findings of this study point to several important research and policy implications. First, if political instability is excluded from the savings function, the function may very well be mis-specified, which may in turn render policy recommendations based on the mis-specified function misleading. More importantly, these results emphasize the importance of non-economic institutions in the growth dynamics of the LDCs. The absence of a stable socio-economic framework, caused by the absence of political stability, will likely negate the stimulating effects of economic forces on savings and growth. Therefore, strategies should be formulated to promote long-term political stability in the LDCs, which will likely foster a healthy economic environment that is ready to nurture the economic ingredients of economic development. Furthermore, policymakers in the LDCs should make conscientious efforts to include institutional development in the forefront of their policy mapping, and the donors, who wield enormous influences in shaping the LDC policies, should actively encourage such initiatives.

Results found in this study also have significant implications for designing effective macroeconomic policies in Bangladesh. First, since higher economic growth is found to induce a higher domestic savings rate, government strategies to promote higher domestic savings should comprise pro-growth economic policies. Although higher economic growth per se is a desirable outcome, under certain circumstances, such as during IMF prescribed austerity programs, the government may be forced to temporarily embrace policies that slow down economic growth and consequently lower the domestic savings rate. Policymakers should remain wary of the linkages between reduced economic growth and a lower savings rate, which in turn reduces future economic growth potential and thus sets a vicious cycle in motion. Further, the government should maintain its grip on the inflation rate, which has remained low in recent years.

Next, since foreign aid inflow is found to reduce the domestic savings rate, albeit not highly significantly, the presumed efficacy of the aid regime in Bangladesh may be put to further scrutiny. Several aid-growth studies, such as Ahmed (1992) and Quazi (2000, 2003), have found that, contrary to the donors' premises, the aid regime in Bangladesh has not been very successful in its mission of promoting economic development there. Therefore, the government as well as the aid donors should re-evaluate the need of sustaining the aid regime in its present form.

Furthermore, since higher export earnings and remittances from abroad are found to cause a higher savings rate, the government should pursue economic policies to vigorously promote exports of commodities as well as manpower abroad. Pro-export policies, such as granting easier credit access to exporting firms, establishing more export processing zones, actively aiding the exporting firms in seeking foreign markets, revising and updating the archaic business rules and regulations, etc. would support the existing exporting firms and also draw more entrepreneurs into the export sector.

Finally, as for the lingering effects of political instability on the long-term economic prospects of Bangladesh, it is vital that the era of confrontational politics soon comes to an end, enabling the economy to proceed to realizing its potential. The principal finding of this study that political instability hurts the Bangladesh economy is corroborated by a very recent report that notes: "the [Bangladesh] government has attempted to stimulate other sectors [other than agriculture] to diversify the economy, but political instability, investment restrictions, and high tariffs continue to undermine these efforts" (Heritage 2003). Therefore, it is imperative that political rivals make genuine efforts to mend their differences, otherwise the prospect of recovering the ailing Bangladesh economy will remain an elusive dream.

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ENDNOTES

[1] Several studies such as Scully (1988), North (1990), and Dawson (1998), provide detailed discussions of the many effects of institutions on economic development.

[2] For a detailed discussion of the linkages between political instability and capital flight, see Lessard and Williamson (1987), Fatehi and Gupta (1992), Lensink *et al.* (2000), etc.

[3] Several studies such as Venieris and Gupta (1986), have, however, argued that since changes in real interest rate can cause both income and substitution effects, the overall effects of real interest rate on domestic savings rate may be ambiguous.

[4] Since foreign direct investment (FDI) in Bangladesh is relatively a new phenomenon, this study excludes FDI and treats foreign aid as the only form of foreign capital entering Bangladesh. Future studies on Bangladesh covering larger sample periods should incorporate FDI into total foreign capital inflow.

[5] Instead of a dummy variable, more complex methodologies may be used to construct more sophisticated proxy variables for political instability. It is likely that the estimated coefficients of such variables would vary in absolute magnitude with the specific choice of the variable. Since the primary

objective of this study is to estimate the direction of effects of political instability on domestic savings, i.e. positive or negative, and not the absolute magnitude of these effects, the use of a dummy variable is sufficient for this study

[6] It should be noted here that for large samples the Johansen test is generally more powerful and preferable to the Engle-Granger test. However several studies suggest that for small samples, such as the present study, the Engle-Granger test may be more desirable. For example, Gonzalo and Lee (1990) report that in most small samples investigated in their study, the Engle-Granger test is more robust than the Johansen tests. Also, according to Toda (1994), unless the sample size is very large the Johansen tests cannot detect well the cointegrating ranks. Therefore, this study uses the Engle-Granger procedure due to its small sample size. Furthermore, it was found that repeating the exercise with the Johansen procedure do not improve the estimated results. Details available from the author.

[7] This important issue was pointed out by an anonymous referee.

[8] Charemza and Deadman (1999) report that if the dependent variable is integrated of an order not higher than that of any of the explanatory variables, and there are at least two explanatory variables with an identical order of integration higher than that of the dependent variable, the cointegration method is still consistent.

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Appendix

Table 1. Augmented Dickey-Fuller (ADF) Test

Variable	Lag[a]	Intercept	First Difference	Second Difference
S	5	0.06	-2.07*	
AID	5	-1.38	-1.83*	
GR	5	-1.65	-1.88*	
EX	4	1.86	-1.71*	
R	4	-1.2	-2.94*	
INFL	5	-1.49	-4.08*	
Y	5	1.64	-1.32	-2.87*
FX	4	1.09	-1.12	-3.77*
DR	4	2.31	-0.51	-4.28*

Notes: [a] The optimum number of lags is chosen by the Akaike Information Criterion
* The ADF test statistic is significant at the 10% level of significance

Testing for Cointegration [a]:

Model 1:
$$\Delta u_t = -1.53 \, u_{t-1}^{**} + 0.54 \, \Delta u_{t-1} + 0.65 \, \Delta u_{t-2} + 0.59 \Delta u_{t-3} + 0.30 \Delta u_{t-4} + 0.16 \Delta u_{t-5} + v_t$$
(-2.96)

Model 2:
$$\Delta u_t = -1.20 \, u_{t-1}^{**} + 0.34 \, \Delta u_{t-1} + 0.38 \, \Delta u_{t-2} + 0.07 \, \Delta u_{t-3} + v_t$$
(-3.15)

Model 3:
$$\Delta u_t = -0.94 \, u_{t-1}^{**} + 0.03 \, \Delta u_{t-1} + v_t$$
(-4.31)

** significant at the 1% level of significance

Notes: [a] The number of lags is chosen by the Akaike Information Criterion