

# Badri Bhattarai, Kishor Sharma

La Trobe University, Sydney, Australia (Bhattarai)  
Charles Sturt University, Wagga, Australia (Sharma)

## Aid, Policy and Growth: The Case of Nepal

### Abstract:

The debate over aid effectiveness has produced a large number of cross-sectional studies; in contrast case studies of individual countries are extremely limited, probably due to the lack of disaggregated data. This paper contributes to aid, policy and growth literature using data from Nepal, which has been one of the highest aid recipients in developing world. Our findings suggest that aid in the presence of sound economic policy contributes to growth. However, we did not find any statistical evidence to suggest that democratic governance has any impact on aid effectiveness in Nepal.

**Keywords:** Governance, Foreign Aid, Nepal, Corruption, Poverty, Civil War

### 1 Introduction

The relationship between foreign aid and economic growth remains controversial despite over half a century of its history and the debate as to the effectiveness of aid in developing countries continues. Recently, Burnside and Dollar (2000) and Collier and Dollar (2001) (hereafter BD and CD respectively) have demonstrated, using cross-sectional data, that aid is growth enhancing in countries with good policies and institutions, and linking aid to policy reforms should help accelerate growth and alleviate poverty. While the BD and CD findings appear to be convincing, the empirical base and methodologies applied in their studies have been increasingly questioned (see, for example, Easterly et. al, 2003, Dalgaard et. al, 2004, and Hansen and Trap, 2000 & 2001). The critics point out a number of methodological short-comings when they re-estimated the BD and CD models of aid effectiveness using the same data set.<sup>1</sup> One apparent problem with the aid-growth literature is that empirical studies are largely based on cross-country data which simply presents an ‘average’ picture. Naturally, they don’t capture the country-specific differences. Depending on the sample size, countries covered and variables used, sometimes aid is growth enhancing and sometimes not (Sharma, 2011).<sup>2</sup> These

---

<sup>1</sup> For instance, when Dalgaard, Hansen and Trap (2004) re-estimated the BD model using their data set they found that the BD results were crucially data-dependent. When five observations were excluded from the samples, the results changed because these observations had a very big influence on the coefficient to the aid–policy interaction term. They also demonstrated that when some other combinations of observations were deleted aid still stimulates growth regardless of the policy environment.

<sup>2</sup> Empirical studies are also sensitive to how aid is measured. For instance, when humanitarian and technical aid are excluded (which influence growth only in the medium term) aid tend to have a positive impact on growth (Clemens et al, 2004).

problems associated with cross-sectional studies can be overcome through a case study approach which is able to capture the effects of country-specific features and peculiarities on aid effectiveness. The aim of this paper is to shed light on this debate using historical data from Nepal. The case of Nepal is particularly interesting given that it has been highly aid dependent country for more than half a century.<sup>3</sup> Despite this, it remains one of the poorest and underdeveloped countries in the region (World Bank, 2010). High poverty and underdevelopment even led to civil war in the country in the mid 1990s which for over a decade.

The paper is organised as follows. Section 2 presents an analytical framework to place the study in the context. Section 3 documents trends and patterns of foreign aid, and governance in Nepal. Section 4 specifies a model, and discusses data and econometric procedures. Empirical results are discussed in Sections 5. The paper concludes with a conclusion and policy recommendations in Section 6.

## 2 Analytical Context

In the immediate post-war era, economists developed growth models to demonstrate how foreign aid can accelerate growth in developing countries.<sup>4</sup> Since developing countries ability to attract foreign private capital was limited, it was argued that foreign aid was the only means of rescuing these economies from poverty and underdevelopment by providing additional resources to fill the gaps in saving-investment and foreign exchange. Within this framework, some of the early studies found that foreign aid adversely affects domestic savings and growth. For example, Griffin (1970), and Griffin and Enos (1970) did not find any evidence of a positive link between aid, savings and economic growth in developing countries. They argue that aid was a substitute for savings and a large part of foreign capital was used to increase consumption rather than investment which is crucial for growth. In line with these studies, Boone (1996) also found that aid did not contribute to economic growth in developing countries. In a study of three South Asian countries (namely Indonesia, Thailand and Philippines) for the period 1970–2000, Burke and Ahmadi-Esfahani (2006) also found similar results. They concluded that rapid economic growth in these economies was mainly brought about by FDI and export growth not foreign aid. Critics, however, pointed out a number of methodological shortcomings for misleading results in the earlier studies (see, for example, Hansen and Tarp, 2000 and literature cited therein). Papanek (1972 & 1973), Hansen and Tarp (2000) and Sachs (2005) have convincingly shown that aid enhances investment and economic growth in developing countries, while Knack (2001) argue that foreign aid, by providing training and technical assistance, helps develop institutional capabilities which, in turn, give an important boost to the efficiency and effectiveness of governance and growth. Bauer (1976), however, argues that aid inflows to poor countries can perpetuate corrupt behaviour and create moral hazard, significantly undermining their institutions rather than building them. Bureaucrats and ruling elites may view aid resources as a means of generating revenue and a source of employment for their supporters and family members, leading to an expansion of the public

---

<sup>3</sup> Nepal's case is also interesting given its strategic location between two giant neighbors (namely, India and China), which has significantly influenced aid allocation from regional and super powers (such as the USA and the former Soviet Union).

<sup>4</sup> These included Sir Ray Harrod, Evsey Domar, Hollis Chenery, Sir Arthur Lewis, Gunnar Myrdal and Walt Rostow.

sector. Foreign aid inflows can also distort incentives for savings and investments and delay much needed reforms in developing countries which are *sine qua non* for private sector-led growth. Maren (1997) argues that excessive aid inflows can lead to political instability, a corrupt and an inefficient government; while Knack (2001) and Sharma (2006) have demonstrated that easy access to aid can make the ruling elites more powerful and further deteriorate the quality of governance. There is now growing consensus that weak governance and institutions retards investment and growth (see for example, Friedman et al., 1999 Kaufmann et al., 1999 and Kaufmann et al., 2004) while good policies and institutions enhances growth and aid effectiveness (World Bank, 2000 and Burnside and Dollar, 2000).<sup>5</sup> Often donor driven aid agenda fails to promote good governance and institutions in developing countries which are crucial for economic growth.

### **3 Trends and Patterns of Aid Flows, and Governance in Nepal**

#### *(a) Trends and Patterns of Aid Flows*

Located between two the largest countries of the world—India and China—Nepal is a land-locked country.<sup>6</sup> It shares its border in the East, West and South with India, and in the North with China. Its strategic location has attracted significant attention from bilateral donors including India, China, USA and the former Soviet Union. As a consequence, foreign aid has been a main source of capital formation, contributing as high as 95 percent to the government annual budget; although in recent years it has fallen to about 60 percent. As the intensity of the cold war increased foreign aid as a percentage of GDP rose from just under 2 percent in the late 1960s to over 10 percent by the end of 1980s, which was largely brought about by a growing tension between the US and China. Note that this unprecedented increase in aid flows may also have been due to global increase in development assistance since 1970s. However, with the end of cold war, together with a global decline in development assistance, aid flow to Nepal declined since the late 1990s—from 10 percent of GDP by the end of 1990s to about 7 percent by the mid 2000s (Table 1). A fall in development assistance, however, could not be solely attributed to a declining trend in aid flows globally. Domestic factors, such as political instability and the eruption of civil war in the mid 1990s (which lasted for over a decade) also appear to have contributed to a decline in aid flows. As the intensity of civil war increased in the early 2000s, the donor community increasingly suspended their aid programs due to the security of their staff and, of course, growing destruction of development projects caused by the conflict (see for example, Sharma, 2006 and 2011).

---

<sup>5</sup> These policies include low and predictable inflation, appropriate real interest rates, real exchange rates that are competitive and stable, sustainable fiscal policy, and a viable balance of payments position.

<sup>6</sup> Agriculture is the backbone of the Nepalese economy. It employs over 80 percent of the workforce, and contributes about 33 percent to GDP and 10 percent to export earnings. Manufacturing is in its infancy contributes about 8 percent to GDP and employs less than 3 percent of the workforce. Urban-based services sector which has grown rapidly in recent years employs less than one quarter of the economically active work force. Tourism—in which Nepal has an inherited comparative advantage due to its natural beauty—remains undeveloped.

**Table 1: Nepal's average total aid, bilateral and grants aid, 1960-2009**

Year	Total aid (% of GDP)	Bilateral aid (% of total aid)	Grants aid (% of total aid)
1960-69	1.86	96.65	99.89
1970-79	3.87	68.24	71.38
1980-89	10.10	54.65	64.17
1990-99	10.25	60.87	67.68
2000-09	6.84	71.82	81.52
1960-09	6.57	70.75	77.52

Note: aid includes both loan and grants.

Source: Estimated by the authors based on data from OECD/IDS online database.

Bilateral aid remains an important component of Nepal's development budget, although its share has declined—from about 97 percent in the 1960s to around 71 percent by the mid 2000s. Nepal has also attracted aid from multilateral sources. Among bilateral sources India, USA, UK, Canada, Switzerland and China are the major donors, together accounting for over 90 percent share in the total bilateral aid to Nepal by 2006. The United States of America was the first western country to engage in Nepal mainly to keep the communist influence out of the country. To achieve this goal, it offered budgetary supports, helped construct the East-West High highways, executed a number of rural and agriculture development projects, and sent thousands of economic and policy advisors to Nepal. In September 1949, when China invaded Tibet and Aksai Chi (an Indian territory in 1950), India became suspicious about its expansionist policy and a possible security threat through the Nepalese soil. This prompted New Delhi to improve its access to Nepal by investing in transport and communication in Nepal for its own security. Consequently, India channelled a significant amount of aid in developing highways (between the key Indian borders and the major Nepalese towns), developed communication systems and constructed airports in strategic locations, including in Kathmandu (Mihaly, 1965). By the late 1960s, India became Nepal's major development partner despite being an aid recipient country itself. As India's presence in Nepal increased, China and the former Soviet Union began to assist Nepal with a view to reducing its dependence on India. Consequently, they helped established a number of import-substitution industries in the country, including cement, cigarette, textile, sugar, shoes and modern brick factories. In addition, China also took interest in developing highways (namely, Arnica and Kodari Highways) connecting Tibet with Kathmandu and offered commodity aid to reduce Nepal's import dependence on India. Clearly, two regional powers (India and China) and two superpowers (the United States and the former USSR) had their own strategic interests in Nepal which very recently dictated aid flows to the country (GON, *Foreign Aid Policy*, 2002). As donors' self-interests dominated aid agenda it prompted corrupt behavior and discouraged ruling elites to embark on much needed reforms for private sector-led growth. The competing strategic interests of bilateral donors often created political tensions between two neighbors (ie, India and China) and ruling elites in Nepal took advantage of this (see, Mihaly 1965).

A large proportion of development assistance has gone into transport, power and communications sector, attracting about 47 percent of the total aid (Table 2). Social services—which included health, education and drinking water—have been the second largest recipient of aid, absorbing about 23 percent of the total development assistance during 1975-2008. While allocation of about two-third of aid resources to infrastructure and social services is a welcome development, they suffer from mismanagement and inefficiencies. Furthermore, most of these infrastructure and social services facilities are located in major urban areas rather than in rural and remote areas where 80 percent of Nepal’s population live.

**Table 2: Sectoral distribution of foreign aid as a percentage of total aid, (1975-2009)**

Year/Average	Agriculture	Industry and Commerce	Transport, Power and Communication	Social services	Others
1975-1980	18.88	9.45	57.68	13.66	0.4
1981-1985	30.5	7.64	42.96	18.3	0.76
1986-1990	24.56	9.64	46.78	18.02	1.04
1991-1995	29.08	8.56	42.56	19.44	0.38
1996-2000	19.5	1.14	51.94	27.4	0.188
2001-2005	14.18	1.376	40.78	41.6	2.052
2006-2009	13.89	1.0	41.30	43.50	0.31
1975-2009	22.6	6.4	47.4	22.7	0.8

Source: Estimated by the authors based on data from CBS, 1991, 2001 and 2010.

Even though agriculture is the backbone of the economy— in terms of its contribution to the economy and employment creation— it attracts less than one-fourth of total aid (about 23 percent). Industry and commerce sectors absorbed about 10 percent of the total aid until 1980s, but aid to this sector has fallen significantly since Nepal embarked on market-oriented reforms in the late 1980s.

*(b) Politics and Governance in Nepal*

Nepal was ruled by Shah Dynasty for 240 years. During most of this period the country was run by the King in an undemocratic way and people around him enjoyed privileges (Khadka, 1994).<sup>7</sup> With years

<sup>7</sup> It must be mentioned that in a military coup in 1946 Jung Bahadur Rana—a military commander—took over the country without overthrowing the monarchy and established hereditary prime ministership of ‘Rana family’. For 104 years (1846-1950), the Prime Minister became the ruler and the King had no power. The Rana regime ran the county ruthless way. Following the independence of India in the mid 1940s, the late King Tribhuvan— with the help of India and his own people—ended the hereditary prime ministership in 1951 and brought democracy into the country. However, Nepal’s experience with democracy was rather short lived when the late King Mahendra— following the death of his father King Tribhuvan—overthrew the democratically elected government with the help of the army on 15 December 1960. The King took over the power by arguing that the government led by B. P.

of fighting between political parties and the monarchy, a multi-party democracy was declared in 1990. However, the multi-party democracy failed to meet people expectations as political parties became self-centred and ignored the interests of the people they represented, leading to further rise in poverty and inequality by the mid 1990s (Table 3). Rather than strengthening the democratic norms and values by strengthening institutionalisations and governance, political parties themselves engaged in corrupt behaviour (Table 4).

This, together with high poverty and inequality, led to the eruption of civil war in the mid 1990s. In a nation wide demonstration following over a decade of civil conflict led to an end of Shah Dynasty on 15 August 2008 when Nepal was declared as a Republic State. However, the newest Republic State of South Asia is facing considerable political and economic challenges. Like many developing countries governance is a major problem in Nepal and this remains the case even after the declaration of Republic State. For instance, despite deep rooted corruption in the country, no high profile party leaders and government Ministers have never been found guilty in connection with corruption charges.

**Table 3: Incidence of poverty in Nepal<sup>a</sup>**

	1976/7	1995/6	2003/4
Rural areas	33.0	42.0	31.0
Urban areas	22.0	21.0	9.0
Nepal	33.0	43.0	35.0

Sources: World Bank (1998) for 1998 data and CBS (2005) for 1995/96 and 2003/04.

<sup>a</sup>Based on minimum caloric requirement per person per day (ie, 2256 calories).

**Table 4: Corruption index for South Asian countries, 1996-2010**

Year/Country	1996	1998	2000	2002	2004	2006	2008	2010
Nepal	-0.31	-0.35	-0.43	-0.33	-0.73	-0.67	-0.75	-.68
Bangladesh	-0.49	-0.72	-0.94	-1.02	-1.57	-1.26	-1.41	-.99
India	-0.36	-0.29	-0.38	-0.41	-0.34	-0.25	-0.22	-.52
Pakistan	-0.1.04	-0.89	-0.76	-0.83	-1.11	-0.78	-0.76	-1.10
Sri Lanka	-0.27	-0.17	-0.18	-0.21	-0.16	-0.13	-0.14	-.43

Note: The index ranges from -2.5 (most corrupt) to +2.5 (least corrupt).

Source: Kaufmann et al. (2008) for data until 2006 and World Bank (2010) for 2008 and 2010 data.

The problem of corruption is compounded by the fact that Nepal does not have a transparent system for monitoring foreign aid resources, making aid effectiveness questionable. The past experience suggests

---

Koirala for de-establishing the society and failing to accelerate growth, and introduced an autocratic single party regime known as the *Panchayat System* (widely known as a pro-king party). See Sharma (2011) for a detail discussion on this.

that aid inflows, in the absence of good institutions and governance, prompted corruption and discouraged much needed reforms in policy and institutions which are crucial for growth. Political observers believe that bilateral donors have used foreign aid as a means to keep Shah Dynasty in power in order to achieve their strategic goals rather than accelerating economic growth in the country (Pandey, 2001).

#### 4 Model specification, data and econometric procedures

Following Burnside and Dollar (2000) and Feeny (2005), we use the following model to investigate the link between aid, policy and growth in Nepal.

$$RGDP = \beta_0 + \beta_1 SAV + \beta_2 AID + \beta_3 LAB + \beta_4 OPN + \beta_5 FP + \beta_6 MP + \beta_7 DUM + \mu$$

where RGDP represents growth in real GDP, SAV is savings<sup>8</sup>, AID is foreign aid and LAB represents labor force. OPN, FP and MP represent openness, fiscal policy and monetary policy respectively. DUM is a democracy dummy, the value of DUM is 0 for 1965-89 periods (autocratic regime) and 1 for 1990-2008 (democratic regime).  $\mu$  is an error term. Note that rather than using a single policy index as in Burnside and Dollar (2000) —which has raised significant controversy in recent years<sup>9</sup>— we rely on three separate policy variables (namely, openness, fiscal policy and monetary policy) to capture their effects on long run growth. See Appendix I for definition of variables and data sources.

The Autoregressive Distributed Lag (ARDL) approach to cointegration is used for the econometric procedure. One of the advantages of ARDL approach is that it can be used irrespective of whether the regressors are I(1) or I(0), and thus it avoids the pre-testing problem of unit root (Pesaran and Pesaran, 1997).

The approach uses the error correction version of the ARDL, as follows:

$$\Delta Y_t = \alpha + \sum_{i=1}^{m-1} b_i \Delta Y_{t-i} + \sum_{i=0}^{m-1} c_i \Delta X_{t-i} + d_1 Y_{t-m} + d_2 X_{t-m} + \mu_t$$

where  $\alpha$  is a vector of constants,  $Y_t$  is vector of endogenous variables,  $X_t$  is a vector of explanatory variables and  $b$  and  $c$  are matrices of parameters.

There are two stages in the ARDL approach to cointegration. The hypothesis of no cointegration is tested in the first stage. The null hypothesis is that the coefficients on the lagged regressors in the error correction form of the underlying ARDL model are jointly zero. That is, there exists no long run relationship between them. The null hypothesis is defined by  $H_0: d_1 = d_2 = 0$  and tested against the alternative of  $H_1: d_1 \neq 0, d_2 \neq 0$ . The approach uses the F-test although the asymptotic distribution of the

---

<sup>8</sup> Following Islam (1992) we use savings instead of investment to avoid the potential endogeneity between aid and investment variables.

<sup>9</sup> For example, when Dalgaard *et al.* (2004) re-estimated the BD (2000) model, they found that in the BD model the interaction between aid and policy was ambiguous and statistically insignificant—a finding similar to Dalgaard and Hansen (2001), Guillaumont and Chauvet (2001) and Easterly *et al.* (2003).

F-statistic in this context is non-standard irrespective of whether the variables are I(0) or I(1).<sup>10</sup> If a long run relationship between the variables is found, in the second stage, the long run and short run parameters are estimated using the ARDL method. We set the lag length equal to two on all variables in the ARDL equation, which is considered a standard practice in empirical analysis. The model is tested using the Schwarz Bayesian Criterion (SBC) for lag selection and diagnostic tests are performed for all equations (see, tables 4 and 5). The model is estimated using the Microfit 4.1.

## 5 Empirical results

Empirical investigation in this section is based on annual data from 1965 to 2008. All variables are converted into natural logarithm. As mentioned earlier, in the first stage of modeling exercise we investigate the existence of a long run relationship between the variables under investigation. In each case, the F-statistic exceeds the critical value of the upper bound and the null hypothesis of no cointegration between the variables is rejected at the 5 per cent level, irrespective of the order of their integration (see Tables 5 and 6 for the results of F-statistics). Having established a long run relationship (ie they are found to be cointegrated) between variables of each model, the regression results are obtained. The long run coefficients for the ARDL models are reported in Tables 5 and 6, while the short run determinants of growth are presented in Tables A1 to G1 in Appendices. Statistically satisfactory results are obtained with good adjusted R-squareds. All models under investigation pass the diagnostic tests at the 5 per cent level, and cumulative sum and cumulative sum square do not detect the presence of structural instability.

**Table 5: Estimated long run coefficients from the ARDL models**

Dependent variable:	Model A	Model B	Model C	Model D
GDP growth				
AID	0.011 (0.584)	0.040 (2.94)**	0.074 (3.151)**	0.064 (2.74)**
SAV	-0.003 (-0.174)	-0.018 (-1.191)	-0.019 (-1.105)	-0.050 (-01.464)
LAB	2.004 (21.849)*	2.513 (20.138)*	2.856 (12.110)*	2.697 (10.676)*
TR	-	0.051 (1.389)	0.048 (1.168)	0.075 (1.262)
M2	-	-0.219 (-4.307)*	-0.346 (-3.912)**	-0.252 (-2.752)**
INF	-	-	-	-0.008

<sup>10</sup> Pesaran and Pesaran (1997) provide appropriate critical F-values. They have used two sets of critical values. The first set assumes that all the variables in the ARDL model are I(1) and the second assumes that they are I(0). This provides a band covering all the possible classifications of the variables into stationary and non-stationary or even fractionally integrated ones. If the calculated the F-statistic is above the upper value of this band, the null hypothesis is rejected indicating cointegration between the variables irrespective of whether they are I(0) or I(1). If the F-statistic falls below the band, the null hypothesis of no cointegration cannot be rejected while a value within the band implies the test is inconclusive.

	-	-	-	(-2.322)**
DUM	0.034 (1.047)	-	-0.042 (-1.404)	-0.025 (-0.779)
Constant	8.080 (51.048)*	7.581 (78.744)*	7.255 (30.214)*	7.248 (27.646)*
F-test (for cointegration)	3.558**	4.491**	3.576**	4.013**
Adjusted R-Square	0.361	0.577	0.668	0.679
Serial correlation	0.632	0.550	0.544	0.428
Functional Form	0.101	0.738	0.745	0.411
Normality	0.003	0.279	0.213	0.236
Heteroskedasticity	0.792	0.309	0.334	0.362

Notes: Numbers in parenthesis are t-statistics. \*, \*\* and \*\*\* indicate statistical significance at the 1 per cent, 5 per cent and 10 per cent level respectively. The F-test for cointegration is the test proposed by Pesaran and Shin (1995). The test for serial correlation is the LM test for autocorrelation, the test for functional form is Ramsey's RESET test, the test for normality is the test proposed by Bera and Jarque (1981), the test for heteroskedasticity is the LM test. Lag length is based on SBC.

Our findings broadly suggest that aid is effective in the presence of sound economic policy, although not all policies are equally important (see, Models B, C & D in Table 5). For instance, we did not find any statistical evidence of the link between openness and aid effective in any of the models. Also, there is no statistical evidence to suggest that democratic regime has any significant effect on aid effectiveness in Nepal.

Model A (in Table 5) reveals that foreign aid does not have statistically significant impact on growth when policy variables (ie, openness, fiscal policy and monetary policy) are not included in the model. When two of the three policy variables (ie, openness and monetary policy) are included in Model B, as expected the coefficient for aid variable has a positive sign and is statistically significant, suggesting that aid in the presence of sound monetary policy is growth enhancing, possibly by creating favorable business climate. The coefficient for foreign aid variable further improves in Model C (from 0.04 to 0.07) and the goodness of fit, as measured by adjusted R-Square, increases (from 0.57 to 0.66) when the democratic dummy (DUM) is included along with openness and monetary policy variable, although the coefficient for democratic dummy is statistically insignificant. In Model D, we include all three policy variables simultaneously (ie, openness, fiscal policy and monetary policy) together with the democratic dummy. With the inclusion of the fiscal policy variable to capture its effect on aid effectiveness, the goodness of fit improves from 0.66 in Model C to 0.67 in Model D. In fact, Model D has the highest goodness of fit as compared to other models. As expected, the coefficients for fiscal and monetary policy variables are negative and statistically significant, indicating that weak fiscal and

monetary policies lower aid effectiveness. Note that the coefficient for democratic dummy is statistically insignificant, although it has a negative sign.<sup>11</sup>

**Table 6: Estimated long run coefficients from the ARDL models with AID interaction term**

Dependent variable: GDP growth	Model E	Model F	Model G
AID	0.218 (3.046)**	0.371 (3.362)**	0.377 (3.178)**
SAV	-0.016 (-1.038)	-0.019 (-1.105)	-0.019 (-1.087)
LAB	2.512 (20.131)*	2.856 (12.110)*	2.864 (11.606)*
TR*AID	0.050 (1.359)	0.048 (1.168)	0.048 (1.119)
M2*AID	-0.225 (-4.380)*	-0.346 (-3.912)**	-0.348 (-3.771)**
INF*AID	-	-	-0.005 (-0.157)
DUM	-	-0.042 (-1.404)	-0.041 (-1.320)
Constant	7.601 (78.290)*	7.255 (30.214)*	7.249 (28.946)*
F-test (for cointegration)	3.858**	3.091**	4.012*
Adjusted R-Square	0.598	0.668	0.667
Serial correlation	0.550	0.554	0.539
Functional Form	0.738	0.745	0.734
Normality	0.279	0.213	0.207
Heteroskedasticity	0.309	0.334	0.341

Notes: see Table 4

The results of the interaction terms between foreign aid and three measures of policy variables are reported in Table 6. Only one interaction term that is statistically significant is the interaction between foreign aid and monetary policy and it has an expected negative sign in all Models (E, F and G). This

<sup>11</sup> This tends to suggest that inability of democratic regime to strengthen governance and institutions has made aid ineffective. This interpretation is consistent with our discussions in Section 3 and observations made by several commentators in the context of aid and growth in Nepal (see, Pandey 2001 and Sharma, 2011).

suggests that weak monetary policy reduces aid effectiveness. These findings are consistent with the results presented in Table 5.

The short run effects of the error correction models (ECM) are reported in Appendix II (see, Tables A1 to G1). The short run impacts of aid on growth are not clear cut, perhaps due to weak aid absorption capacity in the country. It should be noted that the statistically significant error correction coefficient in the short term shows the speed of adjustment back to the long run.<sup>12</sup> In Models E, F and G, the error correction terms are over -0.74, indicating moderate return to the equilibrium growth in the following year.

## 6 Conclusion

This paper contributes to aid, policy and growth literature using historical data from Nepal. The examination of Nepalese experience is particularly interesting as she has been one of the highest recipients of aid among the third world countries. Despite this, it remains a very poor country. This naturally raises a question as to why the country has failed to grow despite huge aid flows. Our findings, as Lord Bauer (1976) argued, tend to suggest that an easy access to foreign aid discouraged ruling elites to develop institutions and embark on a wide range of reforms needed for growth. In this paper we investigate this issue using historical data and Autoregressive Distributed Lag approach to co-integration.

Our findings broadly suggest that aid is effective in the presence of sound economic policies, although not all policies are equally important. In general, monetary and fiscal policies appear to be crucial in making aid effective, while there was no statistical evidence to suggest that openness promotes aid effectiveness. Also, we did not find any statistical evidence to suggest that democratic regime has significant and a positive impact on aid effectiveness. While these findings are interesting and provides useful insights to policy makers and the donor community, they must be treated with a degree of caution given that we have relied on a dummy variable to capture the effects of democratic regime on aid effectiveness. As more data become available future researchers can develop a measurable indicator of democracy to shed light on aid, policy and growth debate.

## References

- Auditor General's Office (2006), *Annual Report 2006*, Kathmandu, Nepal.
- Bauer, P. T. (1976), *Dissent on Development*. London: Weidenfeld and Nicolson.
- Boone, P. (1996), "Politics and the Effectiveness of Foreign Aid", *European Economic Review*, Vol. 40, pp. 289-329.
- Burke, A. and Ahmadi-Esfahani, F. Z. (2006) Aid and growth: A study of South East Asia, *Journal of Asian Economics*, Vol 17 (2), pp. 350-362.
- Burnside, C. and Dollar, D. (1997), "Aid, Policies and Growth", *Policy Research Working Paper 1777*, World Bank, Washington, D.C.

---

<sup>12</sup> That is, the proportion of the disequilibrium in growth in one period is corrected in the next period. The larger the error correction term, the faster the economy's return to the equilibrium following a shock. The value of error correction term should be between 0 and -1. A value of 1 indicates that 100 per cent of the disequilibrium in growth is corrected in the following year.

- Burnside, C. and Dollar, D. (2000), "Aid, Policies and Growth", *American Economic Review*, Vol. 90, pp. 847-68
- Central Bureau of Statistics (1997), *Nepal Living Standard Survey Report 1996*, Vol. II, Kathmandu, Nepal.
- Central Bureau of Statistics (CBS) (2007), *Statistical Yearbook Nepal*, Kathmandu, Nepal, various issues.
- Central Bureau of Statistics (2005), *Poverty Trends in Nepal*, <http://www.cbs.gov.np/Others/Poverty%20Assessment.pdf> (Downloaded on 15 Oct 2011).
- Clement, M, Radelet, S. and R. Bhavnani (2004), "Counting Chicken When They Hatch: The Short-Term Effects of Aid on Growth", *Centre for Global Development Working Paper 44*, Washington DC.
- Collier, P. and D. Dollar (2001), "Can the World Cut Poverty in Half? How Polic Reform and Effective Aid Can meet International Development Goals", *World Development*, Vol. 29 (11), PP: 1787-1802.
- Collier, R.B. (1999), *Path Towards Democracy: Working Class and Elites in Western Europe and South America*, New York, Cambridge University Press.
- Dalgaard CJ, H. Hensen and F. Trapp (2004), "On the Empirics of Foreign Aid and Growth", *The Economic Journal*, 114: F191F-226.
- Easterly, W., Levine, R. and Roodman, D. (2003), "A Comment on Burnside and Dollar's Aid, Policies and Growth (2000)", *Working Paper 26*, Centre for Global Development.
- Feeny, S. (2005), "The Impact of Foreign Aid on Economic Growth in Papua New Guinea", *The Journal of Development Studies*, Vol 41, pp: 1092-1117.
- Friedman, E., Johnson, S., Kaufmann, D., and Zoido-Lobaton, P. (1999), "Dodging the Grabbing Hand: The Determinants of Unofficial Activity in 69 Countries", *Journal of Public Economics*, Vol 76, pp: 459-93.
- Government of Nepal (GON) (2002), *Foreign Aid Policy*, Ministry of Finance, Kathmandu, Nepal.
- Griffin, K. and Enos, J.L. (1970), "Foreign Assistance: Objectives and Consequences", *Economic Development and Cultural Change*, Vol. 18, pp: 313-27.
- Griffin, K. (1970), "Foreign Capital, Domestic Savings and Econometric Development", *Oxford Bulletin of Economics and Statistics* Vol. 32 (1970), pp: 99-112.
- Grossman, H. I., (1992), "Foreign Aid and Insurrection", *Defence Economics*, Vol 3, pp: 275-288.
- Hanson, H. and F. Trap (2000), 'Aid Effectiveness Dispute', *Journal of International Development*, Vol. 12, PP: 375-398.
- Hanson, H. and F. Trap (2001), 'Aid and Growth Regression', *Journal of Development Economics*, Vol. 64, PP: 547-570.
- Kaufmann D., Kraay A., P. Zoido-Lobaton (1999) *Governance Matters*. World Bank Policy Research Working Paper No. 2196, Washington, DC.
- Kaufmann D., Kraay A. (2004) *Governance and Growth: Causality which way?* <http://www.worldbank.org/wbi/governance/govdata2001.htm> (downloaded on 4 Nov 2004).
- Kaufman, D., A. Kraay and M. Mastruzzi (2008), *Governance Matters VIII: Governance Indicators for 1996-2007*. World Bank: Washington, DC.
- Mihaly, E. B. (1965), *Foreign Aid and Politics in Nepal*, Oxford University Press, New York.
- Khadka, N. (1994), *Politics and Development in Nepal Some Issues*, Nirala Publications, New Delhi.

- Khadka, N. (1997), *Foreign Aid and Foreign Policy: Major Powers and Nepal*, Vikash Publishing House, New Delhi.
- Knack, S. (2001), "Aid Dependence and the Quality of Governance: Cross-Country Empirical Tests", *Southern Economic Journal*, Vol 68, pp: 310-329.
- Maren, M. (1997), *The Road to Hell: The Ravaging Effects of Foreign Aid and International Charity*, The Free Press, New York.
- OECD (2008), <http://www.oecd.org/dataoecd/23/11/1882605.gif> (downloaded on 21 September 2009).
- Panday, D. R. (2001), *Corruption, Governance and International Cooperation: Essay and Impression on Nepal and South Asia*, Transparency International Nepal, Kathmandu.
- Papanek, G. F. (1972), "The Effect of Aid and other Resource Transfers on Savings and Growth in Less Developed Countries", *Economic Journal*, Vol. 82, pp: 934-980.
- Papanek, G. F. (1973), "Aid, Foreign Private Investment, Savings and Growth in LDCs", *Journal of Political Economy*, Vol. 81 (1), pp:120-130.
- Pesaran, H.M., and Pesaran, B. (1997), *Microfit 4.0*, Oxford University Press, England.
- Sachs, J. (2005), *The End of Poverty*, USA: Penguin Group.
- Sharma, K., (2006), "The Political Economy of Civil War in Nepal", *World Development*, Vol.34, pp: 1237-1253.
- Sharma, K. (2011), "Foreign Aid, Economic Development and Politics in Nepal", *Paper presented at 16<sup>th</sup> World Congress International Economic Association*, Tsinghua University, Beijing 2-8 July, 2011.
- World Bank (2000), *Reforming Public Institutions and Strengthening Governance: A World Bank Strategy*, Washington, DC.
- World Bank (2010), *Worldwide Governance Indicators* <http://info.worldbank.org/governance/wgi/index.asp>(downloaded on 2 Aug 2011).

## Appendix I: Definition of variables and data sources

Label	Definition	Data source
RGDP	Growth in real GDP	Economic Surveys, Ministry of Finance, Government of Nepal (various issues), Kathmandu
SAV	Savings, defined as the ratio of domestic savings to GDP	Economic Surveys, Ministry of Finance, Government of Nepal (various issues), Kathmandu
AID	Foreign aid, measured as the ratio of aid to GDP	OECD online data (OECD (2008), <a href="http://www.oecd.org/dataoecd/23/11/1882605.gif">http://www.oecd.org/dataoecd/23/11/1882605.gif</a> and Economic Surveys, Ministry of Finance, Government of Nepal (various issues), Kathmandu
LAB	Labour force, defined as number of economically active population	Central Bureau of Statistics, Statistical Yearbook Nepal (various issues)
OPN	Openness, defined as trade as percentage of GDP	World Bank and OECD Databases
FP	Fiscal policy, as defined by inflation rate	Quarterly Economic Bulletin, Nepal Rastra Bank,
MP	Monetary policy, as proxy by M2	Quarterly Economic Bulletin, Nepal Rastra Bank,

Appendix II: ECM representation of the ARDL (Model A-G)

**Table A1: ECM representation of the ARDL (Model A)**

Dependent variable: dRGDP growth	Model A
dRGDP growth (-1)	0.432 (2.839)**
dAID	0.006 (0.615)
dSAV	-0.002 (-0.172)
dLAB	1.137 (3.568)*
dDUM	0.019 (1.031)
Constant	4.584 (3.761)*
ecm (-1)	-0.567 (-3.722)*

Note: Numbers in parenthesis are t-statistics. \* and \*\* indicate statistical significance at the 5 per cent and 10 per cent respectively.

**Table B1: ECM representation of the ARDL (Model B)**

Dependent variable: dRGDP growth	Model B
dAID	0.032 (2.645)**
dSAV	-0.014 (-1.196)
dLAB	0.248 (0.295)
dTR	0.041 (1.474)
dM2	-0.175 (-3.860)*
Constant	6.067 (5.307)*
ecm (-1)	-0.801 (-5.357)*

Note: Numbers in parenthesis are t-statistics. \* and \*\* indicate statistical significance at the 5 per cent and 10 per cent level respectively.

**Table C1: ECM representation of the ARDL (Model C)**

Dependent variable: dRGDP growth	Model C
dAID	0.010 (0.523)
dAID (-1)	-0.037 (-1.73)
dSAV	-0.014 (-1.109)
dLAB	-0.273 (-0.303)
dTR	0.036 (1.126)
dM2	-0.161 (-3.036)*
dM2 (-1)	0.111 (2.197)**
dDum	-0.031 (-1.493)
Constant	5.438 (4.238)*
ecm (-1)	-0.749 (-4.466)*

Note: Numbers in parenthesis are t-statistics. \* and \*\* indicate statistical significance at the 5 per cent and 10 per cent level respectively.

**Table D1: ECM representation of the ARDL (Model D)**

Dependent variable: dRGDP growth	Model D
dAID	0.041 (2.988)**
dSAV	-0.029 (-2.047)**
dSAV (-1)	0.021 (1.945)
dLAB	1.754 (4.381)*
dTR	0.049 (1.385)
dM2	-0.206 (-3.671)*
dM2 (-1)	0.100 (1.820)
dINF	-0.005 (-2.548)**
dDum	-0.016 (-0.792)
Constant	4.713 (4.186)*
ecm (-1)	-0.650 (-4.437)*

Note: Numbers in parenthesis are t-statistics. \* and \*\* indicate statistical significance at the 5 per cent and 10 per cent level respectively.

**Table E1: ECM representation of the ARDL (Model E)**

Dependent variable: dRGDP growth	Model E
dAID	0.173 (2.759)**
dSAV	-0.012 (-1.039)
dLAB	0.151 (0.181)
dAID*TR	0.017 (0.509)
dAID*M2	-0.178 (-3.958)*
Constant	6.017 (5.318)*
ecm (-1)	-0.791 (-5.352)*

Note: Numbers in parenthesis are t-statistics. \* and \*\* indicate statistical significance at the 5 per cent and 10 per cent level respectively.

**Table F1: ECM representation of the ARDL (Model F)**

Dependent variable: dRGDP growth	Model F
dAID	0.135 (2.082)**
dAID (-1)	-0.149 (-2.398)**
dSAV	-0.014 (-1.109)
dLAB	-0.273 (-0.303)
dAID*TR	0.036 (1.264)
dAID*M2	-0.161 (-3.035)*
dAID*M2 (-1)	0.111 (2.197)**
dDUM	-0.031 (-1.493)
Constant	5.438 (4.238)*
ecm (-1)	-0.749 (-4.466)*

Note: Numbers in parenthesis are t-statistics. \* and \*\* indicate statistical significance at the 5 per cent and 10 per cent level respectively.

**Table G1: ECM representation of the ARDL (Model G)**

Dependent variable: dRGDP growth	Model G
dAID	0.139 (1.996)**
dAID (-1)	-0.149 (-2.356)**
dSAV	-0.014 (-1.100)
dLAB	-0.205 (-0.202)
dAID*TR	0.035 (1.200)
dAID*M2	-0.162 (-2.973)**
dAID*M2 (-1)	0.112 (2.162)**
dAID*INF	-0.004 (-0.158)
dDUM	-0.030 (-1.381)
Constant	5.400 (4.061)*
ecm (-1)	-0.744 (-4.296)*

Note: Numbers in parenthesis are t-statistics. \* and \*\* indicate statistical significance at the 5 per cent and 10 per cent level respectively.