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Occasional Paper April 2008 Number 20

NEPAL RASTRA BANK

The Editorial Board, *Economic Review: Occasional Paper* (ISSN 1608-6627), has the pleasure of releasing this twentieth issue of the Review on the occasion of the 53rd Anniversary of the Nepal Rastra Bank (NRB). This issue incorporates analytical articles from the staff of the NRB and academicians outside the NRB on contemporary issues of the economy.

Though the articles are reviewed by the Editorial Board, the Board does not guarantee the accuracy of the data and analytical results along with their implications. Moreover, the views and interpretations included in the articles are those of the authors and do not necessarily reflect and represent the views and policies of the NRB. The Editorial Board would also like to thank Dr. Nephil Matangi Maskay, Deputy Director, Mrs. Sushma Regmi, Deputy Director, Dr. Bishnu Prasad Gautam, Assistant Director, Mr. Amar Ratna Bajracharya, Supervisor (Computer), Mr. Sanu Bhai Maharjan, Supervisor (Computer) and Mr. Durga Raj Kafle, Head Assistant, Research Department for their valuable assistance in the publication of this issue.

The Editorial Board invites applications of quantitative, econometric, and analytical tools and techniques as developed by the authors of the articles to draw on conclusions and suggestions to be most useful to the readers. Those interested in contributing analytical articles to the *Economic Review* on any pertinent subject of the economy such as money, banking and finance, trade and balance of payments, government finance, broad-based and sustained economic growth, socio-economic development, etc. are requested to submit the articles for consideration in the forthcoming issues.

Any comments, queries, suggestions, and correspondence should be directed to the Editorial Board.

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Contribution of Foreign Employment and Remittances to Nepalese Economy

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This paper assesses the contribution of foreign employment and remittances to Nepalese economy and also identifies the information needs and gaps. An attempt is also made to assess the role of remittances in poverty reduction. At a time when the country's major economic indicators are not favorable, the remittances have played a vital role in maintaining macro economic stability and keeping the economy afloat. Though remittances sent home by migrant workers is a boon to the economy, the facilities are inadequate to back up the increasing trend of migration. Inadequate information on foreign employment, lack of skill training and lack of assurance of safe working environment and rights of the migrant workers have obstructed foreign employment.

Formulation and effective implementation of pro poor migration policy is the need of today. The government should play a proactive role to promote foreign employment by inducting and adhering to the policy of economic diplomacy. Replicating the best practice of the region has to be endorsed in our national context for promotion and regularization of foreign employment, to encourage official transfer of remittance and to streamline the asset and skill of the returnees for the economic development of the country.

I. INTRODUCTION

Labor mobility has been an important and essential feature of economic and social development throughout the human history. In 2006, migrant workers in the industrial countries sent home more than $300 billion, nearly three times the $104 billion received as foreign aid by the developing countries.[1] This figure exceeds the foreign direct investment to developing countries which stands at $167 billion. Among the recipients, India ranks at the top with the remittance inflow of $24.5 billion, followed by Mexico ($24.2 billion), China ($21 billion), Philippines ($14.6 billion) and Russia ($13.7 billion).

Labor migration for overseas employment has rapidly increased, particularly after globalization. The Nepalese economy is increasingly becoming dependent on remittance sent home by migrant workers. At a time when the country's major economic indicators

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[1] This is taken from http:www.un-instraw.org/en/grd/.

do not display a good picture, remittances have played a vital role in keeping the economy afloat. Instability and insecurity are crucial problems for the low economic growth of 2.5 percent (Ministry of Finance, 2007a). The overseas migration and remittances have been instrumental in poverty alleviation as well as for improving the living standards of the people (Seddon et al., 1999 and Shrestha, 2004).

The objectives of the paper are to assess the contribution of foreign employment and remittances to Nepalese economy and also to identify the information needs and gaps. An attempt is also made to assess the role of remittances in poverty reduction. For this purpose, data of Nepal Rastra Bank, Department of Labor and Employment Promotion and National Planning Commission/Central Bureau of Statistics have been utilized. For assessing the macro economic contribution of remittances, the paper has examined the data covering the period 1990/91 to 2005/06.

The next section analyzes some data on the Nepalese working abroad as well as the factors responsible for the large-scale out-migration. Section III examines the remittance economy of Nepal followed by some constraints related to foreign employment and remittances. Section V highlights the policies and programs pertaining to foreign employment and remittances under the Three-Year Interim Plan as well a brief summary of the Foreign Employment Act, 2007. Before concluding, the paper considers some policy options.

II. NEPALESE WORKING ABROAD

The number of job aspirants in foreign land increased dramatically, especially after the restoration of democracy. The Labor Act, 1985 came as a boon for facilitating foreign employment and opening up avenues for the private sector. With the enactment of Foreign Employment Act, 1985 and arrangement of distributing passport to the potential migrant workers by the District Development Offices, accompanied by higher demand for labor created by the oil boom in the Gulf, the Nepalese started to migrate beyond India, particularly to the Gulf. [2]

The total number of migrant workers (excluding those migrating to India) increased to 940,824 in 2006/2007 from 1,926 in 1992/93 (Table 1). By the end of 2007, the total number crossed one million. The official figures of those working abroad are felt to be grossly underestimated (Graner and Seddon, 2004 and Gurung, 2002). The official figures capture only those passing through formal procedures. In many cases, those who travel abroad for other reasons (for instance, for study) may be involved in paid employment.

The number of workers going abroad for employment has been steadily increasing as per the data provided by the Department of Labor and Employment Promotion. In 2006/07, the number of workers going overseas for employment was 214,094 compared to 2,159 in 1994/95.

[2] Foreign Employment Act, 1985 identified the number of countries to which Nepalese were encouraged to migrate for employment.

TABLE 1: Number of Nepalese Workers Abroad

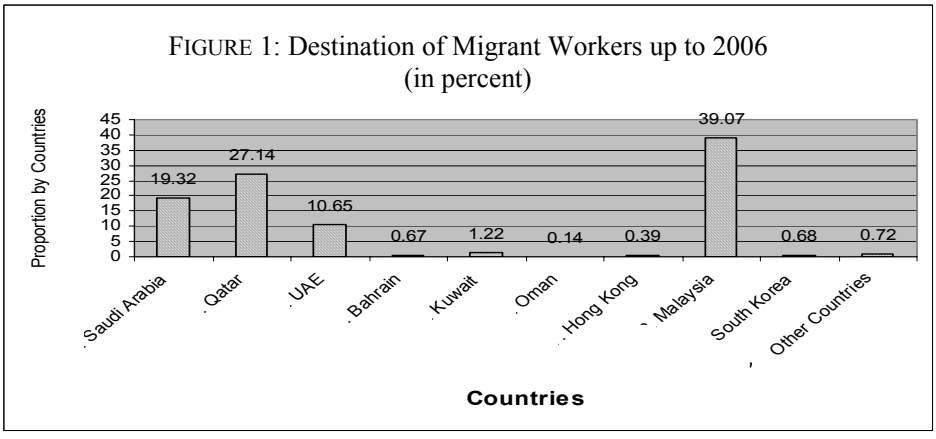
Year	Number of Job Seekers
1994/95	2,159
1995/96	2,134
1996/97	3,259
1997/98	7,745
1998/99	27,796
1999/00	35,543
2000/01	55,025
2001/02	104,739
2002/03	105,055
2003/04	121,769
2004/05	139,696
2005/06	182,043
2006/07	214,094

Source: Department of Labor and Employment Promotion

The major factor contributing to large-scale out-migration from Nepal is higher growth of labor force and limited employment opportunities outside the farm sector. The 3 percent annual growth of labor force is not matched by additional job creation; moreover, the low salary structure in the economy, insecurity in the rural areas, and higher demand for the labor in the industrialized Asian and Middle-east countries are the other contributing factors. The Government's liberal policies, accompanied by mushrooming growth of the manpower agencies have also played instrumental roles. Currently, 700 manpower agencies are operating in Nepal. Furthermore, food scarcity, distorted peace and social order are strong push factors for increasing out migration. The poor people from the Mid West and Far West are migrating to India and those who can manage the funds are migrating beyond India.

Figure 1 illustrates the major destinations of the Nepalese workers in 2006. Malaysia (39.07 percent), Qatar (27.14 percent) Saudi Arabia (19.32 percent) and UAE (10.65 percent) constitute the major destinations.

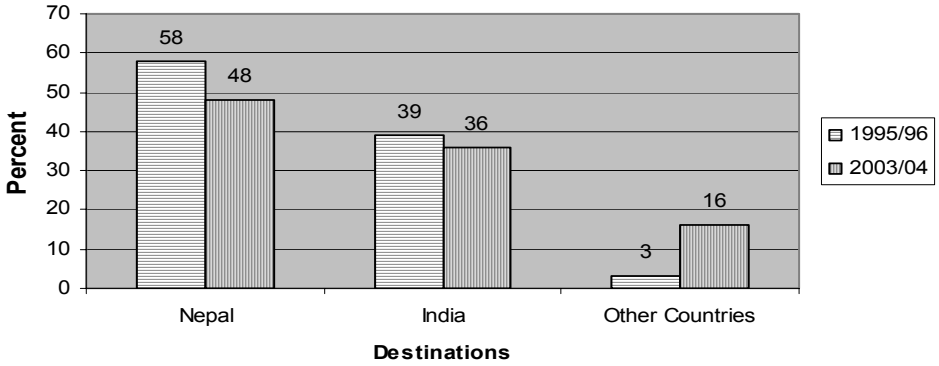
FIGURE 1: Destination of Migrant Workers up to 2006
(in percent)



Source: Ministry of Finance (2007).

Figure 2 shows a large shift in the destination of migrants in 2003/04 compared to 1995/96. The share of internal migration and migration to India decreased while the share of overseas migration went up.

FIGURE 2: Internal Migration, Migration to India and Overseas Migration



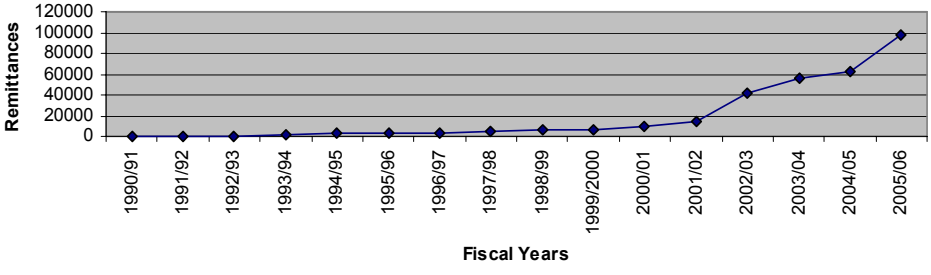
Source: NPC/CBS (2005).

For the poorest 20 percent of the population, the internal migration declined but India remains the most popular destination for this group (CBS, 2005). For the richer households, the proportion of the migrants working in India declined while it increased for other countries.

III. REMITTANCE ECONOMY OF NEPAL

The official record shows a dramatic increment in the incoming remittance. It increased considerably from Rs. 549.7 million in 1990/91 to about Rs. 97,688.5 million in 2005/06. Remittance soared, particularly after 2001/02 (Figure 3).

FIGURE 3: Remittances Sent by the Nepalese Migrant Workers (in Rs. Million)

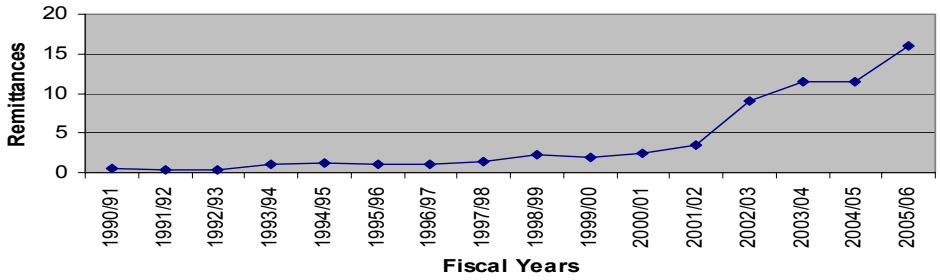


Note: The remittances data prior to 2000/01 include pensions but do not include estimated remittances.
Source: Ministry of Finance, Various Issues of Economic Survey.

Despite the huge trade deficit, the country is having surplus in the current account because of the growing remittances. The share of remittances in the current account receipts soared from 27.4 percent in 2000/01 to 33.6 percent in 2005/06 (Pant, 2006). Even with the widening export import gap and with mounting burden of debt servicing, it appears that remittance is saving the country from balance of payment crisis.

The increasing volume of remittances and its contribution to the national economy in the recent years is reflected in the increasing remittance to GDP ratio (Figure 4). The remittance to GDP ratio increased from 0.5 percent in 1990/91 to about 11 percent in 2004/05 and further to 16 percent in 2005/06 (Figure 4). This ratio is relatively high compared to India and other South Asian countries.

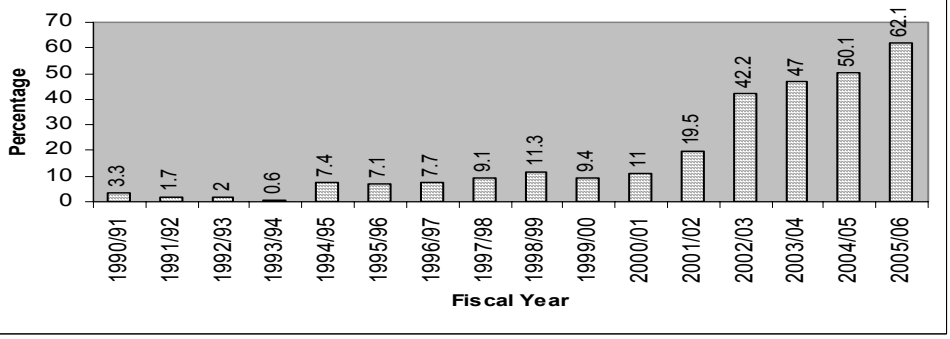
FIGURE 4: Growth in Remittances to GDP Ratio
(in percent)



Source: Ministry of Finance.

Remittance has relaxed the foreign exchange constraint of the country. The share of remittance in total foreign exchange increased quite considerably over the years from less than 2 percent in 1991/92 to more than 60 percent in 2005/06 (Figure 5). Higher growth of convertible currency reserves of the banking system in the recent years has allowed NRB to build the official reserve to higher level reducing its vulnerability to external shocks (Pant, 2006).

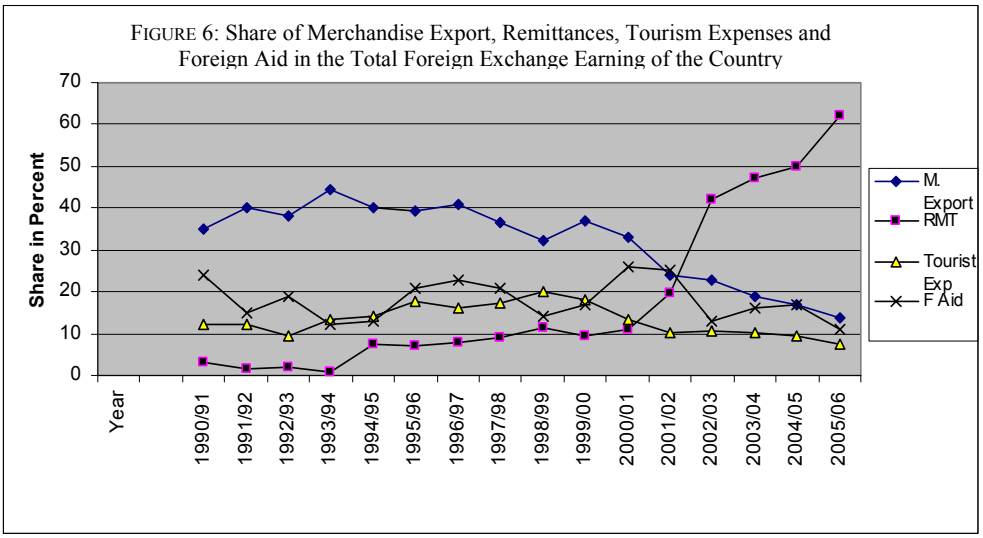
FIGURE 5: Remittance as % of Total Foreign Exchange Earning
(in percent)



Source: Ministry of Finance.

Remittances have surpassed the export as the top contributor in terms of foreign exchange earning, particularly after 2000/01. Similarly, the share of travel receipts in the total foreign exchange earning went down drastically with the rapid rise in the remittances and slow growth of tourism industry.

FIGURE 6: Share of Merchandise Export, Remittances, Tourism Expenses and Foreign Aid in the Total Foreign Exchange Earning of the Country

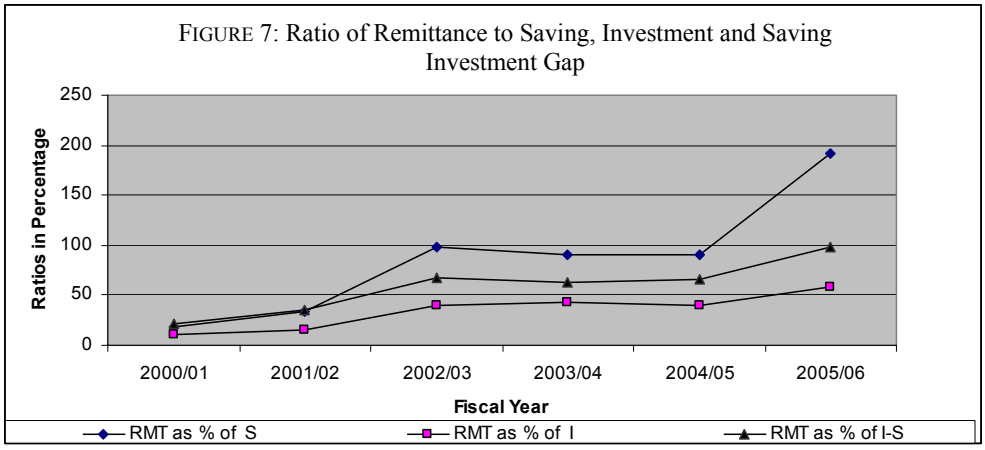


Source: Ministry of Finance, Economic Survey, Various Issues.

External debt is growing at a rapid tempo resulting in an alarming growth in debt servicing. Nepal's present day challenge is the ever-increasing outstanding debt and increasing burden of debt servicing. In 2005/06 a sum of Rs. 14 .3 billion was utilized for meeting the principal repayment. Of this, 49.0 percent was for servicing the external debt which was to be paid in terms of foreign exchange. External debt servicing increased by 17.4 percent compared to the previous year (Ministry of Finance, 2007). However, Nepal has been able to handle debt servicing comfortably due to increased inflow of remittances.

The ratio of remittances to saving, investment and saving investment gap is increasing with higher rate of growth of remittances (Figure 7). This shows that Nepal's dependency on foreign aid for filling the saving investment gap can be lessened to a greater extent through strategic plans and programs for mainstreaming the incoming remittance to financial system and for their productive use. In this respect replicating the successful programs launched by labor exporting Asian countries such as Sri Lanka, Bangladesh, India, Pakistan, Thailand, and Indonesia could be helpful.

FIGURE 7: Ratio of Remittance to Saving, Investment and Saving Investment Gap



Source: Ministry of Finance (2007).

Remittances contribute substantially to maintain macro economic stability. It is one of the six pillars of economy, the others being investment, trade, agriculture, water and tourism. At the household level, it helps to smoothen consumption and investment in human and physical capital. Remittances also generate benefits to the community, if they are spent on locally produced goods and services, and helps poverty reduction since the money is utilized for rural development. In Nepal's case, the penetration of the remittances into the remote villages has helped in poverty alleviation. The IMF country report states that in the absence of remittance, the present level of poverty would be 36 to 37 percent (IMF, 2006).

Poverty reducing and income distribution effects of remittance are significant (Barhan and Bocher, 1998). Generally the recipients of the remittance in the poor countries are often from the low-income households. It permits the households to increase their consumption level, enables better health care, nutrition, housing and education (NRB, 2001, World Bank, 2005). Migration and remittances influence the consumption through different mechanisms such as via higher local wages, higher demand for the services and locally produced goods, higher investment in family health and education.

During the period between 1995/96 and 2003/04, the average annual GDP growth was slightly higher than the population growth. The poverty level decreased by 6 percentage points from 38 percent in 1995/06 to 32 percent in 2003/04.

Regional pattern of remittance helps to explain regional pattern of poverty trends. Even though the proportion of households receiving remittance increased in all regions, the actual amount of remittance has declined in the rural eastern hills of Nepal. And the rural eastern hill is the only region where the poverty level increased between 1995/96 and 2003/04. The rest of the region experienced positive growth in remittance inflows, and this was accompanied by the fall in poverty levels (Table 2).

TABLE 2: Regional Patterns of Poverty and Remittances in Nepal
(Per person per year)

	Poverty Levels		Amount of Remittance Among the Recipients (1995/96 Rs. per Person per Year)		
Region	1995/96	2003/04	1995/96	2003/04	% Change
Kathmandu	4.3	3.3	6269	13230	111
Other urban areas	31.6	13.0	2701	7754	187
Rural western hills	55.0	37.4	2832	4297	52
Rural eastern hills	36.1	42.9	3943	3818	-3
Rural western terai	46.1	38.1	1773	5540	212
Rural eastern terai	37.2	24.9	2668	5812	118

Source: CBS/NPC (2005).

An estimate based on data for 72 districts indicate that higher the increase in the average amount of remittances in a district, the faster is the rate in the poverty reduction. The regression analysis indicates that the increase in remittances accounts for 6.2 percent decline in poverty (Lokshin et al, 2005). The study shows that the remittances from abroad played a significant role in reducing poverty. The analysis concluded that if the amount of remittances remained unchanged, the aggregate poverty rate would have declined by 3.9 percentage point rather than 6.2 percentage points.

A cross country model relating growth, poverty and remittance predicts that on average 10 percent increase in total remittance should reduce the poverty by 0.9 percent (Maimbo and Adams, 2005). The model has used the data for Nepal and other South Asian countries. The study found that the decline in poverty in response to increase in per capita consumption expenditure is quite low in Nepal as compared to other countries. This calls for a detailed investigation of the relationship between migration and remittance and between remittance and poverty.

There are also other effects of foreign employment and remittance inflows. Besides the positive impact, they create inequality in the distribution of income. During the period between 1995-1996 to 2003-2004 the Gini Coefficient rose from 34.2 to 41.4, because the growth was not equal across the groups and the regions. For example, though the proportion of remittance receiving households increased in the lower quintile households compared to higher quintile households, the per capita remittance increased at a higher rate amongst the higher quintile households. The higher quintile groups have relatively wider access to high paying foreign jobs (NPC/CBS, 2005).

Use of Remittance and Skills of Returned Migrants

The major portion of the remittance is used for meeting household use and to payback loans borrowed earlier to go abroad (Seddon and et al 1999 and NRB, 2001). A survey of 832 households in eight districts (which includes four districts of the Far Western Development Region) of Nepal found that the majority of the families were dependent on remittance money (Department of Women Development, 2003).

The utilization of remittances for the improvement of the living standard is documented by several studies (Ashwani, 1999, Wahidin, 1989, Seddon and et al, 1999 and Department of Women Development, 2003). Remittance are typically spent on land and housing. These are safe investment for the households, but in macroeconomic terms, they are non-productive assets, with no lasting impact on the country's real income. Thus while the remittances are beneficial at household and community level, they cannot help long term development of the country without its strategic management.

The total saving out of remittance was about 8 percent which is very low compared to other Asian countries (Amjad, 1989). The saving rate amongst the Nepalese workers is lower as the majority of them are employed in low paying jobs and their marginal propensity to consume is relatively higher. Only the small proportion of the migrants uses the remittance directly for productive investment like agriculture, manufacturing and trade. The major forms of investments are on education of the children, reinvestment of the remittance for further migration and for lending money.

The resources and expertise of the returned migrants could also be a good resource for country's economic development. Nepal does not have authentic data on the numerical dimension of the returned migrants. The study by Nepal Rastra Bank reveals that 47 percent of the returned migrants had learned new skill while working abroad, but only 16 percent had used the skill for income generating activities after their return (NRB, 2001).

IV. Problems Related to Foreign Employment and Remittances

Nepal is receiving billions of rupees sent by Nepalese workers from different parts of the world. It could be many times higher even with the existing number of Nepalese workers abroad if Nepal can strategically and systematically manage the foreign employment process and remittance transfer. The Nepalese migrant workers face a host of hurdles at the home country and their destinations (NRB, 2001, 2007, Bhattarai, 2005, MoLT/UNIFEM, 2003, Ghimire, 1996, Gurung, 2002 and Pant, 2006). The major problems are poor working conditions, lower wage level and rising cost of living in the destination countries, fraud recruitment and lack of social protection. Another principal challenge is migrating through illegal channels, thereby loosing the legal status in the labor importing countries.

The international provisions are there to protect the right of the migrant workers. But both the government and receiving countries do not seem to be sincere to the implementation of the spirit of international provisions. Ratification of UN convention by Nepal will create moral pressure on the labor receiving countries.

Bilateral agreement has not taken place even with some major labor importing countries pertaining to the safety and welfare of the migrant workers. Another problem is lack of working mechanism to address the issues related to international migration like demand verification. Provision of labor attaché in the potential labor receiving countries is still lacking.

V. CURRENT POLICIES AND STRATEGIES TO ADDRESS THE CHALLENGES

The Three-Year Interim Plan

Based on the above discussion, it can be concluded that there are many challenges ahead to make foreign employment safe, organized and more productive. The government has announced strong commitment to institutionalize the foreign employment regime in order to reap maximum benefit and for the protection of those working abroad. This is reflected by various policies and programs under the Three-Year Interim Plan. For effectively managing the foreign employment sector to ensure secured, decent and productive employment opportunities, the Three-Year Interim Plan has adopted the following policies and strategies (NPC, 2007):

- Reforms in the existing legal and institutional provisions.
- Activate diplomatic mechanism to protect the interest and right of the migrant workers.
- Establishment of Labor Commission and Labor Tribunal.
- Separate institutional arrangement for the management of the issues related to the internal labor administration and foreign employment.
- Provision of legal, technical and practical training including pre-departure training, based on the identification of international labor market.
- Life and accidental insurance covering entire contract period for the workers going abroad.
- Labor agreement to be negotiated with the countries which receives Nepalese workers beyond certain threshold.
- Promotion of foreign employment opportunities for women, dalits, janajatis, and other poor communities providing skill training and other facilities.
- Productive use of remittances through the identification of appropriate development.

Identification of potential destination countries, labor agreements with at least five countries on priority basis and updating of information related to the foreign employment are the major programs. Other programs include conducting studies on the effectiveness of different targeted programs implemented for promotion of inclusive foreign employment, feasibility study on the establishment of the Employment Bank and package programs for productive use of remittances and the skill of the returned migrant workers.

VII. FOREIGN EMPLOYMENT ACT, 2007

The long waited new Foreign Employment Act was announced in 2007. The Act has addressed the major issues relating to foreign employment. Many provisions are made under the act for the protection of the right of the prospective workers (at home and abroad) and promotion of their security and welfare, regularization and monitoring of manpower agencies.

Provision of quota for female, dalit, janjati and people from the remote areas, compulsory life insurance for any type of deaths of the migrant workers in the labor receiving countries and the provision of foreign employment welfare fund are important aspects of the new Act. The new Act has removed all gender based discriminatory clauses. The Act has also made the provision of Labor Desk in the national airport and labor attaches in the countries where 5,000 or more Nepalese labors are working. As per the Act, only the license holder can undertake foreign employment dealings, and the government can regulate the manpower agencies. The worker must be sent through the national airport only.

But the crucial question is how far will the provisions in Act be implemented in the practical sense of the term and at what level of commitment. The government's sincerity to address the issues of the labor migrants in the implementation level is found to be very weak in terms of coordination capacity, labor diplomacy and allocation of resources (both financial and human resources).

VIII. Policy Consideration and Research Needs

Based on the above discussion, this overview can be concluded by making a few suggestions that would assist in the formulation of the policies regarding foreign employment of the country.

The skill and the resources of the returned migrants are assets of the country which can be used for development of the economy. The productive use of these skill and asset would automatically result in their rehabilitation (Zachariah et. al., 2002). This requires investigation into their numerical dimensions, skill and accumulated wealth, their investment and saving behavior, and reasons for not utilizing their asset for productive purposes.

Longitudinal macro economic and micro economic case studies of migrant households' consumption could be conducted and analyzed to examine their short and long run consumption behavior in order to explore the precise relationship between their average and marginal propensities to consume. On that basis, one could estimate the volume of potential saving and investment that could be generated from households dependent on remittances to design appropriate financial packages (bonds, equity and mutual funds) for their saving and investment needs. Fiscal and refinance policies further could be tailored to support the effective use of remittances

A recent World Bank report has listed a variety of programs implemented by various countries to promote formal transfer of remittances and to mainstream the remittances for development programs (World Bank 2006). While making policy decisions, one should consider the best practices of other countries, particularly the Asian countries (Akhtar, 2007 and Afsar, 2007). The schemes like business counseling, entrepreneurship development program and concession on the import of the machineries and equipments and supplementary loan to establish manufacturing establishment can be launched**.** Identification of the development projects in which the returnees have assurance of reasonable return could be a key to the success of the utilization of saving/expertise of the returned migrants.

The government should give all possible incentives to encourage official transfer of remittance. In this regard the lesson learned from other countries could serve as

guidelines. For example in Sri Lanka and in the Philippines, no charge is levied on the renewal of passport, if the application is attached with the voucher of bank transfer of remittance (World Bank, 2006 and Mambo and et al, 2005).

Philippines and Mexico introduced pension plans for returned migrants. Loans are also given to immigrant workers' families whose repayment could be made with the remittance sent by the migrants abroad. Credit is provided to the migrant workers at the time of departure, secured through solidarity groups.

Thailand offers investment schemes and business set up advisory services through a foundation. India has given preferential access to capital goods and raw material imports for recent returnees starting productive activities.

Implementing different support programs ensuring conducive environment for returnees to invest their income and skill in productive purposes is just as important as developing effective migration and effective remittance policies. Higher domestic investment from remittance income can be facilitated through long term saving and facilitating credit plans to finance small business start-ups.

Nepalese carpenters, masons and other artisans are not able to compete with those coming from the Philippines, Thailand, South Korea, and India. There is an urgent need to upgrade their technical competence. The Nepalese trade unions and FNCCI at all district levels can operate training and counseling centers focusing on the rights and needs of the workers and as per the demand in the potential labor importing countries.

Evidences indicate that the ultra poor do not migrate to overseas because of lack of financial resources, information and social networks. It cannot be left to market forces only. In such a scenario the government should undertake pro poor intervention to target ultra poor to empower them through vocational education, financial support, skill training for targeted market as well as language and cross-cultural skill to prepare them for jobs abroad. In this regard the government has provided credit facilities and quota for the poor and disadvantaged. However, the effectiveness of these provisions is yet to be investigated.

Opening up of new missions in countries with substantial Nepalese workers, equipping the missions with additional personnel, budget, and modern tools such as satellite telephones and computerized database of Nepalese working in a particular country and their home addresses, emergency funds for crisis/rescue operation, etc. are urgently needed to meet the future challenges.

Lobbying for the safety and protection of the rights of Nepalese workers and their better pay and working conditions is also crucial. Bilateral Labor Pact between Nepal and Qatar which came into force from January 20, 2008 ensures better pay and lessens the cost of migration to Qatar. It can be expected that this pact, if implemented with commitment from both the governments, will ensure the rights and safety of large number of Nepalese migrant workers in Qatar. The government should sign such types of agreements with other major labor importing countries. The current plan seeks to negotiate labor agreement with at least five labor importing countries on priority basis.

Designing pro poor policies requires identification of the factors associated with migration such as caste ethnicity, economic status, education/ training, age, sex, marital status, occupation, household asset like land holding. It is also necessary to document the information on the destination, types of work available abroad, average salary, and the problems encountered in the process of migration.

Language barriers and lack of awareness on banking channels may hinder the migrant workers from using the banking channels for transfer. Carefully designed financial education program can help migrants to overcome the problem and use formal financial institutions (World Bank, 2006 and NRB, 2007).

IX. CONCLUSION

In Nepal, remittances have emerged as one of the premier sources of foreign exchange, and in recent years they have been an important avenue of support for family members remaining at home. It has been already demonstrated that remittances sent by the migrant workers is an effective tool for poverty reduction. Though foreign employment is boon to the economy, the facilities are inadequate to back up the increasing trend of migration. Inadequate information on jobs abroad, lack of skill training, pre-departure preparation, lack of assurance of safe working environment and right of the migrant workers are the other constraints for boosting foreign employment and remittances.

The formulation and effective implementation of pro poor migration policy is the need of today. The government should play proactive role to promote foreign employment by inducting and adhering to the policy of economic diplomacy. Replicating the best practice of the region has to be endorsed in the national context for promotion and regularization of foreign employment, to encourage official transfer of remittance and to streamline the asset and skill of the returnees for the economic development of the country.

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Private Savings Behaviour in Nepal: Long-term Determinants and Short-run Dynamics

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With a view to explain the long-run and cyclical behaviour of private savings in Nepal during the period 1974-2005, the study employs an error-correction framework. The study estimated 0.309 as marginal propensity to save with the corresponding value of 0.365 in the long-run. The estimation results reveal that real income, real government savings, real foreign savings, real interest rates, and labour market constraints play important roles in determining private savings in the short and long-run. The findings of the study suggest that there is a need to focus on development policy which increases productive base of the economy in order to increase income growth and reduce unemployment. It is also important to note that the real interest rates have a positive influence on the private savings and can be taken as an important policy variable in Nepal.

I. INTRODUCTION

The mobilization of savings is important for economic growth. It is considered to be a precondition for many developing countries. Many of the periodic plans in Nepal have also emphasized the need for accelerating the growth and mobilization of domestic saving. Increasing growth means needs for capital accumulation which requires savings. "The central problem in the theory of economic development is to understand the process by which a community which was previously saving and investing 4 or 5 percent of its national income converts itself into an economy where voluntary saving is running about 12 to 15 percent of the national income or more" (Lewis, 1954:416). The growth of domestic savings, by facilitating the process of capital accumulation, ensures the realization of economic growth.

The critical role of savings and capital in creating income growth has been well established in industrial countries. The sources of growth analysis in nine countries (Great Britain., Germany, Sweden, Canada, Italy, U.S, Japan France and Norway) have shown that expansion in physical capital input alone has been responsible for about half the growth in the aggregate income of nine developed countries from 1960-1975. Many

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studies point out to the very low investment rate in the United States in the 1970's and early 1980's as a prime reason, along with a lagging productivity growth for its low rates of per capita income growth since 1970, relative to Japan and Western Europe. Indeed by 1983, gross domestic investment was 17 percent of GDP in the United States, a ration well below the 20 percent figure for 1965, and one of the lowest of all the industrial countries.

As in Ricardo's theory, any thing that raises urban wages cuts into profit, and hence into savings and economic growth. Some of the factors that could have this effect include a rise in the price of food relative to the price of manufactured goods, by trade unions or government to bargain for or legislate increased modern sector wages.

Various sources of savings are available to meet the development requirements. The total available savings (S) constitutes simply the sum of domestic savings (S_d) and foreign savings (S_f). Domestic savings may be grouped under two components, government savings (S_g) and private sector savings (S_p). Government savings consists primarily of budgetary savings (S_{gb}) that arises from any excess of government revenues over government consumption. The private domestic savings arises from two sources: corporate savings (S_{pc}) and household savings (S_{ph}). The corporate savings involve corporate retained earning after taxes and dividend to shareholders. Similarly, household savings includes household income not consumed nor paid in tax.

Foreign savings also come in two basic forms: official savings or foreign aid (S_{fo}), and private foreign savings (S_{fp}) which indicates for external commercial borrowing and foreign direct investment. It means debt and equity finance. Hence Savings (S) is a sum of domestic and foreign Savings ($S_d + S_f$) = (S_g+S_p) + (S_{fo}+S_{fp}). The status of various types of savings in Nepal is given in the table below.

TABLE 1 : Sources and Status of Savings in Nepal
(Rs in Million and Constant Price, 2000/01)

Year	GDP	Govt Saving As % of GDP	Private Saving As % of GDP	Foreign Saving As % of GDP	Year	GDP	Govt Saving As % of GDP	Private Saving AS % of GDP	Foreign Saving As % of GDP
1974	128371	-1.50	11.53	0.52	1991	257714	1.11	10.08	5.05
1975	134022	-1.03	12.75	0.84	1992	266315	0.15	13.86	3.31
1976	138060	0.36	13.13	1.18	1993	287279	1.88	13.38	5.60
1977	144138	0.56	12.31	1.15	1994	295436	2.05	13.41	4.19
1978	147555	-0.35	11.98	1.31	1995	312158	2.04	12.34	3.09
1979	144138	1.35	9.75	2.47	1996	327818	2.00	12.53	3.11
1980	156164	1.82	9.07	2.32	1997	338941	1.70	12.60	3.10
1981	162057	0.13	9.83	2.50	1998	354506	2.04	12.06	2.16
1982	157239	-1.70	10.25	2.75	1999	375868	2.44	13.28	2.16
1983	172455	-0.60	10.46	3.06	2000	394052	2.22	13.52	1.57
1984	183053	-1.02	15.07	2.86	2001	390743	2.00	10.63	1.40
1985	181650	-0.97	12.64	3.59	2002	408425	2.26	10.26	1.23
1986	189394	-1.00	13.59	3.19	2003	425555	2.52	10.62	0.31
1987	209193	0.62	9.77	5.97	2004	427941	3.09	9.96	0.31
1988	220558	-1.36	13.19	6.90	2005	439856	2.34	9.26	0.56
1989	231413	0.33	7.84	5.91					
1990	246314	-0.31	10.22	5.43					
Average Before Restoration of Democracy	*173281*	*-0.29*	*11.30*	*3.41*	*Average After Restoration of Democracy*	*353507*	*2.07*	*11.71*	*2.23*

Source: Ministry of Finance.

The average GDP at constant price for the period 1991-2005 increased by two times as compared to the average GDP for the period 1974-1990. Before the restoration of democracy, the government savings was found to be very poor and remained at a negative growth rate while it has been positive at 2.07 percent of the GDP after the restoration of democracy. The private savings as percent of GDP has remained to be more or less the same with nearly 11.30 percent for the period 1974-90 and 11.60 percent for the period 1991-2005. In the case of foreign savings, the status remained good before the period of restoration of democracy. It was on average 3.41 percent as compared to 2.23 percent in 1991-2005.

TABLE 2 : Average Size of Savings (Rs. in million constant price, 2000/01)

Period	GDP	Govt. Saving	Private Saving	Foreign Saving	Govt Saving as % of GDP	Private Saving as % of GDP	Foreign Saving As % of GDP	Real Interest Rates
1974-75	131197	-1650	15947	898	-1.26	12.15	0.68	0.74
1976-80	146011	1118	16354	2483	0.77	11.20	1.70	4.35
1981-85	171291	-1424	20129	5080	-0.83	11.75	2.97	1.08
1986-90	219374	-719	23715	12155	-0.33	10.81	5.54	-0.46
1991-95	283781	4212	35892	11992	1.48	12.65	4.23	-0.49
1996-00	358237	7486	45948	8525	2.09	12.83	2.38	2.22
2001-05	418504	10243	42398	3117	2.45	10.13	0.74	-0.20

Sources: Ministry of Finance.

Table 2 shows that the savings performance in Nepal is relatively better in the mid 1990s and late 1980s with regard to all the sources of savings. The government savings together with private and foreign savings was found to be encouraging. The major part of private savings constitutes household savings.

Based on the above background, the objective of this paper is to ascertain the factors affecting savings behavior by formulating an empirical model of private savings behavior to identify the long-run determinants and short run dynamics adjustment of saving around its long run trend from the Nepalese data-base. The next section examines some theoretical considerations followed by a review of some empirical studies. This is preceded by a discussion on the model specification as well as sources of data. The regression results are presented next. The last section concludes the paper.

II. THEORETICAL CONSIDERATIONS

Theories of household savings behaviour were initially developed as part of the post war Keynesian revolution in economic thought to explain savings patterns in industrial countries. The study on household savings behaviour received a substantial focus as they were large and there was an increasing share of net savings in the rich countries (50 percent in 1964 and 93 percent in 1981), and by indications that similar patterns might prevail in less-developed countries (LDCs) as well (World Bank, 1983 as cited in Gillis et al. 1987).

Following the work of Keynes (1936), it was believed that the level of income exerts a positive influence on savings. It means savings was viewed as directly dependent upon current disposable income. The propensity to save out of current disposable income was thought to rise with income. This was known as the Keynesian Absolute Income Hypothesis.

The standard Keynesian short run saving function $S = \alpha + \beta Y^d$ where, S=savings, Y^d = current disposable income. α = constant ($\alpha < 0$), and β = the marginal propensity to save ($0 < \beta > 1$). The constant, α is generally taken to be negative, signifying that at low levels of income, savings will be negative. Under this formulation, savings ratios (savings as a fraction of GDP) should be expected to rise over time in all countries where income is growing. But the historical record in both developed and developing countries provide very weak support for the Keynesian hypothesis (Gillis et al. 1987). It is argued that the Keynesian formulation depicts savings behaviour over the very short term, but it breaks down as a long run proposition. Moreover, the model also does not give importance to the role of interest rates. The economists under Keynesian tradition do not find role of interest rate on private sector decision to allocate income between consumption and saving. Therefore, economists under Keynesian tradition, in both industrial and developing countries, are considered to be the leading interest elasticity pessimists.

The other explanations of household savings behaviour are also made under the Duesenberry Relative Income Hypothesis *(*Gillis et al. 1987*)*, the Friedman Permanent-Income Hypothesis (Friedman, 1957), the Kaldor Class-Saving Hypothesis (1959), and Life Cycle Hypothesis of Savings (Ando and Modigliani, 1963). The relative income hypothesis argues that savings does not only depend on current income but also on the previous levels of income and past consumption habit i. e. $C_t = \alpha + (1\text{-}s)Y^dt + \beta C_{t-1}$. Where C_t =consumption at time t, Y^dt = income at time t, C_{t-1}=previous level of consumption, $0<s<1$, $0<b<1$. Under this hypothesis, the short run consumption (savings) function in an economy tends to ratchet upward over time. As income grows over the long term, consumers adjust their spending habits to higher levels of consumption. But in the short run, they are reluctant to reduce consumption level even if the income falls temporarily.

The arguments under permanent income hypothesis lies in the fact that individuals expect to live for many years; they make consumption decisions over a horizon of many years. In the most restrictive variant of the permanent income hypothesis, consumption tends to be a constant proportion of permanent income, approaching to 100 percent of permanent income. Thus, any savings that occur primarily may be out of transitory income: unexpected, nonrecurring income such as those arising from changes from assets values, changes in relative prices, lottery winnings, and other unpredictable windfall gains. This is expressed as: $S = \alpha + \beta_1 Y_p + \beta_2 Y_{u,}$ where S = savings, α= constant, Y_p = permanent income, and Y_u= unexpected income, $0< \beta_1 < \beta_2 <1$.

The class theory of savings views consumption (savings) habits to be sharply differentiated by the economic class (Kaldor, 1959). Workers, who mainly receive labour income, are thought to have weaker saving propensities than do capitalists, who primarily receive property income (profits, rents, and interests). It is expressed as: $S = s_wL + s_cP$, where, s_w=workers' savings propensities out of labour income, s_c=capitalists' savings propensities out of property income, L =labour income, P= property income, and $0< s_w <s_c<1$.

The life cycle model of consumption (savings) postulates that an individual maximizes the present value of his life time utility, subject to an intertemporal budget constraint that is equal to the current net worth plus the present value of his labour income over the remaining working life (Ando and Modgiliani, 1963). The intertemporal optimization yields a solution in which the current consumption is a function of the current non-human wealth and the present value of the expected future labour income (Wee-beng Gan and Lee-Ying Soon, 1995).

One implication of the life cycle permanent income theories is that the ratio of consumption to income and the ratio of wealth income remain constant along a given long run growth path , but vary once the steady state growth changes. One important framework that reproduces the life cycle consumption-income relationship in steady state is the error–correction model (Davidson et. al, 1978) i.e. $\Delta C= \beta_0 + \beta_1 \Delta Y + \beta_2 (C_{t-1} - Y_{t-1}) + \varepsilon_t$, where, C = consumption, C_{t-1}= lagged consumption, Y= income, and Y_{t-1}= lagged income. The steady state relationship between consumption and income can be derived from following formula**:** $C = \frac{((1-\beta_1)g-\beta_2}{\beta_2}$ **,** where g = steady state growth. Hence, $C/Y= \exp\{[1-\beta_1)g-\beta_0]\}/\beta_2$ which indicates that the long run consumption-income ratio, and hence savings ratio remains constant so long as the steady state growth rate, g, is unchanged . The ratio rises as g increases so long as $\beta_2 >$ and $\beta_1>1$.

All the hypotheses as mentioned above view income, whether current, relative or permanent, as the principal determinant of savings behaviour. It has been well established that the level of income exerts a positive influence on savings. But income is by no means the only determinant of aggregate private sector savings behaviour particularly in LDCs.

III. EMPIRICAL STUDIES

Theoretical and empirical studies conducted on savings behaviour in developing countries have identified activity variables such as the real interest rates and some measures of capital inflows (or foreign saving) as the important variables determining domestic savings (Arrieta, 1988). In addition to the above mentioned determinants, some of the studies also included demographic variables, government savings and labour market constraints into their model to investigate their influence on private savings.

The interest rate sensitivity of savings has been the subject of much debate in the literature relating to LDCs. Many economists remain doubful that interest rates, whether nominal or real, have any significant impact on private sector consumption behaviour in either developed or developing countries. Since savings is defined as not consuming, economists who do not believe on the role of interest rates conclude that interest rates have little impact on private savings decision to allocate income between consumption and savings: the interest elasticity of savings is held to be zero or insignificantly small. The influence of real interest rate on savings and consumption decisions has been a matter of considerable controversy (Wood, 1995).

At the theoretical level, the influence of real interest rates on savings depends on the relative strengths of the offsetting substitution and income effect. A rise in the rate of return may increase savings by making future consumption cheaper relative to current consumption (substitution effect). At the same time, higher real interest rates may reduce the savings necessary to purchase a given amount of future consumption (income effect).

Given the theoretical ambiguities, whether or not savings behaviour is interest elastic is a matter for empirical analysis.[1]

With the persuasion of economic liberalization by many countries of the world, it can be safely argued that capital inflow (or foreign savings) should be an important determinant of national savings.[2] In the early post war period, development economists, writing in the context of the 'Two Gap Model' of economic development, asserted that foreign assistance was essential if LDCs were to break the savings deadlock and achieve some meaningful degree of economic progress (see, for example, Rosenstein-Roden, 1961 and Chenery and Strout,1966 c.f. Wood, 1995). However, the above view of complementary role of foreign capital has been put under scrutiny. The experience of many of the LDCs in the last two or three decades does not support the complementary and essential role of foreign capital. Many economists have demonstrated that foreign capital and national savings are substitutable resources, and that foreign capital can affect growth adversely (Griffin and Enos, 1970 and Weiskopf, 1972, c.f. Wood, 1995). Foreign borrowings induced by large government budget deficits imply lower national savings. Further access to subsidized external savings may help recipient countries to neglect internal economic determinants of savings formation (Fisher, 1989).

The population structure has also been identified as a factor affecting savings behaviour in LDCs. Leff (1969, 1980) found a significant inverse relationship between dependency rates and saving rates in LDCs. He concluded that rapidly growing population (as found in LDCs) was characterized by a high ratio of dependents (young people) to the working age population, who because they contributed to consumption but not to the production, imposed a severe constraint on the society's potential for savings. Similarly, people in the very high age groups were seen as putting a strain on society's resources with out making a concomitant contribution to production. However, a number of authors including Billsborrow(1979, 1980) and Ram (1982), have questioned Leff's conclusions on the ground of specification and sample biases, and in general on the reliability of data (Wood, 1995). Similarly, Ross (1989) also questioned the theoretical framework upon which the existing evidence of dependency rates and savings behaviour is based.

Unemployment as a proxy of labour market constraint may also influence savings behaviour. As a measure of constraint in the labour market, unemployment may reduce the ability of individuals to save. Conversely, current employment, by increasing expectation of future unemployment, may lead to a higher level of savings via the precautionary motives (Deaton, 1992, c.f. Wood, 1995). The net effect of unemployment of savings can be established empirically.

Empirical studies on savings behaviour in LDCs have concentrated on analyzing total domestic (or national) savings without distinguishing between private and public savings. The use of aggregate savings obscures the fact that an important relationship might exist between private and public savings. Making a distinction between private and public

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[1] This literature is also controversial. For a brief survey, see Arrieta (1988) and Rossi (1988)

[2] Indeed the paper is interested to resolve the conflicting view on the role of foreign capital in capital accumulation process ascertaining how this variable affects savings behaviour. This is a very important issue, since one of the problems likely to be faced by the economy in the future will be the diminishing importance of foreign capital in the capital accumulation process.

savings is a valid procedure when Recardian Equivalence holds, which suggest that variation in government savings are neutralized by opposite movements in private savings. Government savings is, therefore, included as an explanatory variable in private savings model to see whether or not Recardian Equivalence holds in the economy. In the empirical analysis, the present study also considered government savings as an exogenously determined policy variable.

Identifying the different factors involved in the process of savings mobilization in developing countries is an important aspect of understanding the structure of such economies and in determining the policy mechanisms for encouraging domestic flows for investment purpose. The present study is an attempt to estimate the effect of income, real interest rates, labour market constraints, government savings, foreign savings and population structure on the level of private savings in Nepal, and inform policy makers to consider the status of savings behaviour for the purpose of economic planning in Nepal.

IV. MODEL SPECIFICATION

The objective as mentioned above requires an appropriate specification of the saving behaviour including time series data of the variables included in the model so that the valid estimation and inference could be made for economic planning. Econometrically, the modeling of such behaviour requires a stationary data process which is absent in many of the economic variables (Wood, 1995). The stationary data process indicates for constant mean and variance of each of the data series of the variables included in the model. Valid estimation is not possible when a set of non-stationary variables is cointegrated and the test of views remains meaningless. It means the estimation based on non-stationary data series does not help to accept or reject the conjectures. The cointegrated regression shows the presence of long run equilibrium relationship. Theoretically, one should be careful in the use of the time series data, whether stationary or non-stationary, for specifications like savings behaviour. Modeling savings behaviour requires consideration of the fact. As savings is important for economic planning of the country, this requires knowledge of the status of savings and its behaviour.

The model employed in the paper is the co-integration approach. There are various literature on this approach. The important contributions are made by Engle and Granger (1987, 1991) and Dickey et al. (1991). Wood (1995) also argued for the need of the stationary data series to employ cointegration theory. As many of the economic variables do not possess the characteristics of being stationary, it is necessary to keep in mind the type of data series used in the model. Valid estimation and inference is not possible when a set of non-stationary variables is cointegrated.

The cointegration of a set of variables provides sufficient ground for specifying a corresponding error correction or dynamic equation for these variables based on the Granger Representation Theorem (Engle and Granger, 1985, 1987). The error correction model encompasses models in both levels and differences of variables and is compatible with a long- run equilibrium behaviour.

The steps involved in the model are as follows:

- Investigating the temporal characteristics of the variables in the savings function. This essentially involves the use of testing procedures such as those developed by

Dickey and Fuller (1979, 1981) to determine the degree of differencing required in order to induce stationary. This has been done with the following specification.

$$\Delta(PS)_t = \beta_1 + \beta_2 t + \delta(PS)_{t-1} + \alpha_i \sum_{i=1}^{m} \Delta(PS)_{t-1} + ... + \varepsilon_t .....(1)$$

where, PS stands for real private saving, t for trend variable, $\Delta(PS)_{t-1}$ for $PS_{t-1} - PS_{t-2}$, $\Delta(PS)_{t-2}$ for $PS_{t-2} - PS_{t-3}$ etc., m is chosen to ensure that the residuals (u_t) are empirically white noise, when m=0, the Dickey-Fuller test is defined and m≠0 specifies the Augmented Dickey-Fuller test; ε_t stands for pure white noise error term, and Δ for change.

A similar specification has been done for time series data of each of the variables included in the model.

- Formulating the static `long-run' theoretical relationship and testing for a vector of co- integrated variables. It is being assumed that the normalization is on gross private savings, it uses the Dickey Fuller (DF), Augmented Dickey Fuller (ADF) to test the stationary of the error term in the static regression equation (Hall, 1986).
- Estimating the error correction or dynamic short-run representation of the relationship and testing for the adequacy of the resulting equation. This dynamic equation would include the lagged error term from the estimated long run equation as independent variables, which measures the extent of deviation from long run equilibrium. The model is specified as follows:

$$\Delta(PS)_t = \beta_1 + \beta_2 \Delta(Y)_t + \beta_3 \Delta(GS)_t + \beta_4 \Delta(FS)_t + \beta_5 \Delta(UP)t + \beta_6 \Delta(DP)_t + \beta_7 ECM\_1 + \beta_8 \Delta(PS\_1).....(2)$$

where Y stands for real GDP at time t, GS for real government savings at time t, FS for real foreign savings at time t, UP for number of unemployed persons at time t, DP for dependent population at time t, ECM_1 for lagged error correction term, PS_1 for lagged difference in real private savings, and Δ for change.

V. DATA SOURCES AND CONSIDERATIONS

Most of the data employed in this study were obtained from various issues of *Economic Survey* of Ministry of Finance, *Quarterly Economic Bulletin* of Nepal Rastra Bank and Population Monographs and National Accounts prepared by the Central Bureau of Statistics, the Government of Nepal. The estimation period 1974-2005 was determined largely by the availability of adequate data on all variables included in the model. For the first time in Nepal, the estimate of unemployment rate was estimated by NPC in 1977. Therefore, the number of unemployed persons was extrapolated for 1974-76. The dependent variable is the gross national private savings adjusted with inflation (proxied by the GDP deflator) with a base of 2000=100. Gross savings measures tend to be more reliable than net savings because, in contrast to measures for net savings, they do not rely on the estimate for depreciation, which is subject to various statistical and conceptual problems (Ramsaran,1988).

The data on gross domestic savings have been obtained from national accounts statistics. In this study, private savings is estimated as the difference between gross

domestic savings and government savings. It means it is a residual after deducting government saving from gross domestic savings. This type of process was also adopted in Basyal (1994). Foreign savings is the savings obtained from the net movement on the capital account of the balance of payment, and government savings is the difference between government revenue and government consumption. All types of savings are deflated by GDP deflator. Data on foreign savings were obtained from various issues of *Economic Survey* published by the Ministry of Finance and Balance of Payment Statistics prepared by Nepal Rastra Bank.

The income variable is gross domestic product at factor cost based on GDP at a constant price (2000=100). The real interest rates variable is the nominal weighted average rate on time and saving deposits determined by Nepal Rastra Bank corrected for inflation. Since the calculation of real interest rates requires data on expected inflation, a non-observable variable, percentage change in GDP deflator has been used to calculate real interest rates. In the present study, the interest rate variable is not adjusted for taxes since taxes on interest income are only a recent phenomena (being introduced for the first time in the mid-1980s).

The age-dependency (population structure) variable is defined as the number of persons below age fifteen and over sixty. The population statistics were obtained from the population data prepared by the Central Bureau of Statistics. The unemployed persons as a proxy of labour market constraint have also been estimated from the reports of the CBS and NPC. The estimates of unemployment rates by CBS/NPC were 5.62 percent, 1.62 percent, 7.60 percent, and 8.1 percent in 1977, 1981, 1992 and 2001 respectively. Based on these estimates, the unemployed persons were projected for various years.

VI. EMPIRICAL REGRESSION RESULTS

Testing for Unit Roots

The time series behaviour of each of the series is presented in Table 3 using Dickey-Fuller and Augmented Dickey-Fuller[3]. For any series of variable say private savings (PS), the Dickey-Fuller test is based on the following regression model.

$$\Delta(PS)_t = \beta_1 + \beta_2 t + \delta(PS)_{t-1} + \alpha_i \sum_{i=1}^{m} \Delta(PS)_{t-1} + \ldots\ldots\ldots + \varepsilon_t \ldots\ldots\ldots\ldots (1)$$

where m is chosen to ensure that the residuals (u_t) are empirically white noise, when m=0, the Dickey-Fuller test is defined and m≠0 specifies the Augmented Dickey-Fuller test. The null hypothesis that PS has a unit root (i.e. PS is integrated of order one, denoted PS~I(1) is tested against the alternative that PS is stationary [i.e. PS~I(0)]. The null hypothesis is rejected if coefficient of autocorrelation (ρ) is negative and insignificant.[4] The appropriate significance points are provided by Fuller (1976).

[3] All the results of this study were obtained using the Shazam package.
[4] Technically stability condition requires |ρ|<1.

TABLE 3 : Testing for Unit roots: Dickey-Fuller and Augmented Dickey-Fuller (ADF)

Variables	DF H_0:I(3)	DF H_0:I(4)	ADF H_0:I(3)	ADF H_0:I(4)
Private Saving(PS)	-12.80	-16.83	-6.209	-7.542
Income (Y)	-8.567	-9.168	-12.08	-13.28
Government Saving (GS)	-13.44	-17.64	-6.272	-7.165
Foreign Savings (FS)	-10.27	-12.27	-8.458	-10.51
No. of Unemployed Persons (U)	-8.690	-12.38	-5.222	-7.674
Interest Rate (RI)	-7.458	-.8.838	-8.295	-9.286
Dependent Population (DP)	-5.523	-9.349	-3.875	-6492

Source: Computed Tau (τ) Values of the Variables

In Table 3, Y=real GDP, PS = real private saving, GS = real government saving, FS = real foreign saving, RI = real interest rate, UP = number of unemployed persons, DP = dependent population and R^2 = coefficient of determination

Table 3 indicates that all the series are integrable from order 3. The critical value (τ) with constant term in the model is -3.75 at 0.01 level. However, some of the series like GS and RI are integrable at order one in both tests, DF and ADF. It has also been demonstrated that the presence of an I(0) variable does not pose any problems for cointegration theory. In this regard, Johansen (1985) demonstrated that it is not necessary that all the variables in a multivariate regression have the same order of integrability to achieve cointegration.[5]

Cointegration Model

The long run or cointegrating private savings equations for Nepal were estimated using ordinary least square (OLS). The results are presented in Table 4. The R^2 is fairly high and DF and the ADF statistics generally indicate that the residuals are stationary.[6] The computed values for DF and ADF with the inclusion of constant term at 5 percent significance level are fairly higher than the critical values of DF and ADF. An examination of equation (1) reveals that the dependent population variable is statistically insignificant. However, the sign of the coefficient is found to be negative as per priory. The value of the computed t is the lowest of all. With the exclusion of the dependent population (DP), an I(0) variable, the model provides a stronger evidence of a cointegrated relationship. Similarly, exclusion of foreign savings variable also does not present a significant difference in the regression result.

[5] Leon (1987), examining the demand for money function for Jamaica over the period 1953-1981, also found that in the multivariate context cointegrability is attainable even though the original series are of different orders of integrability, See Wood, 1995.

[6] The critical values have been calculated by Engle and Yoo (1987) using Mont Carlo simulation techniques and Blangiewicz and Charemza (1989) as a guide in reaching conclusion of cointegration variables based on the Dickey-Fuller test.

TABLE 4: Cointegration Regression for Real Private Saving (1974-2005)

Parameters/Variables	Equation 1	Equation 2	Equation 3
Constant	397.31	-5424.5***	-5760.7***
	(.0.265)	(-1.409)	(-1.548)
$\beta_1(Y)_t$	0.183*	0.1556*	0.161*
	(2.540)	(6.336)	(7.842)
$B_2(GS)_t$	-0.287	-0.219	-0.295
	(-(0.596)	(-0.494)	(-0.728)
$B_3(FS)_t$	0.156	0.881	
	(0.600)	(0.453)	
$B_4(R)_t$	249.12***	269.72***	261.380***
	(1.326)	(1.517)	(1.500)
$B_5(UP)_t$	-.0847*	-.0851*	-0.091*
	((-2.195)	(-2.244)	-2.548)
$B_6(DP)_t$	-.0164		
	(-0.402)		
R^2	.3030	.9024	.9016
DF	25	26	27
CRDW	1.2939	1.3086	1.2319
DF(τ)	-3.819	-3.902	-3.702
ADF(τ)	-3.167	-3.204	-3.122

Note: * Significant at 1 percent level.
** Significant at 5 percent level.
*** Significant at 10 percent level.

Error Correction Model

With the identification of cointegration set of variables, the dynamics of the savings processes was explored. Following the general to specific modeling methodology (for example, see Hendry and Richard, 1982, and Gilbert, 1986), an initially over parameterized model with one lag on the dependent and independent variables was continually specified and reparameterised until a parsimonious representation of the data generation process was obtained. The parsimonious representation of data generation is meant for obtaining careful and sufficient representation in terms of degree of freedom.[7] For example, an inclusion of larger number of lag length reduces the degree of freedom. The resulting dynamic equation for the period 1974 to 2005 is:

$$\Delta(PS)_t = \beta_1 + \beta_2\Delta(Y)_t + \beta_3\Delta(GS)_t + \beta_4\Delta(CI)_t + \beta_5\Delta(UR)t + \beta_7 ECM\_1 + \beta_8\Delta(PS\_1).....(2)$$

[7] Ideally, one would like to have the freedom to include several lags of each differenced variables at the outset of the specification search process. However, because of the small sample size (and the need to preserve the degree of freedom) the initial model includes only one lag on the dependent and independent variables.

TABLE 5: Cointegrated Regression Results

$\Delta(PS)_t =$	B_0 +	$B_1\Delta(Y)_t$ +	$B_2\Delta(GS)_t$ +	$B_2\Delta(FS)_t$ +	$B_3\Delta(R)_t$
$\Delta(PS)_t =$	-1504.20	0.3094ΔY*	-0.9318ΔGS*	-0.1832ΔFS	229.93ΔR**
t =	(-1.205)	(3.004)	(-2.439)	(-0.6244)	(1.833)
			$-B_4\Delta(UP)_t$	$-B_5(ECM)_{t-1}$ +	$B_6\Delta(PS)_{t-1}$
			-0.0862ΔUP***	-0.6012ECM_1*	0.153PS_1
			(-1.384)	(-2.745)	(0.8506)
	R^2= 0.5786	LM[χ2 (9)]=13.026[8]	NRM[χ2(2)]=3.2317	RR[$F_{1,22}$]=0.4692	ARCH[χ2(1)]=.892
		GLEJSER[χ2(7)]=3.128	CHOW[$F_{8,15}$]=2.o2	HET[M=7]=1.1094	HAUSMAN[$F_{4,11}$)]= 1.770
		PC1[$F_{15,8}$)]=1.034	DF=23		

Note: * Significant at one percent level.
** Significant at five percent level.
*** Significant at ten percent level.

Where Δ is the first difference operator, (ECM)_1 is the lagged error correction term from equation (2) of table (4), LM is Langrang Multiplier test for first order serial correlation, RR is Ramsey's (1969) specification error test, NRM is Bera-Jarque (1980) normality test, HET is a variant of White's (1980) test of heteroscedasticity, ARCH is Engle's (1982) autoregressive conditional hetroscedasticity test, CHOW is Chow's (1960) test for structural change or stability, PC1 is predictive accuracy test [(see Chow (1960) and Davidson et at (1981)] and Hausman is Hausman (1978) test for exogeneity.

The LM test for serial correlation of the residuals is not significant, satisfying a necessary condition for white noise residuals. Examination of residuals using Engle's ARCH test of first order suggest that the null hypothesis of constant variance should be accepted. The Ramsey's RESET test indicates that the functional form of the model is quite sound. The Chow statistic of 2.51 using 1990 as the breakpoint in the relationship is below the critical 5 percent value of 3.29 indicating that the model has good stability properties, that is, the model has stable coefficients. Finally, the Hausman test result reveals no evidence of simultaneous equation bias in the estimates.[9] Thus, the wide range of diagnostic tests suggests that the residuals do not violate classical assumptions. Furthermore, the lagged residuals from the second regression of Table 4, (ECM)_1, which represent the equilibrium error term, are statistically significant indicating the acceptable ground to take variables as a cointegrated set. The coefficient of the cointegration regression can therefore be appropriately interpreted as the long-run coefficients in the relationship.

Analysis of Estimation Results

An analysis of the estimation results for the long run and short-run private savings equations shows that the estimated coefficient of income variable in the error correction

[8] Durbin-Watson `h' test is not required as LM test is a more powerful test than h test. See Gujarati (2004).

[9] The instrumental variables used in the Hausman test for exogeneity are lagged changes in income, government savings, foreign savings and unemployment.

model indicates that a one unit rise in real income will lead to a 0.309 unit increase in real private savings in the short run. The corresponding long-run unit is 0.365. It means short-run marginal propensity to save is 0.309, whereas it is found to be 0.365 in the long-run.

The estimated coefficient of the government savings variable (-0.9317) in the dynamic equation indicates that short-run variations in government savings are neutralized by opposite movements in private savings, suggesting that the strong assumption of Recardian Equivalence also holds true in the Nepalese case. This finding contradicts the study conducted in Barbados (Wood: 1995) and also the findings of Hutchinson (1992) conducted for five major industrial countries[10]. The long-run coefficient on government savings is statistically significant at the one percent level.

The empirical results indicate that foreign savings impact negatively on private savings in the Nepalese economy. However, the size of estimated coefficients (-0.1832 and -0.216 for the short and long run, respectively) provides support for the substitutable resources between foreign savings and national savings (see Griffin and Enos, 1970 and Weiskopf, 1972). However, the observed coefficient of foreign savings is not significant.

The relationship between the private savings and unemployment is observed with a negative sign as it was expected. It means increasing the number of unemployed persons will decrease savings. A one unit rise in the number of unemployment will lead to a 0.0862 unit reduction in private savings in the short run. Unemployment has even a stronger depressing influence on the private savings in the long run: a 1 unit change in the unemployment leads to a 0.102 unit change in private savings in the opposite direction. These results have important implications for the design of economy policy in Nepal. They suggest that the focus of development policy should be to increase the productive base of the economy, that is, to stimulate more activity in the industrial, tourism, and agricultural sectors in order to improve the employment prospects, especially in the longer term.

The regression results also indicate the importance of real interest rates in the determination of savings in Nepal, at least in the long run. The long-run coefficient is positive and statistically significant at the five percent level. This shows that the interest rates are encouraging private savings in Nepal. The observed positive relationship between real interest rates and private savings contradicts to the findings of Van Wijnbergen (1983) and Giovannini (1985) and Wood (1995) but is consistent to the popular view [(McKinnon, 1973) and Shaw (1973)] that higher real interest rates result in higher savings levels (leading to higher levels of investment and economic growth).

The statistical insignificance of the lagged private savings variable indicates that private savings in Nepal is neither a sluggish phenomenon in the short run nor in the long-run while it was found to be a sluggish phenomena in the short run in the Carribean countries (Wood, 1995). The size of the coefficient (0.154) on the ΔPS_1 variable implies a relatively slow speed of adjustment.

[10] The countries covered in Hutchinson's study are United States, Japan, Germany, United Kingdom, and Canada.

VII. CONCLUSION

With a view to ascertain the factors affecting savings behaviour both in the short and long-run, a cointegration theory was used to model private savings behaviour in Nepalese economy.

The estimation results for the error correction model indicated that changes in income, government savings and interest rates are significant in explaining short run dynamics of private savings. These variables have also significant influence on private savings in the long run. The labour market constraints (proxied by the number of unemployed persons) experienced a negative relationship and is significant at 10 percent level. Unemployment has a depressing influence on the private savings in the long run; a 1 unit change in the unemployment leads to a 0.102 unit change in private savings in the opposite direction

A major conclusion drawn from the analysis is that the focus of development policy in Nepal should be to increase the productive base of the economy in order to promote real income growth and reduce unemployment. It is also important to note that the real interest rates have a positive influence on the private savings in Nepal and is also significant at 5 percent level. The policy makers should take explicit account of this result in the formulation of its financial policy. The estimates of short-run and long-run marginal propensities to save, which are essential for economic planning purposes, can also be used by other developing countries as a benefit transfer method (ADB, 1996). The findings also provide valuable inputs for policy makers towards greater mobilization of private savings.

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Human Capital Flight: The Cause of Underdevelopment

Achyut Wagle*

Since the beginning of development discourse based on dualism of development versus underdevelopment, particularly since the end of World War II, a large number of explanations and theorized school of thoughts have come to fore. Despite so many theories and models about development in place, so much technological and scientific advancement mainly in communication and transportation, the extent of underdevelopment is more rampant than ever before. The income of the richest 1 percent (50 million) is the same as the income of the poorest 60 percent (2.7 billion people) of the world. More than half of world population survives by less than US$ 2 a day. Apparently, these development theories have practically failed to address the problem of underdevelopment of the world. This reality--both in development discourse and development practice—make it imperative to rethink, mainly to specifically point out the causes of seemingly inescapable trap of poverty and underdevelopment. The recognition of the human capital flight as the most crucial cause of underdevelopment provides new basis for development discourse. On the contrary, Nepal has remained as one of the highly underdeveloped countries, the reason of which could be attributed to human capital flight.

I. BACKGROUND

Development and underdevelopment are relatively new concepts that were debated mainly after World War II. However the concept of industrialization, increased production and productively, and export trade as means to increase the prosperity of any nation-state were recognized generally with the advent of the state and particularly after the Industrial Revolution.

In the late 1940s and early '50s, development generally meant the replication of the experiences of industrialized countries. This included the application of know-how through the assignment of the experts, increased industrial output and export trade,

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expansion of education, development of infrastructure and distribution of welfare schemes by the state.

During early period of development efforts or in development discourse, there was little discussion on the causes and nature of development or lack of it, i.e. underdevelopment. Only in more recent times has the viewpoint of developing countries gained momentum in development theories (Kuhen, 1987). By now, there are a large number of explanations and theorized school of thoughts that underscore the causes of underdevelopment and have made attempts to bring the models of development into practice.

Interestingly, despite so many numbers of theories and models about development in place and so much technological and scientific advancement primarily in communication and transportation, the extent of underdevelopment is more rampant than ever before. The income of the richest 1 percent (50 million people) is the same as the income of the poorest 60 percent (2.7 billion people) of the world. [1] More than half of world population survives by less than US$ 2 (ppp basis) per day. [2]

In other words, these development theories have practically failed to address the problem of underdevelopment, whereas development theories have been treated as the yardsticks to justify the development policies adopted mainly by the so-called developed countries and replicated by the underdeveloped ones. This scenario is enough to suggest that, these theories on economic development are rather lopsided than holistic in approach and, thus, many of such theories have proved to be practically ineffective to the extent of being able to address the cause of underdevelopment.

These lacunae in development theories are inherent largely due to three reasons:

- In the process of establishing a simple concept into a theory, statistical methods or econometrics are so coercively employed that the benign concept emerged out of purely humanistic consideration deflects, sometimes in unimaginable degree, by the time it is empirically established. Debates on economic development have been more relative to models than their actual scope of contribution to the development itself. In this process, the facts that economics and economic development are more of the issues of human concern than mathematical equations are completely forgotten.
- The major drawback of this process is: if something is to be statistically established, one must rely on existing phenomena that is measurable, which is bound to be descriptive than prescriptive. It can only reflect in what has happened but cannot generally recommend the problem solving mechanism embodying intrinsic intervening strength.
- Most of development theories and models have focused more on measuring the prosperity/poverty, equality/inequality or development/underdevelopment and formulation of equations and diagrams. Instead, their focus should have been on

[1] This is taken from http://www.bbc.co.uk/news, April 14, 2008.

[2] "There are still around 1 billion people living at the margins of survival on less than US$1 a day, with 2.7 billion—40 percent of the world's population—living on less than US$2 a day." (UNDP, 2007, p. 25). The report also notes that the alleviation is limited mostly to parts of Asia.)

intervening in the existing issues and practices that are so far unable to address the status of underdevelopment. For example, a large number of renowned economists and development thinkers have measured and analyzed the income inequality on country-to-country or region to region bases, but only very few have recommended effective way out to distributive justice so that such gaps could be effectively abridged.

- The practices of dealing with the issues of poverty and underdevelopment in terms of various forms of averages, inductions and deductions has been highly misleading vis-à-vis actual realities and, very often cover-up the gravity and magnitude of the problem. Some economic concepts have accepted 'family as the basic economic unit' (Roberts, 1967). But in practice, individual nation-state is still treated as the basic economic unit in international dealings, national policy formulation and more importantly in measuring the economic performance. Therefore, the concept of family as economic unit normally remains euphemistic while adopting national policies on poverty reduction and providing international development assistance. This eventually leads the development process that does not directly interface with the human needs at the grassroots.

II. RETHINKING DEVELOPMENT

These phenomena—both in development discourse and development practice--make it imperative to rethink, mainly about the causes of underdevelopment. This rethinking among others may need to redefine the development itself, to specifically point-out the causes of seemingly inescapable trap of poverty and underdevelopment, and while discussing development, need to gauge the appropriateness of the models not merely on the basis of mathematical or graphic validity but on the basis of their capacity to actually attack on the problems on the ground.

As it is, development already is one of the over defined terms, though it still remains to be completely comprehensive in meaning and, ironically, not a single definition has proved to be effectively instrumental in solving the problems of underdevelopment. In terms of ends, development could be 'maximization of happiness', 'enlarging the choices of the people' 'progressive changes in the socio-economic structure of a society,' 'a process of homogenization,' 'removal of sources of unfreedom', etc. (Sen, 1999).

In recent years economic growth & development are defined as different terms used in economics. Generally speaking, economic development refers to the problems of underdeveloped countries and economic growth to those of developed countries. By economic growth we simply mean increase in per capita income or increase in a country's output of goods and services, or more precisely product per capita (Osberg and Xu, 2008).

These days, the definition of development that emerged after 1990 that incorporated the 'human development indices' in its measurement is considered most comprehensive. The 'development' is defined as "the process of improving the quality of all human lives. Three equally important aspects of development are (1) raising people's living levels—their income and consumption level of food, medical services, education, etc. through relevant economic growth processes; (2) creating conditions conducive to the growth of people's self esteem through the establishment of social, political and economic systems

and institutions that promote human dignity and respect; and (3) increasing people's freedom by enlarging the range of their choice variables, as by increasing varieties of consumer good and services" (Todaro and Smith, 2004, p. 826).

By contrast, the underdevelopment, which is the common feature of so called developing countries, is defined as "an economic situation in which there are persistent low levels of living in conjunction with absolute poverty, low income per capita, low rates of economic growth, low consumption levels, poor health services, high death rates, high birth rates, dependence on foreign economies, and limited freedom to choose among the activities that satisfy human wants" (Todaro and Smith, 2004, p. 847). In some context, underdevelopment is also attributed to under utilization of available resources.

There is no apparent reason to disagree on the theoretical foundation and logical validity of these definitions, although each of them presents an incomplete perspective or partial truth. The vagueness of the very definitions of development undoubtedly needs fine-tuning or narrowing down to address the cause of underdevelopment. In that sense 'development' should mean both effort and process carried out in the underdeveloped sections of the population (geographic region here is not important) to bring them up to the level where their minimum needs of food, shelter, healthcare and education etc. are met at the first place.

III. The Human Capital Deficiency

Apart from various goals and processes of the development set by different schools of thoughts, models and theories, the most crucial questions here are:

- Why does the problem of underdevelopment remain unresolved even after innovation of so many development models and explanations and majority of world population is still cursed to live a miserable life?
- How can we effectively bring the world's poor population out of the underdevelopment trap?

Simple answers to these complex questions respectively are: absence and presence of a qualified implementation agent of development schemes and plans on the specified site where the development is desired. Such 'agent' could be a qualified individual or the institution made up of such individuals.

In more simplified terms, if the underdevelopment of any particular settlement or area is due to under utilization of the resources available, there must be an entity (person or institution) qualified to identify and mobilize these resources for the benefit of that particular settlement or area. Similarly, in raising people's income and consumption levels, providing health and education services or creating conducive atmosphere for growth of self-esteem of the people of underdeveloped area, adequate presence of skilled manpower or human capital to initiate and implement each of specialized tasks like these is inevitable.[3] Therefore, any model or theory of economic development, regardless of its

[3] "Human capital refers to the stock of productive skills and technical knowledge embodied in labor. May early economic theories refer to simply as labor, one of three factors of production, and consider it to be a fungible resource—homogeneous and easily interchangeable. Other conceptions of labor dispense with these assumptions." For details, see www.wikipedia.org/

form and content, requires such skilled manpower to implement them on the ground. Despite availability of dozens of economic development models and theories, many of them highly impressive, academic and well articulated, the economic inequality is as pervasive and problem of underdevelopment is as starkly evident as ever before. Lack of human capital where it required the most is undoubted one of the major reasons for this situation.

The sole reason that these underdeveloped areas—be that countries, regions or mere settlements—have remained underdeveloped for centuries, is the absence of this skilled manpower respective to size and scale of the need. This absence is caused mainly by three factors:

- inadequate production of skilled manpower,
- little or nil attraction to outsiders to come in and
- human capital flight.

Among these three, the 'human capital flight' is the most crucial factor. This flight prevents the prospect of otherwise potential of geometric growth of skilled manpower in particular area/sector by means of trainings, experience-sharing and transfer of knowledge by social contacts. The presence of one set of human capital helps to attract the peers in the same or different field of expertise. In other words, if the human capital flight could be stopped from an underdeveloped area/sector, problems like inadequate production of skilled manpower and lack of attraction of such skilled people to the needed area are largely addressed automatically.

Nepal is a classic example of the countries fallen in the underdevelopment trap due to, among other factors, the human capital flight. With an estimated 1 million workers abroad in 2004 (primarily in India, the Gulf and East Asia), remittance inflows soared from 3 percent of GDP to 12 percent. The share of households receiving remittances has also increased from 24 percent in FY 1995/96 to 32 percent in FY 2003/04 (IDA, 2007). However, the HDI for Nepal still stands at 0.534, which gives the country a rank of 142nd out of 177 countries with life expectancy at birth of 62.6 years, adult literacy rate (ages 15 and older) of 48.6 percent, and GDP per capita (ppp basis) of US$ 1,550 (UNDP, 2007). This clearly is an indication that only inbound remittances do not help the country to develop if there is a constant flight of human capital.

IV. LABOUR MOVEMENT AND ECONOMIC DEVELOPMENT

The importance of human input in production, thereby growth and possibly economic development was identified long ago with the recognition of labour as one of the major factors of production by Adam Smith, the classical economist, through his book *The Wealth of Nations* in 1776. With the growth of means of communication and transportation, movement of this factor of production also increased significantly. (The movement of the people might also have been appeared as increased due to proper documentation, record and study of the impacts of such movements, although one can easily guess that there must have been great movements of human workforce at least within the limits of the continent, since the time immemorial.) Then after, a number of economists have come forward with theories and explanations related to labour or workforce movement and its bearing in entire development paradigm. But all these

theories have invariably treated the human workforce just as factors of production in quantitative terms. With the advent of the concept of human resource in late 1970s and early '80s, the quality of 'labour force' got incorporated into this concept.

The concept of "human capital" is not the *same* to the concept of labor power in the sense of the physical strength. Unlike physical labor as one of the other factors of production, the human capital is explained and justified by creative faculty of the human brain and the unique characteristics of knowledge that is expandable and self generating with use. This contributes to replace the economics of scarcity by the economics of self-generation, i.e. development.

Human capital refers to the stock of productive skills and technical knowledge embodied in labor. Originally, Adam Smith defined it as one of the four types of fixed capital that were: (1) useful machines, instruments of the trade; (2) buildings as the means of procuring revenue; (3) improvements of land and (4) human capital. He referred to it as "the acquired and useful abilities of all the inhabitants or members of the society. The acquisition of such talents, by the maintenance of the acquirer during his education, study, or apprenticeship, always costs a real expense, which is a capital fixed and realized, as it were, in his person. Those talents, as they make a part of his fortune, so do they likewise that of the society to which he belongs. The improved dexterity of a workman may be considered in the same light as a machine or instrument of trade which facilitates and abridges labour, and which, though it costs a certain expense, repays that expense with a profit." (Smith, 1968, p, 271)In short, Smith saw human capital as skills, dexterity (physical, intellectual, psychological, etc) and judgment.

Phenomenal increase in the migration of highly skilled, highly educated professional workers in recent years, particularly from developing to developed countries causing depletion or loss of intellectual and technical personnel in the countries where the need is more acute has initiated new form of debate in recognizing human capital and its impact in the deployment process of the underdeveloped areas. In some context human capital flight is equated as the brain drain or an emigration of trained and talented individuals to other nations or jurisdictions. There are several arguments by many economists for and against of such 'drain' and its impact in development.

A. W. Lewis established the inter-connection between the economic development and labour migration or movement when he wrote in 1954 "Economic Development with Unlimited Supplies of Labour." His proposition was that in many economies an unlimited supply of labor is available at subsistence wage. The main sources from which workers come as economic development proceeds are subsistence agriculture, casual labor, petty trade, domestic service, wives and daughters in the household, and the increase of population. The subsistence wage at which this surplus labor is available for employment may be determined by the minimum required for subsistence.

In such an economy employment expands in a capitalist sector as capital formation occurs. Capital formation and technical progress result not in raising wages, but in raising the share of profits in the national income. As the capitalist sector expands, profits grow relatively, and an increasing proportion of national income is re-invested. Capital is formed not only out of profits but also out of credit creation. The wages in the urban sector is higher by about 30 percent than the subsistence sector. This is how labor from rural sector is employed and the economy continually expands (Lewis, 1954).

There could be criticism of this theory from several academic angles, but from practical point of view, this model could not contribute to the development of the underdeveloped countries and areas. The implied argument of expansion of urban and industrialized economy should be considered as overall development of a country is bigotry as the subsistence sector is marred by the vicious cycle of poverty; and the prosperity and capital accumulation gained by the modern sector never got transmitted to the underdeveloped sector.

On the contrary to the Lewis' theory, the flight of the human capital from rural to urban or underdeveloped to very developed areas has severely jeopardized the prospects of development of underdeveloped area/country. Among several other concepts, the idea of 'brain drain' is also widely debated these days. Advantages and disadvantages of cross-border migration of the workforce—both skilled and unskilled—and impacts in the host and originating economies have also become the subject of academic interests.

The 'brain drain' has been defined " as an abnormal form of scientific exchange between countries, characterized by a one—way flow in favour of the most highly developed countries". It has pointed the main characteristics of brain drain as follows :

a) There are numerous flows of skilled and trained persons from developing to developed countries;
b) They are characterised by large flows from a comparatively small number of developed countries and by small flows from a larger number of developing countries;
c) In these flows engineers, medical personnel and scientists usually tend to predominate;
d) The above flows have grown with increasing rapidity in recent years;
e) The higher the level of skill/training, the greater the susceptibility to migration tends to be (UNESCO, 1969).

It is widely accepted that there is significant socio-economic impact of labour migration of various categories, including the 'brain drain' on local communities. In one of the studies, it is summarized as the double-edged impact as presented below (Cucuruzan, 2007):

TABLE 1: Double-edged Impact

Positive Impact

Country of Origin	Country of Destination
Brain gain (return migrants successfully reintegrated)	Brain gain (highly skilled immigrants in top positions)
Remittances (income growth, increased consumption, long term investments)	3D jobs (immigrants- filling the gap)
"Export" of unemployment	Young immigrants – role in demographic change
Opportunity for financing community based projects	Increased number of tax payers national/local budget)
Increased access to educational and health services for the migrants' families	
Diaspora's lobby	
Transfer of new work culture, best practices, knowledge	

Negative Impact

Country of Origin	Country of Destination
Demographic impact (youth loss)	Pressure on the social system (new vulnerable groups)
Loss of young/qualified labour force (youth loss, brain drain)	Population fears – immigrants as jobs' thieves, trouble makers, misfits…
Conflicting relationships within the community (new socio-economic inequalities due to status change)	Conflicting relationships within the local community (immigrants and natives)
"Ghost villages"- "Flying villages"	The integration programmes vs. assimilation strategies (how costly?)
Vulnerable family members left behind (elderly, women, children) - higher dependence on migrant's resources (substitutes and not complements to family income)	
Failure of reintegration programmes for returnees	

Source: Cucuruzan, 2007.

V. The Human Capital Dynamics of Underdevelopment

The Scope

The scope of human capital perspective with respect to reduction of underdevelopment should be more specific but broader than the present definitions and understandings. So far, the human capital is defined as the 'skilled and knowledgeable labour' and this skill is weighed against their knowledge about the latest technical know-how adopted by the developed countries. Perhaps, their ability to faster adjustment to newer culture could also have been a yardstick.

The human capital for the purpose of addressing the problem of underdevelopment, therefore, should be defined as the workforce with the knowledge about social, economic and political issues of underdevelopment of the area of origination of such force. Specialized skill and creativity to address the problem of underdevelopment, and complete knowledge about the all forms of resources—human, natural and financial—about the desired locality should also be included to categorize labour as human capital.

The idea of 'brain drain' also sprouted out of this highly generalized concept of human capital. The 'brain', which is considered as 'drained' needs to be evaluated on the basis of usefulness to address the problem of underdevelopment in the locality to ascertain if it were actually a human capital flight. Through this lens, the entire workforce that migrated might not have local utility value for development contribution. It actually might not have been necessarily the human capital flight. Therefore, for the purpose of this write-up, the definition of human capital flight is also more specific than skilled labour migration or 'brain drain.'

All these economic theories, reports and studies have one thing in common: all of them recognize the fact that the human capital has a role in development. But all of them equally in unison fail to recognize the fact that the main and only reason of underdevelopment of a particular country, region or area is the absence of human capital in such jurisdictions primarily due to the human capital flight. Therefore, first of all, the process to overcome the problem of underdevelopment should begin by identifying the nature of human capital required and the efforts to produce, retain and to diffuse the knowledge and skills. Again, the process should be in the order of recognition of such capital, production, retention and diffusion of it.

The issue of utilization and mobilization of such human capital, which has been the general concern of the most of the development economists so far, is not an issue. The creative faculty of the brain inherent in the human beings will find ways for it, and potential scenario of competition created by retention will enlarge the scope of both utilization and mobilization. As such, it is likely to have more output than forced assignment of responsibilities.

Production of Human Capital

Production of the kind of human capital that is appropriate to meet the needs of underdeveloped country/area is the most crucial factor in unshackling the trap of underdevelopment. Education system designed according to the need of development-aspiring sectors is the main basis of supply of the human capital. In producing the human capital, two main components must be incorporated.

- All technical education should be given in the mother tongue of the population of practically manageable scale and,
- The curricula right from the high-school level should include teaching, learning materials with localized adaptation, at least on status, availability and potentials of human capital natural resource and demography and dynamics of local culture and history.

The current education system and practices particularly in the developing countries is just opposite to the above-mentioned two components. First, there is an amazing trend in education system that imparts education in the languages of the countries of the developed world, mainly English, French and Spanish in some developing countries of Africa and South America. This trend has multiple effects that contribute to perpetuate the status of underdevelopment; (a) itt produces manpower appropriate for the developed world with the investment of poor developing nations; (b) once the language barrier is overcome, there could be increased impetus for migration to the workforce which otherwise could have explored avenues to harness the local resources and to be employed at the local level, that in turn supports the development process; (c) the practice of giving technical education in mother tongue is not only in consonance to the concept of culturally compatible development, but it also drastically reduces the burden of future workforce of learning additional language and content of the course simultaneously; it helps to produce more technical manpower and a sense of ownership is also lost in imparting education in foreign language; (d) in absence of localized adaptation of the courses on availability of resources etc., there have been several duplication in executing

development projects. Local and indigenous good practices are gradually disappearing, local self sustenance is rapidly diminishing, local technologies and resources are under-utilized and they are being replaced by more expensive alien know-how and expertise which is unaffordable, and might prove unfriendly in the long run. As the result, underdeveloped country/area perennially remains underdeveloped.

Retention of Human Capital

In the context of human capital management in the underdeveloped sectors, retaining of it is probably the biggest challenge. Inappropriate education system blinds the person about even apparently existing potentials at the local level. Higher wage levels in the developed countries, language advantage was provided in the interest of those countries by wrong orientation of education system and seemingly lack of opportunity at local level work as push factors to human capital flight (Lee, 1966).

The policy of required human capital retention must be supplemented by an appropriately devised education system. A functional educational system that provides mainly technical education in mother tongue works as major factor for such retentions. As it is, it develops nationalistic feelings and sense of belonging with the locality in question. The acquired knowledge provides for a sense of self-gratification as the new knowledge also corroborates with the day-to-day life and familiar surroundings. In this situation, the economic and other incentives as the pull factors in migration in potential destination have to be much stronger (Lee, 1966). This is because the general human tendency for migration is that people are not willing to leave the place of origin where social and culture bonding that provide a sense of identity are stronger even if the economic rate of return is smaller than in the potential destination. The underdeveloped country/area should be able to utilize this phenomena.

Diffusion of Knowledge and Skill

Generally adequate diffusion of knowledge and skills in the underdeveloped sectors is an uphill task. But, once proper policies of recognition, production and retention for the human capital are in place, primarily by means appropriately designed education system, the diffusion becomes a spontaneous process. In the particular context of underdeveloped country/area, where literacy and formal education levels are low, transfer of useful knowledge through practice and interaction can contribute significantly in the development process. Formal trainings and academic exercises unquestionably have their own value. It may be emphasized here that the chances of diffusion of knowledge and skills needed for the development of underdeveloped area increases significantly only if the technical education is imparted mainly in the mother tongue, national or local (familiar) language.

VI. CONCLUSION

The recognition of the human capital flight as the most crucial cause of underdevelopment provides new basis for development discourse. Viewing the human

capital just equivalent to skilled labour is not adequate. The creative faculty of the human being which is obviously not easily measurable but has great value and knowledge about the resources of the development-aspiring area are added variables in defining human capital.

The concept 'The Human Capital Flight: The Cause of Underdevelopment' requires a lot of groundwork and academic research to provide for convincing empirical foundations. However a cautious approach must be adopted such that excessive uses of statistical methods once again do not dilute the main concept itself. It is apparently an established phenomenon already.

On the basis of mainly considering a country as the economic unit, there are ample examples where economic progress has been highly impressive by retention of human capital through the policy of providing technical education in the mother tongue. Japan is the most glaring example as its education policy has been to impart all forms of knowledge in the mother tongue. Impressive growth of China fueled by cheap production cost is largely due to retention of the human capital. There are several other examples where the countries with poor economic performance have excelled with the contribution of a single generation of properly educated workforce that could be retained in the country. It is high time that we start acting in this direction to address the issue of underdevelopment.

To conclude, Nepal needs to evaluate the development models and practices it adopted in the past and mend the development practices to bring the country out of the poverty trap. The education system must be reviewed first so that the trained manpower could be retained here. There are two trends of out-migration of the Nepali workforce. One, unskilled or semi-skilled labour force temporarily migrates, remits its limited earnings back home that is just enough to sustain for his family, and returns after its productive ability is effectively diminished. Two, the workforce with better educational training at the expense of this poor country's resources migrates and assimilates in the developed country culture. The country suffers double losses by investing heavily in the English-oriented education, and ultimately loosing the person so educated in the interest of the developed world that did not invest in creating this human capital. This drain of resources both in the form of capital and human capital is pushing the country further in the vicious cycle of poverty. Immediate intervention in the education system and ongoing flight of the human capital can effectively contribute to the development efforts.

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The HIPC Initiative, MDRI and Nepal: A Re-examination[#]

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The HIPC Initiative was established in 1996 with the prime goal of reducing eligible countries' debt burdens to the thresholds fixed under the Initiative. There are both costs and benefits associated with participation under the Initiative. For many interim HIPCs, the challenges in meeting their completion point triggers pertain to maintaining macroeconomic stability, preparing participatory Poverty Reduction Strategy Papers (PRSPs) as well as other country-specific triggers. At the completion point, full debt cancellation under the MDRI is granted. Nepal is one of the ten pre-decision point countries potentially eligible for participation under the Enhanced HIPC Initiative. The possible conditions linked to the country's entry to the HIPC Initiative, the level of existing concessionary foreign assistance that could be non-concessionary and the likely possible debt situation after reaching the completion point are some of the issues that need a re-examination.

I. INTRODUCTION

After the upsurge in foreign debt owed by many low-income countries (LICs) throughout the 1970s and 1980s, low growth, declining commodity prices, and other economic shocks resulted in a number of countries possessing unsustainable debt burdens. By 1992, the 33 most indebted LICs incurred debts whose present value had more than doubled in ten years to over six times their annual exports. Beginning in the late 1980s, the Paris Club and other bilateral creditors rescheduled and forgave many of these debts. However by the mid 1990s, with an increasing share of debt owed to multilateral lenders such as the World Bank, the IMF and regional development banks, a new debt relief initiative was demanded, involving these creditors, to address the concern that poor countries' debts were hindering poverty reduction efforts.

[#] Revised and updated version of the study entitled "The HIPC Initiative and Debt Relief: An Examination of Issues Relevant to Nepal," which appeared as *NRB Working Paper* (NRB/WP/2), October, 2006.

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Accordingly, in 1996 the Heavily Indebted Poor Countries (HIPC) Initiative was launched by the IMF and the World Bank, with the goal of ensuring that no poor country experiences a debt burden it cannot manage. The Initiative demanded coordinated action by the international financial community to lower to sustainable levels the external debt burdens of the most heavily indebted poor countries. After a detailed assessment, the HIPC Initiative was enhanced in September 1999 to provide deeper and more rapid relief to a wider group of countries, and to reinforce the relationships between debt relief, poverty reduction and social policies.[1] The list of countries that have been qualified for, are eligible or potentially eligible and may wish to receive HIPC Initiative assistance (as of end-July 2007) is illustrated in Annex 1.

The Multilateral Debt Relief Initiative (MDRI), on the other hand, refers to the proposal made by the G8 in June that three multilateral institutions—the African Development Bank (AfDB), the International Development Association (IDA), and the International Monetary Fund (IMF)—cancel 100 percent of their debt claims on countries that have reached, or will eventually reach, the completion point under the Enhanced HIPC Initiative. The main objective was to free up additional resources to help these countries reach the Millennium Development Goals (MDGs).[2] In March 2007, the Inter-American Development Bank (IDB) joined these three multilateral institutions in providing 100 percent debt relief on eligible credits to post-completion-point HIPCs.

The rationale behind the HIPC Initiative was that debt-overhang has a negative impact on growth and investment because high debt service obligations reduce the flexibility of fiscal policy and the scope for public investment; moreover, they create uncertainty about future macroeconomic developments among potential domestic and foreign investors, and therefore raise the cost of borrowing. This is because creditors tend to require a higher marginal return when there is uncertainty over a country's future debt servicing capacity.

The higher cost of borrowing reduces the willingness of governments to undertake public investment, with attendant effects on private investment and growth. In addition, as governments are forced to divert resources to servicing debt and away from investment and social expenditure, the presence of a severe debt overhang can undermine a country's ability to pursue the MDGs. Debt service obligations can create fiscal constraints that distort effective resource utilization, and they diminish a government's capacity to form and shape a national development strategy. An underlying principle of the HIPC Initiative, therefore, was to use the newly freed public resources from lower debt service payments to increase social expenditures aimed at reducing poverty. [3]

As per the HIPC criteria, Nepal was found to be satisfying all the conditions needed to reach the decision point based on income and indebtedness criteria applied to end-2004 data. The Net Present Value (NPV) of external debt for end-2004 was estimated at almost 200 percent of exports of goods and services. Nepal could begin receiving interim relief on a provisional basis if it decides to enter the HIPC Initiative and its participation could

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[1] The continued efforts by countries toward macroeconomic adjustment and structural and social policy reforms—including higher spending on social sector programs such as basic health and education—comprise the core aspects of the Enhanced HIPC Initiative.

[2] For details, refer to African Development Bank Group (2006).

[3] This aspect of using the public resources from lower debt service payments is analyzed in UNCTAD (2006).

help release its resources from debt servicing obligations that will facilitate the country in implementing poverty reduction programs more effectively.

The remainder of this paper is planned as follows. The next section discusses the operational framework of the debt relief initiatives after which some pros and cons of participation under these initiatives are examined. Section III reviews the external debt situation of Nepal and discusses some pertinent issues that need to be considered prior to the country's participation under the HIPC Initiative, if it so decides. The last section makes some closing observations.

II. THE HIPC INITIATIVE AND MDRI FRAMEWORK

Criteria

Generally, a country must satisfy a set of criteria in order for it to qualify for the HIPC Initiative assistance. Specifically, it must: (1) be IDA-only and Poverty Reduction Growth Facility (PRGF)-eligible, (2) face an unsustainable debt burden, beyond traditionally available debt-relief mechanisms[4], (3) have a track record of reform and sound policies through IMF- and IDA-supported programs, and (4) establish a track record of reform and develop a PRSP through the involvement of the civil society.[5]

For reaching the decision point, the first stage of qualification, a country needs to possess a track record of macroeconomic stability, have developed an Interim PRSP, and cleared any outstanding arrears. At the decision point, the country agrees to a list of completion point triggers, upon which it will 'graduate' from the HIPC Initiative. At this point, a debt sustainability analysis is undertaken to determine the level of indebtedness of the country and the amount of debt relief it may obtain. The amount of debt relief required to bring the country's debt indicators to HIPC thresholds is computed, and the country starts getting interim debt relief on a provisional basis.

The interim period between a country's decision and completion points varies depending on how fast a country can implement its poverty reduction strategy and maintain macroeconomic stability.[6] In order to arrive at the completion point, the country

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[4] A country's debt level is unsustainable if NPV of debt-to-export levels are above a fixed ratio of 150 percent, or, in countries where exclusive dependence on external indicators may not sufficiently demonstrate the fiscal burden of external debt, the NPV of debt-to-government revenues are greater than 250 percent.

[5] Details are provided in World Bank Independent Evaluation Group (2006).

[6] The average length of time that HIPCs spend between decision and completion points has increased since 2000, reflecting challenges in meeting completion-point triggers. Interim periods have ranged from three months in Uganda (which was a "retroactive" case for purposes of the enhanced HIPC Initiative) to more than six years in São Tomé and Príncipe. Although countries' experiences are diverse, two observations can be made. One, most HIPCs that reached completion point early had made substantial progress in economic reforms under the original HIPC Initiative. The average interim period for countries that participated in the original HIPC Initiative is nearly two years shorter than for those that joined under the enhanced HIPC Initiative (2 vs. 3.8 years). Two, post-conflict HIPCs have needed or may need longer interim periods to address institutional weaknesses and gather sufficient political support to implement sustained reforms. For more this, see IMF (2007).

is required to maintain macroeconomic stability based on a PRGF-supported program, undertake major structural and social reforms as agreed upon at the decision point, and implement a PRSP satisfactorily for one year. After attaining the completion point, the country obtains the full amount of debt relief, which then becomes irrevocable.

In an additional push to resolve the debt problem of the poorest countries, in July 2005 the G-8 announced the Multilateral Debt Relief Initiative (MDRI), which provides countries that have reached the completion point under the HIPC Initiative with 100 per cent debt cancellation of claims from multilateral financial institutions. The objective of the G-8 proposal is to complete the HIPC debt relief process by providing additional resources to support the countries' efforts to achieve the MDGs. The cancellation of the multilateral debt of these countries is expected to have a profound impact on the burden of their debt overhang and on the pursuit of their development objectives.[7]

The conditionality for procuring debt relief under the MDRI is the following: a) for pre-decision and interim HIPC countries: reaching of the completion point; b) for post-completion-point countries: satisfactory macroeconomic performance; satisfactory implementation of the PRS; improvements in governance and transparency; and c) for non-HIPC countries qualifying under the per-capita criteria, similar conditions are applicable as for the post-completion countries.[8]

Pros & Cons

Besides reduced external debt burdens, countries that choose to participate under the Enhanced HIPC Initiative benefit from debt relief in other ways. Some general advantages of participation could include the following:

- Members of the Paris Club normally provide debt relief above and beyond what is called for in the Initiative**.** In the past, many members of the Paris Club have granted total debt write-downs to HIPC countries.
- The reduction in debt service should allow for a significant rise in poverty reducing expenditures. In the countries that have reached the decision point, poverty-reducing expenditures have risen from an average 6.4 percent of GDP in 1999 to an estimated 9.1 percent in 2005.
- At the completion point full debt cancellation under the MDRI is granted.

However, the country should be clear on certain issues and misconceptions before considering participation in the HIPC Initiative. These include the following:

- Countries need to satisfy certain conditions in order to obtain relief under the Initiative**.** Though considerable efforts are devoted to identifying conditions that will maximize the Initiative's impact and safeguard financial resources, these conditions may require strong efforts on the part of the related authorities. The completion point triggers normally encompass the following: a) macroeconomic stability; b)

[7] The effect of the cancellation of multilateral debt of the HIPCs on their development goals is analyzed in UNCTAD (2006).

[8] It should be noted that so far only two countries (Cambodia and Tajikistan) have been qualified under the per capita income criteria (that is, per capita income below $380) and this applies only to the outstanding debt to the IMF.

implementation of key structural reform measures, including social sector reforms under the World Bank and IMF programs; c) improvements in public expenditure management; and d) more spending in priority areas consistent with PRSP objectives.

- Some bilateral creditors may scale back new assistance for a few years after they grant debt relief.
- The HIPC Initiative is not a panacea**.** It helps lower poverty by re-directing the savings from debt relief to poverty reducing areas, but it cannot result in the complete eradication of poverty. Likewise, fiscal solvency is not guaranteed by the relief. The Initiative provides debt reduction and improves government balance sheets. Long-term debt sustainability is based on solid growth that relies on sound government policies, including prudent external borrowing and debt management.

The HIPC Initiative also possesses some limitations:[9]

- Eligible countries, even after reaching the completion point, are still liable to experience unnecessary delays in getting debt relief because some of the creditor nations and institutions want to limit their own costs as much as possible.
- Debt sustainability is linked to levels of export receipts while less emphasis is accorded to the social and human development such as education, health and poverty reduction.
- Continued servicing of debt at unsustainable levels undermines development priorities and needs of eligible countries.

Again, the HIPC Initiative has its own conditions, which have to be fulfilled by any prospective country before qualifying for the scheme. For example, Mozambique was required to open up its cashew nut industry by sending raw nuts abroad for processing. This happened despite the presence of a local processing plant. As a result, the country received lower prices from its cashew nuts while a large number of Mozambican workers lost their jobs.[10]

While the HIPCs as a group have made progress in terms of a number of debt indicators, such as the ratio of debt service to exports and debt service to government revenue, a number of completion point countries continue to have unsustainable levels of debt. According to World Bank estimates based on 2003 NPV debt ratios of 13 countries for which data was available, the debt ratios of 11 countries have deteriorated; of these, 8 countries have exceeded the sustainability thresholds. Moreover, one third of the completion point countries – Burkina Faso, Ethiopia, Guyana, Nicaragua, Rwanda and Uganda – are expected to exceed the sustainability thresholds in the medium term of the post-completion period.[11]

Long-term debt sustainability demands HIPCs to promote export growth and diversification. However, access for HIPCs' products to OECD markets continues to be a problem. Most HIPCs are very poor countries, thus benefiting under the Generalized System of Preferences (GSP) or are sub-Saharan African countries, thus covered by the American Growth and Opportunity Act (AGOA) or similar schemes conducted by some

[9] These limitations have been extensively discussed by Olukoshi (1999), Kamidza *et. al* (2002) and ESCAP (2005).
[10] See Kamidza *et. a*l (2002) for further elaboration.
[11] These figures are taken from UNCTAD (2006).

other OECD countries. Many of these schemes grant duty and quota free access to a large number of export products originating in these countries. However, stringent rules of origin requirements act as obstacles in realizing the full potential of the preferential arrangements.

A recent paper has highlighted a number of structural factors affecting the external debt sustainability of HIPC completion point countries.[12] It reveals that (i) while comparing favorably with other LICs, the policy and institutional frameworks of completion point countries in general are still quite weak, and their debt management practices remain inferior to international standards; and (ii) their export base remains narrow and fiscal revenue mobilization falls behind, even compared with many other LICs. According to this research, completion point countries will continue to encounter a dilemma due to their large priority financing needs for development on the one hand, and the need to maintain long-term debt sustainability on the other. To attain debt sustainability, these countries need to maintain macroeconomic stability and deepen reforms to improve policy and institutional frameworks, strengthen debt management, mobilize domestic revenues, and generate a climate conducive to attracting foreign direct investment and diversifying exports.

The Independent Evaluation Group (IEG) of the World Bank has noted that countries not yet at completion point—both decision-point and pre-decision point countries—have, on average, the lowest ratings of all the LICs and are liable to grave challenges in managing their economies that will affect their prospects of garnering the benefit of debt reduction. Fiscal and debt management are the major areas of concern in many HIPCs.[13]

The HIPCs possess weak capacity to manage their public debt. The performance in public debt management has worsened in all the LICs. Experiences demonstrate that just debt reduction is not a sufficient mechanism to affect the multiple drives of debt sustainability. Sustained improvements in export diversification, fiscal management, the terms of new financing, and public debt management are required, actions that are beyond the purview of the HIPC Initiative.

Impact

Debt relief under the HIPC Initiative framework and the MDRI is estimated to have reduced the debt stock of post-decision-point HIPCs by US$96 billion in end-2006 NPV terms, but long-term debt sustainability remains a challenge.

In 2007, annual debt-service savings from the MDRI for the post-completion-point countries are expected to amount to US$1.3 billion, equivalent to about 1 percent of these countries' GDP on average. These savings vary considerably across countries, from 0.3 percent of GDP for Zambia to 1.8 percent of GDP for Guyana. All countries have simultaneously increased budgetary allocations to pro-poor growth programs. In general, countries that have benefited from the MDRI are expected to use the available resources to increase poverty-reducing spending and to help meet the MDGs.[14]

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[12] The structural factors are elaborated by Sun (2004).

[13] These concerns are elaborated in World Bank Independent Evaluation Group (2006).

[14] The discussion on the rise in poverty reducing expenditures for meeting the MDGs is given in IMF (2007).

The decrease in debt-service has been accompanied by an increase in poverty-reducing expenditures. Poverty-reducing expenditures in post-decision-point HIPCs have increased on average from under 7 percent of GDP in 2000 to 9 percent in 2006. In nominal terms, poverty-reducing expenditures amounted to US$17 billion in 2006, which represents an increase of US$3 billion since 2005.

Debt burden indicators have declined in post-completion-point HIPCs. Their debt-service-to-export ratios, on average, have been reduced from over 18 percent before the decision point to 8 percent four years after the decision point. The NPV of debt-to-exports ratio in post-completion-point HIPCs has declined in the four years after the decision point, with the cumulative reduction over five years amounting to 152 percentage points, of which 24 percentage points was due to a decrease in debt stocks and 128 percentage points were due to increase in exports.

Notwithstanding the decline in debt burdens, long-term debt sustainability remains a challenge for HIPCs. Although HIPC Initiative and MDRI debt relief have contributed to improved debt indicators, only about 50 percent of the post-completion-point HIPCs are classified as having a low risk of debt distress. This suggests that underlying vulnerabilities remain and must be addressed. While policies aimed at diversifying exports, strengthening institutions, and using external resources efficiently are paramount for long-term debt sustainability, prudent borrowing in line with a country's repayment capacity is also crucial.

III. NEPAL'S EXTERNAL DEBT AND ISSUES FOR CONSIDERATION

Outstanding External Debt & Creditor Composition

There has been a growing discussion relating to Nepal's participation under the HIPC Initiative after the country was found to be eligible for debt relief under this Initiative.[15] This part of this paper thus assesses the recent trends of external debt of Nepal. Some pertinent issues that need to be sorted out by Nepal prior to its decision on participation under the HIPC Initiative are also examined.

The outstanding external debt of Nepal went up to US$ 3.31 billion as at mid-July 2007 from US$ 2.66 billion as at mid-July 2001.[16] It rose at an average annual growth rate of 3.73 percent in the last six years. However, in the same period, the external debt/GDP ratio declined from 44 percent to 32 percent whereas external debt/revenue ratio fell from 401 percent to 271 percent. In other words, the external debt/government revenue and external debt/GDP ratios have been more favorable in 2006/07 in comparison to 2000/01. But, the external debt/exports ratio has risen from 229 percent in 2000/01 to 246 percent in 2006/07 (Figure 1 and Annex 3).

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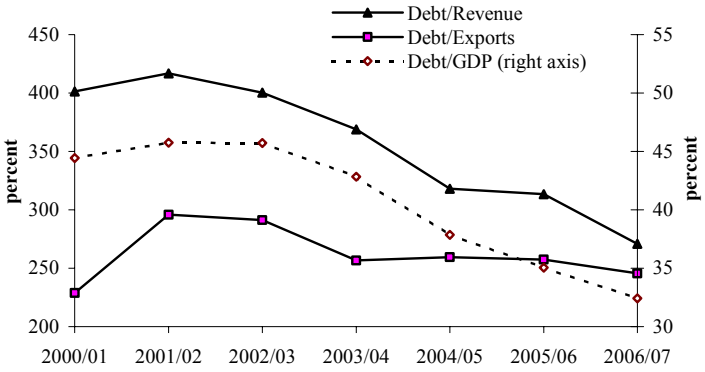
[15] The country was eligible for participation as a) it is IDA-only and PRGF eligible; b) it has a full PRSP in place since May 2003; and c) the NPV of debt-to-exports ratio is higher than 150 percent (or 198 percent) on end-2004 data.

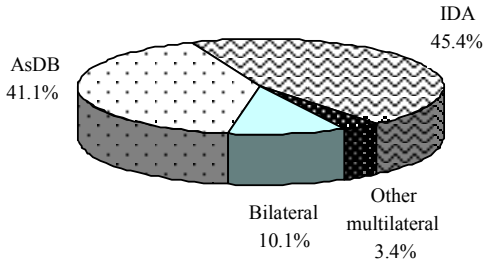
[16] External debt in this section refers to the medium and long-term external debt of the government only. The short-term loans, which includes trade credits and private external debt are very nominal and excluded.

FIGURE 1 : External Debt Stock Indicators



The share of multilateral creditors in the total external debt of Nepal went up from 84.5 percent in 2000/01 to 89.8 percent in 2006/07; correspondingly, the share of bilateral creditors went down from 15.5 percent to 10.1 percent in the same period. Among the multilateral creditors, the IDA ranks at the top since out of the nominal external debt-stock of US$ 3.31 billion at mid-July 2007, IDA alone accounts for 45.4 percent. The Asian Development Bank (AsDB) is the second largest creditor forming 41.1 percent of the country's outstanding external debt as at mid-July 2007 (Figure 2). Other important multilateral creditors of Nepal comprise of Organization of Petroleum Exporting Countries (OPEC), Nordic Development Fund (NDF), European Economic Community (EEC) and International Finance for Agriculture Development (IFAD). Among the bilateral creditors, Japan is the largest creditor constituting 7.2 percent of the total external debt as at mid-July 2007.

FIGURE 2: Creditor Composition in Outstanding
External Debt Stock As At Mid-July 2007



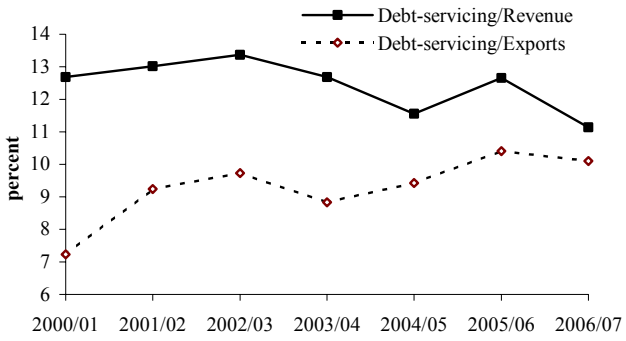
The analysis for Nepal's eligibility for HIPC initiative carried out by the IMF is based on the end-2004 data. Of the total external debt-stock of US$ 3.25 billion outstanding at end-2004, the IDA constituted about 46 percent while AsDB accounted for 41 percent. The net present value (NPV) of end-2004 level of external debt after traditional debt-relief stood at US$ 2.15 billion. With respect to debt-burden at end-2004, ADB loan

constituted the heaviest debt-burden comprising about 47.2 percent of the total NPV of debt followed by IDA loan comprising about 40.4 percent of the total NPV of debt (Annex 2).

Debt-servicing and Debt-burden Indicators

External debt servicing, comprising both amortization and interest payment, had gradually gone up from US$ 84 million in 2000/01 to US$ 136 million in 2006/07. In terms of percentage of GDP, debt servicing has been fluctuating between 1.3 and 1.5 percent in the last six years. The debt-servicing/exports ratio increased from 7.2 percent in 2000/01 to 10.1 percent in 2006/07 whereas debt-servicing/revenue ratio dropped from 12.7 percent to 11.1 percent in the same period (Figure 3 and Annex 3). The major cause for the low ratios of debt servicing to export and revenue in comparison to the size of external debt-stock was the high concessionary terms on the loans contracted to Nepal.

FIGURE 3 : Debt Servicing Indicators



The debt-burden indicators are calculated separately and differently under the HIPC-DSA and LIC-DSA (low income countries' debt sustainability analysis) frameworks. The HIPC-DSA, which is conducted at decision point and again at completion point, is the basis for determining the amount of debt relief to be granted under the HIPC initiative. The LIC-DSA, on the other hand, is conducted annually for all LICs, including countries participating under the HIPC Initiative, and facilitates in deciding the terms of each country's IDA financing. For HIPC countries, the two DSAs are conducted in parallel. A principal difference between these two DSAs is that while the LIC-DSA considers a single discount rate, the HIPC-DSA uses currency-specific short-term interest rates for computing the NPV of external debt.

While Figure 4 and Annex 4 show the debt-burden indicators of Nepal computed under the HIPC-DSA framework, Figure 5 and Annex 5 depict the debt-burden indicators on the basis of the LIC-DSA framework. Based on the HIPC-DSA and on the end-2004 data, the NPV of debt to exports ratio of Nepal stood at 198 percent, which exceeds the HIPC threshold of 150 percent. Likewise, the NPV of debt/revenue ratio stood at 255

percent exceeding the HIPC threshold of 250 percent. Hence, on the basis of end-2004 data, Nepal qualifies for the participation under the HIPC initiative. As of mid-July 2007, the estimated NPV of debt to exports ratio and the NPV of debt to revenue ratio of Nepal have fallen to 175 percent (still above HIPC threshold) and 180 percent, respectively.[17]

With respect to debt sustainability under LIC-DSA, the indicative threshold is governed by the Country Policy and Institutional Assessment (CPIA rating).[18] Nepal is rated as a medium policy performer and thus the indicative thresholds for Nepal are set at NPV of debt/exports ratio of 150 percent and NPV of debt/revenue ratio of 250 percent. At mid-July 2007, the corresponding ratios stood at 160 percent and 176 percent, indicating a improvement in debt situation compared to a year earlier.

FIGURE 4: Debt-burden Indicators under HIPC Framework (in NPV terms)

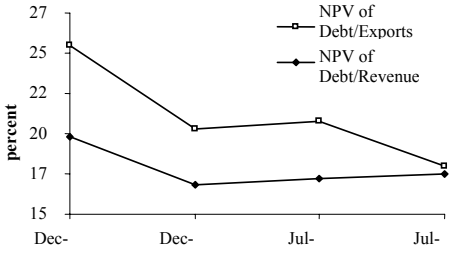
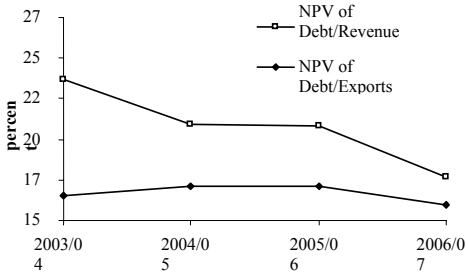


FIGURE 5: Debt-burden Indicators under LIC-DSA Framework (in NPV terms)



Preliminary Estimate of HIPC Debt relief

The amount of HIPC relief is the amount required to bring the NPV of debt to exports ratio (NPV after traditional debt relief and exports as a three year backward looking average) down to 150 percent. It is assumed that the traditional debt relief from the Paris Club and other bilateral creditors would be on Naples term, that is, reduction of NPV by 67 percent. Based on the data of end-2004, the possible HIPC debt relief to Nepal was estimated to be about US$ 521 million in NPV terms. However, based on the data available as at mid-July 2007, the NPV of debt to exports ratio of Nepal has declined to 175 percent. A rough estimate of the debt relief needed for bringing down this ratio to the

[17] The NPV of debt at mid-July 2007 is estimated one while the exports and revenues are the provisional figures.

[18] The CPIA is intended to evaluate the quality of a country's present policy and institutional framework. Quality implies how conducive that framework is to fostering poverty reduction, sustainable growth and the effective use of development assistance. From 1999 to 2003, the CPIA evaluated 20 broad areas, each with 5 percent weight in the overall CPIA rating. The 20 areas were further divided into four categories: economic management, structural policies, policies for social inclusion/equity, and public sector management and institutions. For details, see World Bank Independent Evaluation Group (2006).

threshold level (that is, 150 percent) would be about US$ 315 million in NPV terms. In nominal terms, this is equivalent to US$ 462 million.

For Nepal, the MDRI relief package that follows the completion point is very significant. Under the MDRI, Nepal could get a substantial relief as all the debt obligations to IDA (cut-off date end-2003) and IMF (cut-off date end-2004) would be cancelled. Assuming that HIPC relief would start on 2008 and the completion point would be reached in 2011, the MDRI relief that could follow is estimated around US$ 700 million in NPV terms and US$ 1.03 billion in nominal terms.[19] Of the total MDRI relief, the relief of US$ 695 million in NPV terms would be provided by IDA while the balance would be provided by the IMF. Thus, if Nepal opts to participate in HIPC, and reaches the completion point, it could bring an estimated relief total of US$ 1 billion in NPV terms and nearly US$ 1.5 billion in nominal terms. This would lower the debt service of Nepal and help secure additional resource flows to attain the MDGs.

Core Issues

Some issues need to be considered prior to Nepal's decision on participation under the HIPC Initiative. First of all, Nepal's participation in the HIPC Initiative demands that it satisfy a range of completion point triggers, which are basically the conditions for reaching the completion point. It is argued that difficulties could arise in implementing the completion point triggers especially in the changed political context where consensus-building through a participatory mode is required. However, it should be remembered that the details of the completion point triggers would be finalized only through negotiations after Nepal reaches the decision point. Moreover, waivers have been made on completion point triggers.[20] It is possible to have a general idea on what would be the possible reform measures required to reach the completion point by reviewing the completion point triggers of the countries that have already entered in HIPC Initiative.[21]

There could be an increase in country risk associated with being classified under the HIPC category. This may make it difficult for the government to raise money from the international capital market if it wants to finance specific projects. This was one of the reasons cited by some countries such as Sri Lanka and Laos for not participating under the HIPC Initiative. [22]

If Nepal opts for participation under the HIPC Initiative, it would be the second Asian country, after Afghanistan. As under the MDRI where the IMF, the IDA of the World Bank, the IDB and the AfDB are to cancel 100 percent of their debt claims on countries that have reached, or will eventually reach, the completion point under the HIPC Initiative, in the Nepalese perspective it is important to be clear on whether or not AsDB

[19] This is just a rough estimate calculated by deducting amount of HIPC relief that would be provided by IDA and IMF from the NPV of debt outstanding to IDA and IMF (of the borrowings made till end-2003 and end-2004 respectively) as at 2011.

[20] The waivers are discussed at length in World Bank Independent Evaluation Group (2006).

[21] To have a general idea on the completion point triggers of individual countries, refer to IMF (2008) and Pant and Subedi (2006).

[22] Details of these countries for not participating under the HIPC Initiative are given in IMF (2006) and Dahal (2006).

would be also participating. This is because the AsDB is the second largest creditor of the country's outstanding external debt as at mid-July 2007.

Another concern relates to Japan which is a major bilateral creditor and has been providing support since a long time. It is uncertain whether Japan will continue with the present aid package to Nepal if the country decides to participate as Japan is one of largest G8 creditors contributing to the HIPC Fund. It is believed that the modalities on which the HIPC Initiative is based does not permit the Japan Bank for International Cooperation, the major window for assistance from Japan, to lend to participants.[23] Thus, one issue is how the debt relief will impact other aid flows particularly future grants and loan commitments from different donors presently assisting Nepal in its development process.

V. CONCLUSION

The HIPC Initiative has played an instrumental role in lowering the debt stocks of the post-completion-point HIPCs, but only this is not enough to ensure long-run debt sustainability in these countries. Long-term sustainability also depends on more efforts from both the HIPCs and the creditors to ameliorate export diversification, fiscal and public debt management, and to procure new financing on more generous terms and conditions.

Currently, Nepal is one of the eight pre-decision point countries considered for participation under the HIPC Initiative. The expected decision point is uncertain. For Nepal, the debt relief from participation under the Enhanced HIPC Initiative may not be that valuable when compared to the relief emanating from the MDRI. However, to be eligible for the MDRI relief, it is mandatory for the country to reach the completion point of the HIPC Initiative.

The possible conditions and the reform measures that need to be additionally implemented if Nepal were to participate under the HIPC initiative, the level of existing concessionary foreign assistance that could be non-concessionary and the possible debt situation after reaching the completion point are some of the major issues that need a re-examination. In the ultimate analysis, it is important for the country to formulate a 'debt reform plan' and to strengthen its debt management capacity. Experiences of other countries show that after being provided debt relief countries easily fall back into debt distress due to poor public debt management practices.

[23] Japan Bank for International Cooperation has a statutory mandate to undertake lending and other operations for the promotion of Japanese exports, imports and economic activities overseas.

ANNEX 1: List of Countries That Have Qualified for, are Eligible or Potentially Eligible and May Wish to Receive HIPC Initiative Assistance (as of March 2008)

Post-Completion Point Countries (23)[a]		
Benin	Honduras	Rwanda
Bolivia	Madagascar	Sao Tome & Principe
Burkina Faso	Malawi	Senegal
Cameroon	Mali	Sierra Leone
Ethiopia	Mauritania	Tanzania
The Gambia	Mozambique	Uganda
Ghana	Nicaragua	Zambia
Guyana	Niger	
Interim Countries (10)[b]		
Afghanistan	Republic of Congo	Guinea-Bissau
Burundi	Democratic Republic of Congo	Haiti
Central African Republic	Guinea	Liberia
Chad		
Pre-Decision-Point Countries (8)[c]		
Comoros	Kyrgyz Republic	Sudan
Cote d'Ivoire	Nepal	Togo
Eritrea	Somalia	

Source: IMF (2008)

a Countries that have qualified for irrevocable debt relief under the HIPC Initiative and have received MDRI relief.

b Countries that have qualified for assistance under the HIPC Initiative (i.e. reached decision point), but have not yet reached completion point.

c Countries that are potentially eligible and may wish to avail themselves of the HIPC Initiative.

ANNEX 2 : Debt-stock By Major Creditors As At End-2004

	Nominal (mil. US $)	% Share	NPV (mil. US $)	% Share
External debt stock	*3250.8*	*100.0*	*2153.5*	*100.0*
a. Multilateral	*2962.9*	*91.1*	*1970.0*	*91.5*
o/w AsDB	1342.7	41.3	1017.3	47.2
o/w IDA	1494.6	46.0	869.3	40.4
o/w IMF	22.1	0.7	16.5	0.8
o/w IFAD	66.0	2.0	41.3	1.9
b. Official Bilateral	*287.9*	*8.9*	*183.5*	*8.5*
Paris Club	252.6	7.8	163.6	7.6
o/w JAPAN	167.6	5.2	122.7	5.7
Non Paris Club	35.3	1.1	19.9	0.9
o/w KUWAIT	6.9	0.2	4.0	0.2

Source: Financial Comptroller General Office (FCGO) and computations.

ANNEX 3 : External Debt and Debt Service (US $ in million)

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
	(in millions of US $						
Outstanding external debt stock	*2657.9*	*2734.3*	*2892.3*	*3115.5*	*3096.2*	*3132.5*	*3310.3*
of which							
IDA	1102	1156	1234	1381	1414	1434	1502
AsDB	1043	1132	1147	1207	1199	1235	1359
IFAD	55	57	60	63	62	63	65
Japan	291	317	305	316	300	268	239
France	40	44	47	48	43	42	42
Korea	9	10	11	11	12	11	13
Debt-service	*84*	*85*	*97*	*107*	*112*	*127*	*136*
Amortization	61	62	71	78	83	97	107
Interest payment	23	24	26	29	30	30	29
	(in percent)						
Debt/GDP	44	46	46	43	38	35	32
Debt/Exports*	229	296	291	257	260	258	246
Debt/Revenue	401	417	400	369	318	313	271
Debt-servicing/GDP	1.4	1.4	1.5	1.5	1.4	1.4	1.3
Debt-servicing/Exports*	7.2	9.2	9.7	8.8	9.4	10.4	10.1
Debt-servicing/Revenue	12.7	13.0	13.4	12.7	11.6	12.7	11.1

* Exports refer to export of both goods and services

Source: Nepal Rastra Bank (NRB), FCGO and computations.

ANNEX 4 : Debt-burden Indicators (in percent)

	HIPC threshold	Dec-2004	Dec-2005	Jul-2006	Jul-2007
NPV of debt/Exports[1]	*150*	197.8	168.6	171.9	175.1
NPV of debt/Revenue[2]	*250*	254.9	202.8	207.6	179.5
Revenue/GDP[3]	*15*	11.5	11.6	11.5	11.7
Exports/GDP[3]	*30*	15.8	15.2	14.9	13.7
Memorandum items:		(US $ in million)			
Nominal debt stock		3250.8	2979.3	3132.5	3310.3
NPV of debt (after traditional debt relief)		2153.5	1973.7	2075.2	2192.9
Exports [1]		1088.5	1170.4	1207.5	1252.1
Revenue[4]		794.1	893.0	939.1	1064.8
GDP[4]		6893.2	7695.6	8130.8	9108.4

Note:

1 exports refer to last three-year average of export of goods and non-factor services

2 revenue refers to current year revenue of the central government excluding grants

3 both numerator and denominator are calculated as average of last 3 years.

4 calculated as average of last 3 years

Source: NRB, FCGO and computations.

ANNEX 5 : Debt-burden Indicators (LIC-DSA)

	*Indicative threshold**	2003/04	2004/05	2005/06	2006/07
NPV of debt, in percent of					
Exports	*150*	164.9	170.9	171.0	159.9
GDP	*40*	27.5	24.9	23.3	21.1
Revenue	*250*	236.8	209.5	208.1	176.3
Debt-service, in percent of					
Exports	*20*	8.8	9.4	10.4	10.1
Revenue	*30*	12.7	11.6	12.7	11.1
Memorandum items:			(US $ in million)		
NPV of debt (LIC-DSA)+		2000.5	2038.3	2080.0	2154.0
Exports		1213.5	1192.9	1216.2	1347.4
GDP		7274.0	8179.5	8939.0	10206.8
Revenue		844.7	973.1	999.5	1222.0
Debt-service		107.2	112.4	126.5	136.1

Note:
+ : For 2006/07, rough estimate is used.
* : Based on Nepal's CPIA rating as a medium policy performer.

Source: NRB, FCGO and computations.

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Economic Impact of Tourism Finance in Nepal

Bishnu Prasad Gautam, Ph. D.*

This paper investigates the effects of tourism industry on gross domestic product (GDP) and finds a significant positive relationship between tourism financing and GDP. Moreover, the role of various sources of tourism financing, including government financing and the loan financing of banks and financial institutions, on economic growth has also been examined and the result supports the conventional wisdom that there is significant positive relationship between the variables. This paper uses primary data collected from the field survey during February - April 2006 and the secondary data utilizing 30 annual observations from FY 1974/75 to 2004/05. Both the level and logarithmic form data are examined using the OLS estimation method and the Cochrane-Orcutt (C-O) iterative procedure is applied considering the robustness of the model.

I. INTRODUCTION

Tourism comprises the activities of persons traveling to and staying in places outside their usual environment. World tourism is growing fast and even exceeding the expectations. The tourists' arrivals grew by 6 percent to 989 million in 2007 compared to 5.4 percent growth in the previous year (UNWTO, 2008). Similarly, tourism receipt increased by 8.3 percent to US$ 733 billion in 2006 (UNWTO, 2007)[1]. In the world, emerging markets and developing economies drive economic and tourism growth. The arrivals in Nepal (by air only) grew by 27.1 percent to 360,350 in 2007. It is estimated to cross 500,000 in the review year including the arrivals by land. Tourism industry is gradually picking up in Nepal. It is said that more than 1.50 million people are employed directly or indirectly in this industry. This sector directly contributes about 3 percent in GDP (though unofficial figures put it at around 11.0 percent). It earns more than 15 percent of total foreign currency and 30 percent of total revenue.

Financing means the act of providing money for a project or activity whereas investment means placing money so that it earns interest and increases the value. As tourism financing is expected to cover both the investment and financing function, it is imperative to find its role in economic growth and development.

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1 If international passenger transport is included in 2006, the figure comes to US $ 880 billion.

Several financing sources can be mobilized for tourism financing. Among these, private investment, government investment and foreign investment are the vital ones (UN ESCAP, 2001). In addition to these sources, loans from international and multilateral institutions/agencies as well as from domestic banks and financial institutions can be mobilized. Oliver Bennett (1991) has enlisted government budget, multilateral and bilateral grant and loans and investment from banks and financial institutions, state enterprises, private sector and overseas investors (including foreign direct investment) as the funding sources for tourism development. In fact, the funding sources comprise a mix of the above sources and appear to be very much similar with the financing of other sectors.

The growth of the tourism industry increases the demand for the product and services of tourism. The availability of such products and services highly depends on the production capacity, natural resources, product attractiveness, and supply conditions of an economy (Goeldner, Ritchie, and McIntosh, 2000). Moreover, it is also related to business entrepreneurship, investment climate, government policy and financing mechanism. Therefore, financing acts as a lubricant in the process of economic growth and its adequate supply increases the overall growth and development (Chand, 2000). Similarly, the investment made by various institutions on tourism accommodation, products and services triggers the earnings and employment along with economic and social transformation (Sharma, 2000).

II. Review of Literature

Tourism is one of the productive business activities directed for the production of the goods and services. It provides the goods and services for the customers (generally foreigners) while providing employment and income for the locals. With this not only the tourism business enterprises generate the earning from the operation of the business activities, but also the people related directly or indirectly with such business generate their earning. Further, tourism as an economic activity produces various direct, indirect and induced impacts in the economy. It increases the foreign exchange earning, generates the employment opportunity and increases the income. Again, the resultant income flows and circulates in the economy and boosts other economic activities ultimately inducing many rounds of income. Therefore, the role of tourism becomes distinct and significant in the economic growth and development of the country.

"In a world of balanced budgets, each spending unit's current and capital expenditures would be financed entirely from its current income" (Gurley and Shaw, 1956: 259). Though, self-financing continued to be important for several reasons, it could not cater to the growing demand for deficit financing. As such, the trend has changed significantly over the decades and made the government, business enterprises and even consumers to lean more heavily on external finance (Gurley and Shaw, 1955). Therefore, they can either mobilize internal finance through saving, for example, reserves and profits or external resources (for instance, loan, trade credit and foreign capital). In fact, they use both the sources for establishing a proper composition, taking into consideration the business opportunities and growth potential.

Despite its increasing importance, tourism has attracted relatively little attention in the literature in tourism financing and investment. However, few studies have dealt with

tourism investment covering either country specific or sector specific cases (Gautam, 2007).[1] Nevertheless, various scholars, such as Pearce (1981, 1989) provided the theoretical framework to measure the economic impact of the tourism activity. Similarly, Ghali (1976), Diamond (1977) and Jamieson and Jamal (1997), among others, attempted to measure the economic impact of tourism as well as the generation of employment opportunity through tourism considering various direct and indirect effects.

The studies of Ghali (1976) and Jimenez and Ortuno (2005), though based on country specific analysis, definitely provided frameworks and ingredients for the economic impact analysis for similar cases ranging from developed to developing countries. The tourism impact analysis presented in Zhang's (2001) paper has shown how regional analysis can be carried out by using an economic model. The purpose of any well-specified model is to offer decision-makers and regional analyst a useful tool for a wide variety of policy-oriented issues. The model presented in the study can be applied in several other policy-oriented projects, such as agriculture, transport and taxation policy and all kinds of regional analysis.

The impact of loan and investment on the economic activity, i.e. the national income, is measured by the money supply they create in the economy. With the increase in money supply, the economic activities increase. This leads to higher savings by the public resulting in an increase in investment and national income. Silber (1969) has attempted to find the answer to certain questions. For instance, does it matter in evaluating the impact of monetary policy whether an expansion (contraction) in money supply occurs through the banking system's purchase (sale) of securities from (to) the public or whether it increases (decreases) loans? If so, what will be the impact of purchase of securities by the banks on money supply, for that matter on national income? Further, is it important to distinguish between different types of loans?

Researchers such as Andersen (1969), Silber (1969), and Campbell (1978) have compared the impact of loans and advances with that of investment in securities to find out their respective contribution to the national income. They assumed that the increase in loans and advances increases the money supply more than that of the investment. Further, the increase in money supply enhances the economic activities, thus leading to higher economic growth. Shrestha's (1995) study had compared all the lending programs of the commercial banks along with their contributions to the respective GDP values. It had analyzed the role of bank lending on the respective share of GDP and concluded that without the bank lending, the sectoral GDP as well as the national income is largely affected. The study, thus, argued for the credit (support) on the various sectors of the economy and concluded that the bank lending in such sectors have been the key determining variable ultimately leading to higher economic growth.

[1] Studies pertaining to tourism investment include Bodlender (1984), Bull (1990), Franck (1990), Wen (1991), Forsyth (1994) and Schmidgall (1999). However, the coverage of such studies was either country specific or relatively narrow. Burkart and Medlik (1981), Chand (2000), Seth (2001), Raina and Lodha (2004) present brief and quite critical discussions on the subject matter whereas Whitehouse and Tille (1995), Massenger and Shaw (1993), Nagi (1997) and Releigh and Roginsky (1999) focus on the hotel and lodging sector, rather than the single aspect of tourism industry.

The transmission mechanism of bank lending in the economy does not appear much complex because in case of increase in loan, the borrower may quickly spend the money on real goods and services that increase the economic activities and ultimately affect the national income. In case of increase in bank investment on securities, the seller may not invest it immediately on real goods; rather he will invest in purchasing another financial asset (Shrestha, 1995). Hence, the role of tourism financing in the sectoral GDP as well as overall economic growth and development of the country becomes clear.

In summing up, Gurley and Shaw (1956) argued that self-financing cannot cater to the growing demand for deficit financing. Therefore, economic agents lean more heavily on external as well as internal finance. Ghali (1976), Jimenez and Ortuno (2005) and Zhang (2001) provided the frameworks for tourism impact analysis. The impact of different types of loans, including loans to the tourism industries, and resultant contraction and expansion of monetary aggregates and hence the growth of national income are analyzed by Silber (1969). Andersen (1969), Silber (1969), and Campbell (1978) have compared the impact of loans and advances with that of investment in securities to find their respective contribution on the national income. Shrestha (1995) found the prompt transmission mechanism of bank lending to the ultimate goals of the economy and concluded that the sectoral GDP as well as the national income is largely affected unless there is sufficient bank lending.

Despite the increasing importance of tourism for achieving the national economic goal, tourism financing and investment has attracted relatively little attention in the previous studies. The basic approach of this paper is to assess the relationship between the variables, applying both the primary as well as secondary data sources with clear demarcation of the impact of tourism financing and its various sources on economic growth. Taking these aspects into consideration, the basic objective of this paper is to investigate the relationship between tourism financing and economic growth.

III. METHODOLOGY

This paper utilizes secondary data of the required variables collected from Ministry of Finance, Nepal Rastra Bank, Ministry of Tourism and Civil Aviation, Nepal Tourism Board, banks and financial institutions as well as tourism business enterprises. The primary data are based on the surveys undertaken by the author for his Ph.D. research work during February – April 2006.

The coefficients of regression equation of economic growth models are estimated by using Ordinary Least Square (OLS) method. Both in the level as well as logarithmic form of data are utilized: $Y_t = \alpha + \beta_0 X_t + \beta_1 X_{t-1} + \beta_2 X_{t-2} + ... + \beta_k X_{t-k} + u_t$. This model can be written in compact form as: $Y_t = \alpha + \sum_{t=0}^{n} \beta_i X_{t-i} + u_t$ where, Y_t is dependent variable, α_o is intercept term, $\beta_i X_{i-1}$ are the various X_i independent variables corresponding with β_i coefficients. Variables are transformed to logarithm form before the regression is run considering high variability of the variables, so that those coefficients estimated are interpreted as elasticity coefficient, i.e. $\ln Y_t = \ln \alpha_o + \beta_1 \ln X_1 + \beta_2 \ln X_2 + ... + \beta_n \ln X_n$.

The empirical analysis in this paper is broadly divided into two parts: the first is the relationship between tourism financing and economic growth; the second is the relationship between various factors contributing to tourism financing and economic growth. The expected signs of all the independent variables on the dependent variables are hypothesized to be positive. The null hypothesis of first-order partial derivatives is expected to be zero as against non-zero for alternative hypothesis. The variables in the regression model are used in various combinations: bi-variate and multivariate. The statistical significance of coefficient of partial derivative is tested at 1 percent, 5 percent or at 10 percent significant level.

Often the residual term in an equation is correlated with its lagged values in different orders particularly in the time series data analysis. This is called the problem of autocorrelation in an equation. In order to test whether the residual term in the regression equation follows the first order autocorrelation, the DW test statistic is applied. Moreover, time series data are characterized by too high R^2 and too low DW statistic due to data being time trended. Achieving very high R^2 along with very low DW statistic in time series data is thought to be due to spurious relationships between the variables (Gujarati, 2004). This paper utilizes the Cochrane-Orcutt (C-O) iterative procedure (Cochrane and Orcutt, 1949) that transforms the regression model and hence satisfies all the properties needed for applying the least squares procedure. The estimable equation to overcome the autocorrelation problem is as follows:

$$Y_t^* = \beta_1^* + \beta_2 X_{t2}^* + \beta_3 X_{t3}^* + ... + \beta_k X_{tk}^* + \varepsilon_t ;$$

where, $Y_t^* = Y_t + \rho Y_{t-1}$, $\beta_1^* = \beta_1(1-\rho)$, and $X_{ti}^* = X_{ti} - \rho X_{t-1)i.....fort=2,3,...,n,andi-2,...,k}$. The iterative procedure is stopped when the estimates of the row from two successive iterations are constant.

The test statistics, such as, t, F, DW test, R^2 etc, are performed for the statistical validity of different aspects of the models. The response to unsatisfactory test leads to improvement and modification of the equation in some way, which helps to make the coefficients unbiased and consistent. The statistical significance of regression coefficients is tested using t-test.

IV. RESULTS AND INTERPRETATION OF THE ANALYSIS

The results of the analysis are divided into two parts. In the first part, an assessment will be made to examine the effect of tourism financing on economic growth followed by the effects of different sources of tourism financing on economic growth. The economic growth variable is taken as dependent variables whereas the variables proxied for tourism financing and various sources of tourism financing are taken as independent variables.

Economic Impact of Tourism Financing

Gross domestic product in nominal value (GDPN) is one important economic indicator of development composed of all the final goods and services produced in the economy over a one-year period (Sharma, 2001). The contribution of hotel, trade and

restaurant (GDPT) to the overall nominal GDP can also be proxied as an important economic growth variable. An increase in this variable has positive impact on overall GDP performance. In addition, the ratio of GDPT to GDPN (RGDPT) is also taken as a proxy for growth variable.

Likewise, it is imperative to see the impact of tourism financing (TFSD), which is proxied by supply of tourism financing which is derived by summing up of credit exposures of banks and financial institutions, development expenditure of the government as well as foreign aid and loan assistance in tourism. Different variables are used for different equations and in different combinations (including jointly) in order to find out the determinants and to reach the representative model. In addition, the study investigates into the presence or absence of autocorrelation and undertakes the remedial measures.

The effects of tourism financing on GDPT, GDPN and RGDPT are examined through log model and the results are presented in Table 1. The calculations are carried out in log linear form based on the respective analysis of R^2 as mentioned earlier and upon selection of the model that provides a better explanation. The theoretical expected sign of the coefficient (β_1) is positive i.e. $\beta_1 > 0$. It implies that tourism financing as an independent variable has a positive impact on economic growth (dependent variable).

The elasticity coefficient of the tourism financing is significant at 1 percent level for all the indices of economic growth. In addition to that, the coefficients are possessing the expected sign. The coefficient of determination (R^2) value, which shows the goodness of fit, is 0.81 for Ln.(GDPT), 0.87 for Ln.(GDPN) and 0.52 for Ln.(RGDPT), which is considered relatively high in the context of time series data. It also signifies that the variation in the dependent variable is explained by the independent variable. The F statistic is also statistically significant.

TABLE: 1: The Effects of Tourism Financing on Economic Growth

Equation	Dependent Variable	Constant	Independent Variable Ln.(TFSD)	R^2	F stat	DW
(I)	Ln.(GDPT)	1.861*	0.970*	0.81	124.4	0.75
		(2.891)	(11.155)			
(II)	Ln.(GDPN)	6.28*	0.72*	0.87	200.8	1.32
		(16.82)	(14.17)			
(III)	Ln.(RGDPT)	-4.421*	0.255*	0.52	31.24	0.31

Note: There are 30 observation covering the period 1975-2005. Ln stands for natural logarithm, TFSD = tourism financing, GDPT = contribution of hotel trade and restaurant to GDP, GDPN = gross domestic product at nominal price and RGDPT = ratio of GDPT to GDPN. Figures given below the coefficient of variable in parentheses indicate t values. Asterisks (*) signifies that the coefficient is significant at 1 per cent level.

All the equations seem statistically significant and possess the expected signs. The DW statistic shows the problem of autocorrelation. Therefore, all the equations are corrected for the problem of autocorrelation through Chochrane-Orcutt (C-O) procedure as discussed earlier. Table 2 presents the result of the corrected estimation.

TABLE 2 : The Effect of Tourism Financing on Economic Growth after Transforming the Data Using C-O Two Step Method

Equation	Dependent variable	Constant	Independent variable Ln. (TFSD)	R^2	F stat	DW
(IV)	Ln. (GDPT)	1.974*	0.518*	0.41	19.12	0.96
		(5.624)	(4.373)			
(V)	Ln. (GDPN)	4.539*	0.632*	0.74	79.35	1.67
		(12.752)	(8.908)			
(VI)	Ln. (RGDPT)	-0.201*	0.771	0.07	2.14	1.61
		(-6.121)	(1.462)			

The theoretical expected sign of the coefficient is positive. It implies that tourism financing has a positive impact on various indices of economic growth (dependent variable). The calculated DW value of the equations is compared again with the table value and found that there is no autocorrelation except in equation (IV). The equations possess theoretical expected signs. Since GDPN is a major growth variable, it possesses significant coefficients and has a good fit; it is also in conformity with the view that there is a significant impact of tourism financing on economic growth. However, TFSD is not affecting RGDPT in a significant way.

To sum up, it is clear that the indices of development are sensitive enough to the tourism financing. With this analysis and results, it can be concluded that tourism financing has a significant impact on the overall economic growth in the economy.

Effect of Sources of Tourism Financing on Economic Growth

It is also desirable to find out the contribution of various sources of tourism financing separately on economic growth. It is clear that there are different sources for tourism financing such as lending of banks and financial institutions, government budget allocation as well as foreign loan and assistance to the tourism sector. Hence, in order to assess the impact of such sources in the development indices, further regression analysis is carried out in the simple linear model. The model takes the growth variable, GDPT, as dependent variable and the different sources of investment financing as independent variables in the respective equations, both separately and in combination. Table 3, however, presents the major results only.

The theoretically expected signs of the coefficient are positive. It implies that tourism financing from each of sources has a positive impact on GDPT (dependent variable). As mentioned earlier, the contribution of hotel, trade and restaurant to the nominal GDP (GDPT) can also be proxied as an important economic growth variable because it is one of the economic sectors and an increase in this particular variable has positive impact on GDPN.

This section attempts to examine the effects of tourism financing from various sources on the growth variable, GDPT. Here, tourism loan disbursement of Nepal Industrial Development Corporation (LTDNIDC), loan disbursement of commercial banks (LSDCB), tourism expenditure of government (TEXP), government investment in civil aviation (GICA) and foreign loan disbursement in other sector including tourism (FADOT) are the explanatory variables on the model. The analysis, therefore, includes

the above variables in different combinations to determine the explanatory power of different independent variables.

Hence, the estimation is undertaken employing the variables such as LTDNIDC, LSDCB, TEXP, GICA and FADOT with respect to sectoral gross domestic product (GDPT) in the first equation (Table 3). The coefficients of LDSCB and TEXP are statistically significant at 1 percent level with theoretically expected signs. Similarly, LTDNIDC and GICA are significant at 5 percent level with expected signs. The FADOT is not found to be statistically significant because of the inclusion of more variables.

The partial coefficients of LTDNIDC, LSDCB, TEXP and GICA with respect to GDPT are found to be 47.13, 1.81, 64.04 and 2.29 respectively. It implies that one rupee increase in these variables have the impact on GDPT by the respective rupees' increase. For example, one rupee increase in LTDNIDC has an increase of Rs. 47.13 on GDPT.

Moreover, the effect of FADOT on GDPT is expected to be positive, i.e. with the increase in the amount of foreign aid and loan disbursement, there would be an increase in GDPT. In this equation, the coefficient is negative but not statistically significant. When GDPT is regressed only on FADOT, the coefficient turns out to be positive and statistically significant (refer to the fifth equation in Table 3).

However, the model, in terms of F statistic, is found to be a good fit. Further the adjusted R^2 is also found to be 0.92, which is quite high. Further, in the second equation (Table 3), the combination of independent variables comprising TEXP and GICA are included. The variables possess the theoretical expected signs. It is significant at 1 percent level. The value of coefficient of determination (Adj.R^2), which shows the goodness of fit, is 0.87, which is considered quite satisfactory. Further, the DW value shows the absence of an autocorrelation. This equation shows the significant impact of government budget allocation in the tourism sector that induces the economic growth.

TABLE 3 : Effect of Various Sources of Tourism Financing on Economic Growth

	Constant	Independent variable					Adj.	F -	DW
Equation	C	LDTNIDC	LDSCB	TEXP	GICA	FADOT	R^2	stat	Stat
1	351.72	47.125**	1.806*	64.040*	21.45**	-0.288	0.92	57.16	1.51
	(0.154)	(2.127)	(2.863)	(3.847)	(2.291)	(-0.123)			
2	-402.488			115.575*	31.94*		0.87	83.17	1.85
	(-0.145)			(8.415)	(3.120)				
3	1131.69			95.989*	23.49**	3.578**	0.89	66.70	1.80
	(0.425)			(6.193)	(2.303)	(2.197)			
4	2568.81	118.74*	3.73*				0.87	96.81	0.54
	(1.436)	(4.961)	(13.633)						
5	8177.2*					12.99*	0.62	45.49	0.59
	(3.244)					(6.744)	(R^2)		

Note: There are 30 observation covering the period 1975-2005. TFSD = tourism financing, GDPT = contribution of hotel trade and restaurant on GDP, LDTNIDC = tourism sector loan disbursement of NIDC, LDSCB = service sector loan disbursement of Commercial banks, TEXP = development expenditure of government in tourism sector, FADOT = foreign aid disbursement in other sector including tourism and GICA = government investment in civil aviation. Figures given below the coefficient of variable in parentheses indicate t values. Asterisk (*) signifies that the coefficient is significant at 1% level, asterisks (**) at 5% level and asterisks (***) at 10% level.

Similarly, in the third equation, TEXP, GICA and FADOT variables are included as explanatory variables. The variable TEXP is found statistically significant at 1 percent while GICA and FADOT are statistically significant at 5 percent significance level. All the variables possess the theoretically expected signs. Again, the model has a good explanatory power as well as good fit in terms of adjusted R^2 and F statistics, respectively. The DW value also shows the absence of an autocorrelation. Therefore, this result also demonstrates the significant role of these sources of tourism financing on the growth variable.

In addition, in order to map out the impact of lending in tourism industry from the banks and financial institutions, the fourth equation (Table 3) is undertaken. Here, the coefficient of loan disbursement of NIDC (LTDNIDC) is significant at 5 percent level and that of the service sector loan disbursement of commercial banks (LDSCB) at 1 percent level with respect to GDPT. The adj.R^2 signifies that about 87 percent of the variation in the dependent variable is explained by the independent variables.

To sum up the analysis, the first equation presented in Table 3 is considered to be a better model to show the impact of tourism financing from various sources in the development index. This model has a good coverage of the variables, better fit, significance of the coefficients and the theoretically expected signs of the variables. Therefore, the indicators of tourism financing such as LTDNIDC, LSDCB, TEXP, GICA and FODOT explain the economic growth in the sector. It shows that the tourism financing from various sources has a significant impact on the growth.

V. SUMMARY AND CONCLUSION

Tourism financing over the years has increased. To finance the tourism sector, several strategies and sources may be tapped. Among these, domestic private investment, government budget and foreign aid (bilateral and multilateral) have been tapped and other sources such as foreign direct investment and capital market, among others, should be explored.

It can be concluded that the government expenditure for tourism promotion and investment on civil aviation, as well as the loan disbursed by the commercial banks and Nepal Industrial Development Corporation has been significant for the development of tourism industry. Moreover, it has been a benign agent for hotels and other tourism business. It is the investment that has brought the significant changes in the infrastructure and superstructures necessary for tourism in order to reap the benefits from such industry. The empirical analysis relating to the effectiveness of tourism financing showed the significant impact of tourism financing on economic growth. It clearly illustrated that tourism financing has a significant economic impact. Further, the analysis also showed the significant impact of various sources of tourism financing such as the government, commercial banks and Nepal Industrial Development Corporation as well as foreign aid and loan disbursement.

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Inflation Expectations in Nepal

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There is a significant positive relationship between inflation and inflation expectations in Nepal, where the latter variable has been generated under Adaptive Expectation Hypothesis (AEH). Using 33 annual observations of actual inflation from 1973 to 2006, one percent increase in inflation expectations has 0.83 percent impact on contemporaneous inflation. The forecastability of inflation expectations on current inflation is higher than that of the expected inflation proxied by one-period lagged inflation. The forecastability of the model has been examined on the basis of minimum Root Mean Squared Error (RMSE). Therefore, it is desirable for the policymakers to consider inflation expectations while formulating monetary policy to anchor inflationary expectations of the economic agents.

I. INTRODUCTION

Inflation expectations play an important role in determining macroeconomic variables of an economy. Understanding the path of inflation expectations is imperative to the policymakers and economic agents in formulating policies and economic decision-makings. Controlling inflation through demand management has become a major objective of monetary policy in the recent global context. An emergence of various possible transmission mechanisms of monetary policy has opened an avenue to scrutinize the effect of inflation expectations on contemporaneous inflation in the framework of anchoring inflation expectations to achieve the desired objectives of monetary policy.

There is a positive relationship between inflation expectations and actual inflation (Dornbusch, Fischer and Startz, 2000). Expectation is a statement about an unknown future event (Frisch, 1983). Given the constant supply of goods and services in the market, an excess of expected inflation over actual inflation increases the consumers' demand for goods and services leading to a rise in contemporaneous inflation characterizing demand-pull inflation. Similarly, given the fixed demand for goods and services, if the supply of goods and services by the producers decreases as a result of an excess of expected inflation over the actual inflation and hence a rise in contemporaneous inflation, the inflation is attributed to short supply. If economic agents expect that inflation will take place in the future, inflation is sure to grow because the buyers would

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like to buy more and sellers want to supply less. Such phenomenon is referred to as the self-fulfilling prophecy (Friedman, 1968).

The production of goods and services depends on the anticipated or expected inflation. If the actual inflation is higher than the anticipated inflation, producers increase their production particularly in the short-run. They do so because high inflation is an incentive to the producers. A decrease in expectations of future inflation lead to a decrease in the current inflation via an incorporation of reduced inflationary expectations into current wage and price agreements between employers and employees (Sargent and Wallace, 1981, Flood and Garber, 1980). Large swings in inflation expectations are the factors leading to high volatility of output.

II. LITERATURE REVIEW

In the late 1960s and early 1970s, expectations of economic outcomes to the private economic agents dominated the field of macroeconomic analysis. The long-run policy prescription as postulated by Phillips Curve broke down since the early 1970s when the OPEC increased the price of crude oil. Consequently, the world economy suffered from stagflation and issues of inflation expectations gathered momentum. Friedman (1968) and Phelps (1967, 1968) based their natural-rate theories of unemployment on the Expectations Augmented Phillips Curve, where the relationship between actual inflation and unemployment depended on expected inflation. They introduced the inflation expectations in the erstwhile Phillips curve using the hypothesis that the workers as well as the firms are interested in the real wage rate rather than the nominal one (an absence of money illusion).[1] The Keynesian theory, which the Monetarists equate with a simple Phillips Curve[2] without adjustment for expectations, cannot explain the problem of accelerated inflation arising from high inflation expectations.

Irving Fisher (1980) argued the importance of expected rate of inflation while discussing real rate of return and expected rate of inflation as two determinants of nominal rate of interest, that is, $i = c + \Delta\%P$, where, 'c' is real rate of return and $\Delta\%P$ is change in inflation rate. Ex post, the price change will not be equal to its expectation unless financial markets in the country utilize all the available information; a possible risk premium, due to uncertainty about the future price change, is incorporated in nominal interest rate contemporaneously (Giddy, 2000).

Policy credibility, an issue which is gaining popularity at present, is one of the major determinants of inflation expectations. A lack of credibility of a policy would inhibit a sufficient fall in inflationary expectations (Fellner, 1976, 1979). In order to reduce inflation expectations, Jose, Slack and Sriram (2002) emphasized credibility, accountability and transparency in policy formulation. Summers (1993) found the inverse

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[1] The price equation for Augmented Phillips curve is $\dot{P} = \dot{P}^{e} - \beta(u - u_n) + v$, where the inflation rate has a positive and one-to-one relationship on the expected inflation rate & adverse supply shock and a negative relationship on the deviation of the unemployment rate from its natural rate.

[2] $\dot{P} = -\beta(u - u_n) + v$, where inflation ($\dot{P}$) depends on the rate of unemployment (u) which diverge from natural rate of unemployment (u_n), β stands for degree of responsiveness between the variables and v stands for other shocks affecting inflation.

relationship between central bank independency and reduction in inflation expectations. Nordhaus (1975) showed that political business cycle inhibited the reduction of inflation expectations. Alesina (1987) and Kydland and Prescott (1977) analyzed the prevalence of dynamic consistency problem arising from lack of credibility of economic policies to anchor the expectations formation of private economic agents. Monetary and fiscal coordination is the panacea for policy credibility (Blinder 1982, Loewy, 1983 and Sargent 1986). However, credibility is very difficult to obtain because of the inflationary inertia (Croushore, 1992).

Moreover, high credibility of monetary policy is to decrease inflation expectations which otherwise will increase today's inflation and interest rates, and hence a reduction of real money demand (Baxter, 1985). Therefore, there is a negative correlation between credibility and inflation and interest rates, and a positive correlation between credibility and real cash balances and reserves. High inflation in the past combined with indexation and weak credibility of monetary policy can make price more sensitive to shocks and create unstable inflation expectations (Crockett, 2000).

The countries adopting inflation targeting regime as a monetary policy framework rely on such regime as one possible means of stabilizing inflation expectations. Monetary policy credibility under the inflation targeting regime stabilizes inflation expectations. Large swings in inflation expectations could be a factor causing high volatility in output. A discretionary policy framework without announcing any numerical policy targets might create difficulties in forming inflation expectations. If monetary policy lacks credibility, the central bank is likely to influence expectations through actions than through announcements, and hence a retardation of economic growth (Higo, 2000).

As explained above, inflation expectation is an important variable that controls current inflation. Two theories are developed to explain the formation of expectations: the first is the Adaptive Expectations Hypothesis (AEH); and the second is the Rational Expectations Hypothesis (REH). If an economic agent has historical information on how the economic system functions, expectations are formed on the basis of adaptive expectations model where future values of a variable are related to the history of its past values. Therefore, the AEH is a backward looking hypothesis. The current expected rate of inflation according to the AEH is the weighted average of past rates of inflation where weights decline geometrically as one goes back to the past periods. The reduced form equation to derive inflation expectations is $\pi_t^* = \lambda\pi_{t-1} + (1-\lambda)\pi_{t-1}^*$ where, the expected rate of inflation at time *'t'* is a weighted average of the actual inflation and the expected inflation at time '*t-1'*, where the adjustment parameters λ and $(1-\lambda)$ serve as weights.

According to Frisch (1983), the weight 'λ' is fixed on the basis of memory of the economic agents. There are two types of economic agents: short memory economic agents and long memory economic agents. The short memory economic agents are those who base recent past information in forming expectations. In this case 'λ' is fixed closer to unity. It implies that economic agents have only the last period information but not the periods before that and hence the expected rate of inflation at time 't' becomes the last period's actual inflation. The long memory economic agents use all possible information throughout the periods besides the recent past information. In such a case, 'λ' is fixed closer to zero. In practice, however, it is difficult to find short memory economic agents who base their expectations utilizing only last period's information in forming

expectations. Therefore, in order to incorporate all the available information throughout the past, an application of distributed lag model is used to find the appropriate 'λ' value serving as weight. The weight pattern for the different values of 'λ' yields the learning behavior of economic agents in the formation of expectations.[3]

Rational Expectations Hypothesis (REH) presumes that expectations formation of a variable is determined on the basis of economic theory that determines the variable (Sargent and Wallace 1973). According to Muth (1961) changes in the structure of the economic system affect future expectations of variables. The advantage of rational expectations in expectations formation over other methods is that it eliminates the systematic forecast errors. However, it does not mean that it eliminates all the errors. In REH, conditional expectation forecasting matters[4]. In conditional forecasting, economic agents make probability assessments based on all available information at the time of forecast. Mathematically, it is represented as $\pi_t = E[\pi_t / I_{t-1}] + \varepsilon_t$ where forecast of π_t is equal to the conditional expected value of π_t utilizing all available information at the time of forecast, i.e. 'I_{t-1}'. The error term 'ε_t' in conditional expectation model, which is equal to $\pi_t - E[\pi_t / I_{t-1}]$, should have zero expected value and uncorrelated with any information available to economic agents. In other words, the mean and variance of ε_t in the equation $\varepsilon_t = \pi_t - E[\pi_t / I_{t-1}]$ are zero and constant respectively.

The empirical analysis of the models incorporating expectation variables dominated the literature in the 1950s. A number of studies attempted to search for the behavior and derivation of expected variables and its application in the model. The adaptive expectations model was used to derive inflation expectations by Cagan (1956) in an analysis of hyperinflation for Hungary. Using monthly data from 1921 to 1924, Cagan found that the demand for real cash balances is inversely related to the expected rate of inflation. Similarly, Nerlove (1958), using monthly data ranging from 1921 to 1924 for Germany, also found an inverse relationship between demand for real cash balances and inflation expectations. He used the partial adjustment model in the analysis. In Nepal, Khatiwada (1994) empirically analyzed the relationship between inflation and inflation expectation as an additional variable in a multivariate inflation equation over the sample period 1965-90 for Nepal. Taking one period lagged rate of inflation as a proxy for

[3] Weight when λ equals

Past Period	Weight Smoothing	Short Memory λ=0.9	Long Memory (λ=0.1)
t-1	λ	0.9	0.1
t-2	$\lambda(1-\lambda)$	0.09	0.09
t-3	$\lambda(1-\lambda)^2$	0.009	0.081
t-4	$\lambda(1-\lambda)^3$	0.0009	0.0729
t-n	$\lambda(1-\lambda)^{n-1}$	Etc.	etc.

[4] In such a forecasting method, expected current and future value of dependent variable is based not only on the past value of the independent variable but also on the forecasted value of independent variable itself by the auxiliary model. The information from auxiliary model is included in the main forecasting model and then the forecast is performed.

inflation expectation, he found an insignificant relationship between inflation and inflation expectation because of the prevalence of unstable and unpredictable rate of inflation. In such a situation, people may accord importance to other factors for expectation formation than depend solely on the rates of past inflation.

III. APPROACH, OBJECTIVE AND METHODOLOGY

The basic approach of this paper is to find the validity of inflation expectation variable derived under AEH rather than the prevailing practice of utilizing one period lagged inflation as a proxy of inflation expectations in Nepal. The latter concept relies on the instantaneous adjustment between actual and expected inflation where the speed of adjustment between actual and desired (expected) inflation is assumed to be equal to unity. It ignores geometrically declining weights of past observations in order to derive inflation expectations which demands further research for the validity. Keeping this in view, the objectives of this paper is to derive the inflation expectations series of inflation for Nepal and to assess the relationship between inflation and inflation expectations.

This paper uses annual data of national urban Consumer Price Index (CPI) from 1973 to 2006 for the analysis. The first difference of the logarithm of CPI gives inflation rates. In the course of deriving the expected inflation, the AEH is taken into consideration. Expected inflation is not an observable variable and, thus, there is a need to determine its values through an appropriate procedure. According to AEH, observations of expected inflation are related to observations of the past. The model of adaptive expectations to generate inflation expectations is represented as: $\pi_t^* - \pi_{t-1}^* = \lambda(\pi_{t-1} - \pi_{t-1}^*)$ and its simplified form for the estimation purpose is as: $\pi_t^* = \lambda\pi_{t-1} + (1-\lambda)\pi_{t-1}^*$.[5] This equation states that the expected inflation (π_t^*) at time *'t'* is the function of current inflation 'π_{t-1}' and one period lagged forecast of inflation 'π_{t-1}^*' where adjustment parameters 'λ' and '$(1-\lambda)$' serve as relative weights given to each term. The first forecast value of the expected inflation series is proxied by the actual inflation.

The minimization of the sum of Residual Standard Error $(RSE) = \sqrt{\sum_{t=1}^{n} e_t^2 /(n-1)}$, is the criteria for the optimal selection of 'λ' where e_t is residual error obtained by subtracting inflation expectations from actual inflation. A trial and error search process is followed by fixing the value of 'λ' ranging from zero to unity in order to find the optimum desired value. In other words 'λ' that yields the most accurate forecast is the one that achieves the lowest RSE.

After generating the inflation expectation series, a linear relationship is examined between inflation and inflation expectation using bi-variate regression model. Since the

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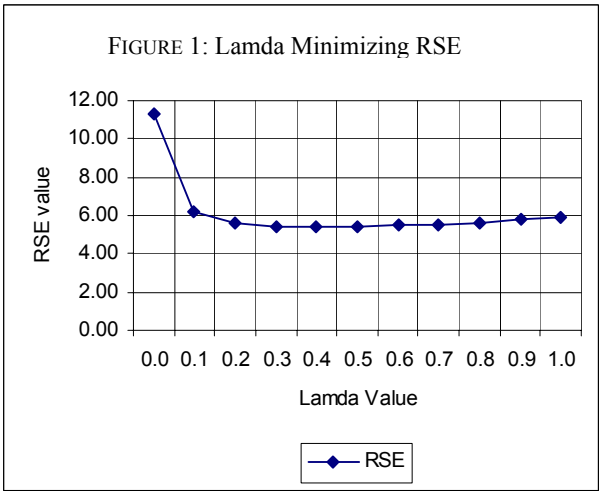
[5] $\pi_t^* = \lambda\pi_{t-1} - (1-\lambda)\pi_{t-1}^*$; $0<\lambda<1$ can be derived by taking lags and continuous substitution yields $\pi_t^* = \pi_{t-1} + (\lambda-1)\pi_{t-2} + \lambda(\lambda-1)^2\pi_{t-3} + ... + \lambda(\lambda-1)^{n-1}\pi_{t-n} + (\lambda-1)^n\pi^*_{t-n}$. It simply states that the forecast in period 't' is equal to a weighted average of all past actual values and one initial forecast.

variables used in this paper are in percentage change, that is, first difference of log of CPI, coefficients are interpreted as elasticity coefficients. The forecastability of a model is examined by Root Mean Squared Error (RMSE) of in-sample period forecast as well as ex-post forecast. The formula for the calculation of RMSE is as: $\sqrt{\sum_{t=1}^{n} e_t^2 / n}$. The model is selected that minimizes the RMSE.

IV. Results of the Analysis

In estimating inflation expectation series for Nepal for analyzing inflation and inflation expectation, the study utilizes the AEH. As derived in Annex 1 along with the exercise presented in Annex 2, the value of weight 'λ' that minimize RSE is 0.40 using model as $\pi_t^* = \lambda\pi_{t-1} + (1-\lambda)\pi_{t-1}^*$. The weight, that is, '$\lambda$' can be considered as memory of economic agents. If 'λ' is close to zero, then the weights decline slowly and the economic agents have a long memory. The reverse is true when 'λ' is close to unity. The weight 0.40 gives an inference that economic agents have neither too long nor too short memory in terms of inflation expectations in Nepal. The relationship between selected values of 'λ' and RSE is shown in Figure 1. Since the value of 'λ' equal to 0.40, the economic agent (or society at large) adjust inflation expectations with some time lags.

FIGURE 1: Lamda Minimizing RSE



If the actual inflation and expected inflation are plotted in a time scale diagram, a smooth series of expected inflation is generated, which is considered as long-run trend of inflation, as shown in Figure 2. The expectation gap is presented in Figure 3 depicting a convergence pattern of errors.

FIGURE 2: Actual and Expected Rate of Inflation

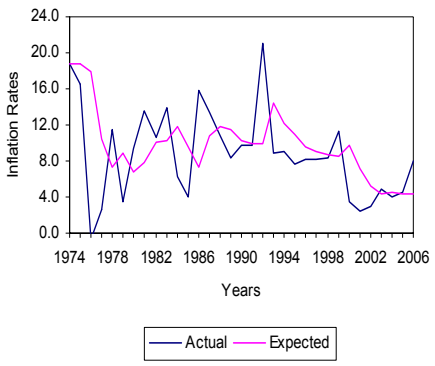
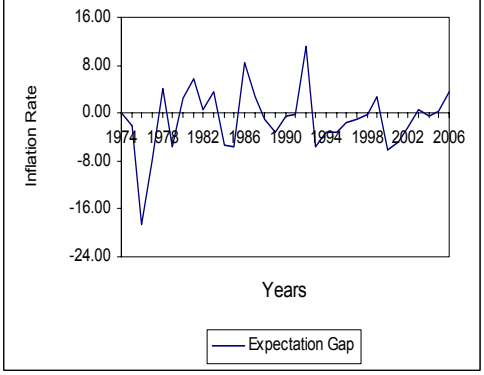


FIGURE 3: Expectation Gap



After the selection of inflation expectations series on the basis of minimum RSE, the series is used for estimation. This study hypothesizes that there is a positive relationship between actual inflation and expected inflation, that is, changes in inflation expectations leads to a changes in actual inflation. Mathematically, $\pi_t = \alpha + \beta\pi_t^*$; β>0, where β is elasticity of inflation with respect to inflation expectations 'π_t^*'. The effect of inflation expectations and one-period lagged inflation on current inflation is presented in Table 1.

TABLE 1: The Effect π_t^* and π_{t-1} on π_t (1973 to 2006)

Equation no.	π_t^*	π_{t-1}	DW	In-sample RMSE	Ex-post RMSE
1.	0.837 (9.81)*	-	1.82	5.22	2.50
2.		0.784 (8.05)*	2.36	8.93	3.40

Note: Figures in the parenthesis are 't' values.
* significant at 1 percent level.
** significant at 5 percent level
*** significant at 10 percent level.

The coefficient of expected rate of inflation possesses a priori sign, that is, there is positive relationship between inflation and inflation expectations. The coefficient 0.83 is interpreted as follows: one percent increase in expected inflation will have an effect of 0.83 percent increase in current inflation. The coefficient is statistically significant at 1 percent level. The R^2 value is not presented here because it is negative and insignificant as the application of the variables used in the model are in percentage change form. DW statistic is statistically significant at 5 percent level. Similarly, as shown in equation 2, one percent increase in one-period lag inflation will have an effect of 0.83 percent increase in contemporaneous inflation. If a comparison is made between the effect of

expected rate of inflation derived under AEH and expectation under one-period lagged inflation, the former explains the variation of current inflation in a better way.

The in-sample RMSE and ex-post forecast are examined to assess the predictability of the models in Table 1. Using the last three observations to assess the ex-post forecast of the model, the inflation expectation derived under AEH has better forecastability than that of inflation expectation derived under one-period lagged inflation. The ex-post RMSE in case of he former is less than that of the latter implying that the expected inflation derived under AEH has higher forecasting ability than the expected inflation derived under one-period lagged inflation.

V. CONCLUSION

This paper found that there is a significant positive relationship between inflation and inflation expectations in Nepal. Using 33 annual observations of expected inflation from 1973 to 2006, it is found that one percent increase in inflation expectations will have 0.83 percent increase in contemporaneous inflation. Since the inflation expectations derived under the AEH is the better explanatory variable of current inflation as compared to inflation expectations under one-period lagged inflation, the weight used to derive inflation expectations under AEH minimizing RSE is found to be 0.40. This weight gives an inference that the economic agents have neither too long nor too short memory in inflation expectations. The forecastability of inflation expectations on contemporaneous inflation, as inflation expectation calculated on the basis of AEH, is higher than that of the inflation expectations proxied by one-period lagged inflation, where forecastability of the model has been examined on the basis of minimum RMSE. Therefore, it is desirable for the policymakers to consider the impact of inflation expectations while formulating monetary policy to anchor inflationary expectations of the economic agents.

ANNEX 1 : Derivation of Inflation Expectations Series on the Basis of Different λ Values (Weight)

Years	CPI	Log of CPI	Δ log of CPI	Long Memory Economic Agents						Short Memory Economic Agents				
				λ = 0	λ = .1	λ = .2	λ = .3	λ = .4	λ = .5	λ = .6	λ = .7	λ = .8	λ = .9	λ = 1
1973	11.20	2.4159	-											
1974	13.30	2.5878	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500
1975	15.50	2.7408	16.5414	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500
1976	15.40	2.7344	-0.6452	18.7500	18.5291	18.5291	18.0874	17.8665	17.6457	17.4248	17.2039	16.9831	16.7622	16.5414
1977	15.80	2.7600	2.5974	18.7500	16.6117	16.6117	12.4676	10.4619	8.5003	6.5828	4.7096	2.8805	1.0956	-0.6452
1978	17.60	2.8679	11.3924	18.7500	15.2103	15.2103	9.5066	7.3161	5.5488	4.1916	3.2311	2.6540	2.4472	2.5974
1979	18.20	2.9014	3.4091	18.7500	14.8285	14.8285	10.0723	8.9466	8.4706	8.5121	8.9440	9.6447	10.4979	11.3924
1980	19.90	2.9907	9.3407	18.7500	13.6865	13.6865	8.0733	6.7316	5.9399	5.4503	5.0696	4.6562	4.1180	3.4091
1981	22.60	3.1179	13.5678	18.7500	13.2520	13.2520	8.4535	7.7752	7.6403	7.7845	8.0593	8.4038	8.8184	9.3407
1982	25.00	3.2189	10.6195	18.7500	13.2835	13.2835	9.9878	10.0923	10.6040	11.2545	11.9153	12.5350	13.0929	13.5678
1983	28.50	3.3499	14.0000	18.7500	13.0171	13.0171	10.1773	10.3031	10.6118	10.8735	11.0082	11.0026	10.8668	10.6195
1984	30.30	3.4111	6.3158	18.7500	13.1154	13.1154	11.3241	11.7819	12.3059	12.7494	13.1025	13.4005	13.6867	14.0000
1985	31.50	3.4500	3.9604	18.7500	12.4355	12.4355	9.8216	9.5954	9.3108	8.8892	8.3518	7.7327	7.0529	6.3158
1986	36.50	3.5973	15.8730	18.7500	11.5880	11.5880	8.0633	7.3414	6.6356	5.9319	5.2778	4.7149	4.2696	3.9604
1987	41.40	3.7233	13.4247	18.7500	12.0165	12.0165	10.4062	10.7541	11.2543	11.8966	12.6945	13.6414	14.7127	15.8730
1988	45.90	3.8265	10.8696	18.7500	12.1573	12.1573	11.3117	11.8223	12.3395	12.8134	13.2056	13.4680	13.5535	13.4247
1989	49.70	3.9060	8.2789	18.7500	12.0285	12.0285	11.1791	11.4412	11.6045	11.6471	11.5704	11.3893	11.1380	10.8696
1990	54.50	3.9982	9.6579	18.7500	11.6535	11.6535	10.3090	10.1763	9.9417	9.6262	9.2663	8.9009	8.5648	8.2789
1991	59.80	4.0910	9.7248	18.7500	11.4540	11.4540	10.1137	9.9689	9.7998	9.6452	9.5405	9.5065	9.5486	9.6579
1992	72.40	4.2822	21.0702	18.7500	11.2811	11.2811	9.9970	9.8713	9.7623	9.6930	9.6695	9.6811	9.7072	9.7248
1993	78.80	4.3669	8.8398	18.7500	12.2600	12.2600	13.3190	14.3509	15.4163	16.5193	17.6500	18.7924	19.9339	21.0702
1994	85.90	4.4532	9.0102	18.7500	11.9180	11.9180	11.9752	12.1464	12.1280	11.9116	11.4828	10.8303	9.9492	8.8398
1995	92.50	4.5272	7.6834	18.7500	11.6272	11.6272	11.0857	10.8919	10.5691	10.1707	9.7520	9.3742	9.1041	9.0102
1996	100.00	4.6052	8.1081	18.7500	11.2328	11.2328	10.0650	9.6085	9.1262	8.6783	8.3039	8.0215	7.8254	7.6834
1997	108.10	4.6831	8.1000	18.7500	10.9203	10.9203	9.4779	9.0083	8.6172	8.3362	8.1669	8.0908	8.0798	8.1081
1998	117.10	4.7630	8.3256	18.7500	10.6383	10.6383	9.0646	8.6450	8.3586	8.1945	8.1201	8.0982	8.0980	8.1000
1999	130.40	4.8706	11.3578	18.7500	10.4070	10.4070	8.8429	8.5173	8.3421	8.2732	8.2640	8.2801	8.3029	8.3256
2000	134.90	4.9045	3.4509	18.7500	10.5021	10.5021	9.5974	9.6535	9.8500	10.1240	10.4297	10.7423	11.0523	11.3578
2001	138.10	4.9280	2.3721	18.7500	9.7970	9.7970	7.7534	7.1725	6.6504	6.1201	5.5445	4.9092	4.2111	3.4509
2002	142.10	4.9565	2.8965	18.7500	9.0545	9.0545	6.1390	5.2523	4.5113	3.8713	3.3239	2.8795	2.5560	2.3721
2003	148.90	5.0033	4.7854	18.7500	8.4387	8.4387	5.1663	4.3100	3.7039	3.2864	3.0247	2.8931	2.8624	2.8965
2004	154.80	5.0421	3.9624	18.7500	8.0734	8.0734	5.0520	4.5001	4.2446	4.1858	4.2572	4.4069	4.5931	4.7854
2005	161.80	5.0864	4.5220	18.7500	7.6623	7.6623	4.7251	4.2850	4.1035	4.0517	4.0508	4.0513	4.0255	3.9624
2006	174.70	5.1631	7.9728	18.7500	7.3482	7.3482	4.6642	4.3798	4.3127	4.3339	4.3806	4.4278	4.4723	4.5220

ANNEX 2 : Derivation of Residual Squared Error (RSE) on the Basis of Different λ Values (Weight)

Years	Δ CPI	λ = 0	λ = .1	λ = .2	λ = .3	λ = .4	λ = .5	λ = .6	λ = .7	λ = .8	λ = .9	λ = 1
1974	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500	18.7500
1975	16.5414	4.8781	4.8781	4.8781	4.8781	4.8781	4.8781	4.8781	4.8781	4.8781	4.8781	4.8781
1976	-0.6452	376.1723	367.6537	359.2326	350.9091	342.6831	334.5548	326.5239	318.5907	310.7550	303.0169	295.3763
1977	2.5974	260.9064	196.4007	142.0907	97.4215	61.8497	34.8437	15.8836	4.4613	0.0801	2.2555	10.5142
1978	11.3924	54.1342	14.5761	0.5493	3.5564	16.6164	34.1474	51.8520	66.6077	76.3594	80.0163	77.3521
1979	3.4091	235.3435	130.4026	73.5517	44.3986	30.6641	25.6191	26.0404	30.6352	38.8832	50.2510	63.7333
1980	9.3407	88.5357	18.8868	0.8638	1.6061	6.8072	11.5655	15.1350	18.2423	21.9440	27.2765	35.1835
1981	13.5678	26.8548	0.0998	12.1358	26.1560	33.5544	35.1362	33.4469	30.3437	26.6676	22.5573	17.8690
1982	10.6195	66.1055	7.0973	0.0261	0.3990	0.2779	0.0002	0.4033	1.6791	3.6694	6.1178	8.6929
1983	14.0000	22.5625	0.9660	10.5714	14.6129	13.6667	11.4802	9.7751	8.9508	8.9845	9.8169	11.4280
1984	6.3158	154.6096	46.2351	25.8381	25.0834	29.8783	35.8812	41.3913	46.0590	50.1934	54.3300	59.0471
1985	3.9604	218.7324	71.8267	41.2406	34.3540	31.7538	28.6272	24.2934	19.2844	14.2305	9.5634	5.5479
1986	15.8730	8.2770	18.3617	45.9021	60.9923	72.7880	85.3296	98.8252	112.2583	124.5044	134.6382	141.9105
1987	13.4247	28.3593	1.9830	8.8312	9.1112	7.1321	4.7104	2.3350	0.5332	0.0470	1.6590	5.9945
1988	10.8696	62.1013	1.6582	0.0316	0.1955	0.9077	2.1607	3.7786	5.4570	6.7519	7.2033	6.5285
1989	8.2789	109.6446	14.0598	7.4685	8.4112	10.0004	11.0600	11.3451	10.8340	9.6745	8.1744	6.7117
1990	9.6579	82.6654	3.9824	0.6516	0.4239	0.2687	0.0805	0.0010	0.1534	0.5731	1.1950	1.9019
1991	9.7248	81.4548	2.9902	0.3352	0.1513	0.0596	0.0056	0.0063	0.0340	0.0476	0.0310	0.0045
1992	21.0702	5.3835	95.8279	118.4246	122.6161	125.4167	127.8695	129.4425	129.9773	129.7118	129.1195	128.7195
1993	8.8398	98.2125	11.6978	12.4229	20.0633	30.3720	43.2502	58.9754	77.6201	99.0549	123.0801	149.5840
1994	9.0102	94.8646	8.4554	7.0189	8.7916	9.8362	9.7211	8.4184	6.1142	3.3130	0.8818	0.0290
1995	7.6834	122.4707	15.5538	11.8766	11.5760	10.2949	8.3275	6.1870	4.2791	2.8589	2.0184	1.7604
1996	8.1081	113.2499	9.7637	5.4394	3.8294	2.2511	1.0366	0.3251	0.0383	0.0075	0.0799	0.1804
1997	8.1000	113.4225	7.9543	3.5115	1.8987	0.8251	0.2675	0.0558	0.0045	0.0001	0.0004	0.0001
1998	8.3256	108.6676	5.3484	1.6218	0.5460	0.1020	0.0011	0.0172	0.0423	0.0517	0.0518	0.0509
1999	11.3578	54.6444	0.9040	4.0537	6.3249	8.0688	9.0945	9.5151	9.5720	9.4721	9.3327	9.1942
2000	3.4509	234.0618	49.7192	39.6419	37.7787	38.4717	40.9477	44.5294	48.7028	53.1639	57.7813	62.5190
2001	2.3721	268.2347	55.1286	37.4023	28.9584	23.0431	18.3040	14.0476	10.0642	6.4367	3.3817	1.1638
2002	2.8965	251.3350	37.9216	19.0817	10.5143	5.5501	2.6077	0.9504	0.1827	0.0003	0.1159	0.2749
2003	4.7854	195.0111	13.3469	2.5783	0.1451	0.2260	1.1696	2.2469	3.1000	3.5808	3.6978	3.5680
2004	3.9624	218.6734	16.9001	4.4417	1.1872	0.2892	0.0797	0.0499	0.0869	0.1976	0.3978	0.6773
2005	4.5220	202.4370	9.8615	1.2689	0.0413	0.0561	0.1751	0.2211	0.2220	0.2215	0.2465	0.3131
2006	7.9728	116.1479	0.3901	6.5009	10.9471	12.9096	13.3961	13.2418	12.9038	12.5669	12.2534	11.9083
$\sum_{t=1}^{n} e_t^2 =$		4078.1540	1240.8313	1009.4834	947.8785	931.4990	936.3279	954.1377	981.9121	1018.8812	1065.4197	1122.6168
$RSE = \sqrt{\sum_{t=1}^{n} e_t^2/(n-1)} =$		11.2890	6.2270	5.6166	5.4425	5.3953	5.4093	5.4605	5.5394	5.6427	5.7701	5.9230

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Unanticipated Political Events and Stock Returns: An Event Study

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The study focuses on market reaction to announcements of new unanticipated political events using the event analysis methodology. The findings of the study provide a consistent conclusion regarding the existence of information content hypothesis in the Nepalese stock market. The study reveals that good-news (bad-news) political announcements generate positive (negative) abnormal returns in the post-event period. The data present important evidence on the speed of adjustment of stock prices to new political information, i.e., in as many as 2 to 3 days from the announcement date. Thus, this paper finds that the Nepalese stock market is inefficient at a semi-strong level, but there is a strong linkage between political uncertainty and common stock returns.

I. INTRODUCTION

If the stock prices reflect the announcement of public information instantaneously and without bias, the market should be classified as semi-strong form of efficiency (Fama, 1970). The semi-strong form of market holds that the stock prices reflect all publicly available information. Thus, any significant new public information should be reflected immediately in the stock price. Furthermore, no time lag should exist between the information being available and the stock price adjustment.

In connection with the semi-strong form of market efficiency, if security prices reflect all currently available information, then price changes must reflect new information. Therefore, it seems that one should be able to measure the importance of an event of interest by examining price changes during which the event has occurred.

Beaulieu et al. (2006) dealt with the political risk and its impact on share price. Political risk is a global phenomenon that affects most national stock markets in the twentieth century. The study found that the uncertainty surrounding the referendum outcome had short run impact on stock returns of Quebec firm positively. Beaulieu et al. (2006) showed that the stock market was directly influenced by the political risk and uncertainty. It implies that event-announcement may create abnormal returns to shareholders.

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If the security prices reflect not only on the information that contains the past time series of stock prices but also on all publicly available information, then the market is said to be in a semi-strong form of efficiency. Generally, in the semi-strong form of market efficiency, announcement of new information immediately influences the investors' psychology. Thus, the stock market immediately reacts to the announcement of any new event including mergers and acquisitions, announcement of dividend and earning, issuance of new equity and debt, stock split, overseas listings, corporate name change, business expansion and macro-economic changes.

There are various factors that affect stock market price behaviour; they bring out over or under-reaction in the market. The study of events and stock price behaviour occupies an important place in financial management. The proposed study is focused on the short-run effect on stock price caused by the announcement of unanticipated important political events. This study mainly deals with unexpected political events, which create political risks and uncertainties in economic activities in the country. The Royal massacre, dissolution of the parliament, activities and announcements of Maoists and changes in governments are the major political events. The Royal massacre in 2001 has created greater political uncertainties. Dissolution of the parliament and changes in the government always threatens investors towards the economic policies and future uncertainties. The Maoist activities and their announcements influence investors' confidence both positively and negatively towards their investment risk. Similarly, investors perceive the political announcement in different ways, viz., as good news and bad news.

The next section reviews the literature on the subject. The objectives and methodology of the study are discussed in the third section. The fourth section presents the empirical results and the last section provides the conclusions.

II. LITERATURE REVIEW

The primary hypothesis for Efficient Market Hypothesis is that the prices accurately and quickly reflect all available information in such a way that one can earn abnormal returns. The time for the adjustment for any new information is considered as a critical factor. As per Hadi (2006), if the market adjusts more rapidly and accurately immediately after new information, it is considered as a more efficient market. There may be various reasons for the market for not being able to adjust quickly and correctly. Hadi (2006) explained further the alternative hypothesis, in which the security market is inefficient and the result of stock price is not accurately reflecting the new information. This might result from the following: (1) the investor is unable to interpret the new information correctly, (2) the investors have no access to the new information; (3) the transaction cost in trading security is an obstruction for free trading; (4) the restriction on short sale; and finally, (5) the investors might be misled by the change in accounting principles.

As per Fama (1970), the market efficiency can be classified into three levels on the basis of the information: (1) weak form efficiency where stock price fully reflects historical information of past prices and returns; (2) semi-strong form efficiency where stock prices fully reflect all information known to all market participants, i.e., public information; and (3) strong form efficiency where stock prices fully reflect all information including public and private information, known to any market participant.

After twenty years of market efficiency literature published in 1970, Fama (1991) proposed to change the categories of market efficiency, namely:

(1) Using *tests for return predictability* instead of weak-form tests, which are only concerned with forecast power of past returns, *i.e.,* how well do past returns predict future returns?
(2) Using *event studies* instead of semi-strong-form tests of the adjustment of prices to public announcements, *i.e.,* how quickly do prices reflect public information announcements? and
(3) Using *test for private information* instead of strong-form tests of whether specific investors have information in market prices or not, *i.e*., do any investors have private information that is not fully reflected in market prices?

The weak form efficiency occurs when the stock prices reflect information about the past share prices only. It means investors depend solely on past series of stock prices in selecting their portfolio. On the contrary, the strong form of market efficiency occurs if the stock price reflects all public and private information. This form is the most comprehensive case and private information is difficult to observe.

In between the weak and strong form of market efficiency, there is semi-strong form efficiency. The market is efficient in a semi-strong form if the security prices reflect not only the information that contains the past time series of stock prices but also all publicly available information. This means that the stock price is adjusted rapidly and in an unbiased way to all-important public announcements in newspapers, annual reports, corporate forecasting and related notices.

Out of the three categories of market efficiency test, the current study seeks to focus exclusively on the semi-strong form of market efficiency because this form deals with how quickly the prices reflect the public information announcement and it specifically evaluates the event effect on the market returns.

A government usually attempts to steer its economy. News about future economic policies can be derived from political events such as elections, the formation of new government, changes in the composition of government, etc. Changes in the outcome of elections and therefore in the composition of the government will most likely result in policy changes. This should affect economic variables such as unemployment, economic growth, and inflation. The macro-economic results are not entirely the consequence of the economy itself but are also dependent on the long and short-term policy choices of the government. Therefore, political party differences in economic policy have the potential to move the economy along different time paths, which should manifest in different returns to stockholders (Li and Born, 2006). This suggests a link between common stock returns and political outcomes.

Elections by definition always open a period of political uncertainty, as the winner remains to be determined. In this regard, the impact of political events on the stock market stresses uncertainty over the policies that the next government will pursue. Since stock prices anticipate and capitalize policy changes, the analysis of the effects of the political events on stock market could indicate the economic importance of expected changes in economic policy.

Vuchelen (2003) investigated whether Belgian elections and the ideological composition of the government may affect the performance of the Brussels stock market.

By using the multiple regressions model, the author reported that elections and new governments are events that supply information on future economic and financial policies. The results indicate that the ideological composition of the government is an important variable of stock market. The study suggests that the election and ideological composition of the government partners affect the common stock returns.

Martinez and Santiso (2003) provide the additional evidence on the political event. This article focuses on the interactions between politics and financial markets in emerging economies. More precisely, it examines how Wall Street reacts to major Latin American political events. The case study focuses on the 2002 Brazilian presidential elections. The specific case study of Brazil, analysed through the perceptions of Wall Street analysts and from a historical and quantitative economic perspective, has shown that these ties are strong for emerging markets. In fact, the essential character of emerging markets lies precisely in this intricate link between political uncertainty and financial volatility – what could be called the 'economic fog' of democratic uncertainty.

Li and Born (2006) has made an attempt to analyse the relationship between the presidential election uncertainty and common stock returns in the United States, showing the stock returns on the pre- and post-election. They report that the mean daily common stock return rises in the roughly three-month period before a US presidential election when the outcome of the election is uncertain. Similarly, the study provides weak evidence that the presidential election cycle is associated with higher return variability when outcome is uncertain. However, volatility is virtually identical to non-election periods when the outcome is not in doubt. This evidence is consistent with the hypothesis that investors see a causal link between political uncertainty and common stock returns generation. It indicates that political uncertainty is observed by and priced in the equity market. This link between politics and stock market is found in an unbiased framework consistent with the market efficiency hypothesis.

Beaulieu et al. (2006) examined the short run effect of the 30 October 1995 Quebec referendum on the common stock returns of 102 firms in Quebec in Canada. The study used GARCH model to measure the stock price volatility. The study found that the referendum outcome did affect portfolio returns of firms in Quebec. The effect of the referendum results on these stock returns is positive and statistically significant. The reaction of stock market is larger for domestic firms than multi-national firms. The study revealed that political uncertainty could affect short-run stock returns of Quebec and Canadian firms when the uncertainty cannot be anticipated by financial market. In another study, Kramer and Hyclak (2002) examined the impact of strikes on capital market from 1982 to 1999 with 256 firms' strikes (pair sample struck firms and non-struck firms). The study revealed the statistically significant negative effects of the announcement of a strike on the cumulative average stock market returns of struck firms. Concurrently, in the case of non-struck firms, the announcement of a strike had significant positive effects on the cumulative abnormal returns (CAR) in the same industry. Stock market does not predict strikes very well.

The effect of taxation on stock prices was investigated by Amoako-Adu (1983) and McKenzie and Thompson (1995a, 1995b). Amoako-Adu (1983) employed the event study approach to assess the impact of capital gain taxes in Canada. The paper used monthly data to examine the impact of the introduction of capital gains taxes in 1971, as well as subsequent changes in 1977 on stock prices. The study finds that changes in the

relative taxation of dividends and capital gains had a differential impact on high and low dividend yield portfolios listed on the Toronto Stock Exchange (TSE) in Canada. There were significant increases in the value of high-dividend stocks, while the effect of tax changes on the low-dividend stocks was trivial. The results show that investors took the personal tax changes into consideration in pricing stocks.

McKenzie and Thompson (1995a) analysed the impact of the Canadian dividend tax increase in 1986. They employed an event study to investigate the differential impact of tax (i.e. dividend and capital gain tax) change on high and low dividend securities. They focused on the companies that issue both preferred (high-dividend) stocks and common (low-dividend) stocks. The study finds that abnormal returns are negatively related to dividend yields, which provides support for the hypothesis that taxes affect stock prices. Similarly, McKenzie and Thompson (1995b), using event study methodology, tested the hypothesis that the 1985 capital gains exemption decreased the marginal effective tax rate on capital gains using two samples of stock market prices which controlled the industry and firm-level effects. They derived estimates of the impact of the exemption on the effective capital gains tax-rate, and on the user cost of capital. The results show that the capital gains exemption may have had a positive impact on high capital gain-stocks relative to low capital gain-stocks. Using existing estimates of the relationship between the user cost of capital and investment, the study found that, depending upon the sample, the exemption may have increased real investment as much as six per cent, or had no impact at all. It is, therefore, difficult to draw strong conclusions about the effect of the capital gain exemption on the cost of capital and investment. However, the results of studies [Amoako-Adu (1983) and McKenzie and Thompson (1995a, 1995b)] are consistent with the proposition that asset prices are established to reflect the prevailing tax treatment of stock returns.

Bittlingmayer (1998) investigated stock volatility and output in a case marked by a clear exogenous political shock in Germany. The study was focused on the connection between political events and stock prices during and after the First World War. The study employed multiple regressions to analyse data. The study found that the increase in German volatility in the late 1800s and early and mid-1920s seems closely linked to the shift from an ascendant empire to a beleaguered republic. Thus, political uncertainties simultaneously affected stock prices and output. In other words, it concluded that there was influence of political outcomes on the business cycle and stock market. To sum up, when uncertainty is taken into account, stock prices discount investor's expectations concerning possible future corporate developments. In efficient markets, investors predict market in a rational way by making use of all available information, and prices react instantaneously to news.

In the context of Nepal, there is the need to study whether the announcements of political events generate immediate market reactions or not. This is so, as the Nepalese stock market also seems volatile with announcement of any important public information. Moreover, the Nepalese stock market still lacks empirical evidences on this issue. In this perspective, the current study examines the Nepalese stock market reaction to announcements of the unanticipated political events.

III. OBJECTIVES AND METHODOLOGY

The current study seeks to test market reaction to new unanticipated political event announcement, i.e., to test semi-strong form of stock market efficiency. The study aims at examining the market reaction that would follow immediately to the announcement of new unanticipated, significant political announcement in the context of Nepalese stock market.

Data and Selection of Enterprises

This study is based on secondary data. The secondary data, which include daily share price and NEPSE index, are collected from the trading reports of the Nepal Stock Exchange Limited. Similarly, political announcement dates are collected from daily newspapers.

This study primarily focuses on the unanticipated political events announcement. As per the NEPSE trading reports, more than 85 per cent of the transactions were the securities of the commercial banks and financial institutions. It means that shares of commercial banks and financial institutions have ruled the roost of the investors' faith as well as the market itself. All the commercial banks listed with the Nepal Stock Exchange Limited have been considered as the total population of the study. The sample commercial banks of the study should fulfil the following criteria:

- The bank should be the one listed at the Nepal Stock Exchange Ltd.
- The bank should not be the one that has remained de-listed for a long period of time.
- The bank should be the one that has already paid dividends (cash or stock or both) at least one time in its life.
- The securities of the bank should be the one traded at least 50 per cent of the floor-days during the estimated period. This will avoid the securities traded very infrequently.

On the basis of the above criteria, eleven commercial banks are selected to examine the impact of the political announcements on stock returns. They include (1) Nabil Bank Limited (formerly, Nepal Arab Bank Ltd.), (2) Nepal Investment Bank Limited (formerly, Nepal Indosuez Bank Ltd.), (3) Standard Chartered Bank Nepal Limited, (4) Himalayan Bank Limited, (5) Nepal SBI Bank Limited, (6) Nepal Bangladesh Bank Limited, (7) Everest Bank Limited, (8) Bank of Kathmandu Limited; (9) Nepal Industrial and Commercial Bank Limited, (10) Machhapuchhre Bank Limited and (11) Kumari Bank Limited.

Selection of Events

Table 1 lists the political events selected for the study. These political events are the major significant political announcements leading up to the stock market certainty as well as uncertainty from 2001 to 2006 for the study.

TABLE 1: Selected Political Announcements in Nepal from June 2001 to November 2006

Events	*Date*	*Description of Event*
1	June 1, 2001	The Royal massacre.
2	July 16, 2001	Capital gain tax imposed on share trading through the government's budget speech 2001/02.
3	Jan 29, 2003	Cease fire by the government and Maoists.
4	Feb 1, 2005	King Gyanendra dismissed Prime Minister Sher Bahadur Deuba and took up executive power.
5	Oct 4, 2005	Cease fire by the Maoists.
6	Jan 2, 2006	Cease fire withdrawn by the Maoists
7	July 23, 2006	Announcement of monetary policy for 2006/07: revision of the previous required paid-up capital of the bank to Rs. 800 million from Rs. 1,000 million by mid-July 2009.
8	Nov 16, 2006	Peace agreement between the government and Maoists; Maoists agreed to lay down arms.

Likewise, these political announcements are divided into two categories: (1) good news and (2) bad news.

Method of Analysis

The impact of announcements of new political information on common stock prices is computed using event study methods. The regression analysis (Ordinary Least Squares) is the basic technique employed for fitting models of normal stock return behaviour as a function of general market performance. The market model is based on the capital assets pricing model (CAPM), the most widely used method to estimate the returns on a firm's stock [Bosch and Hirchey (1989), MacKinlay (1997), Hovav and Arcy (2003)]:

$$R_{it} = \alpha_i + \beta_i R_{mt} + e_{it} \quad (1)$$

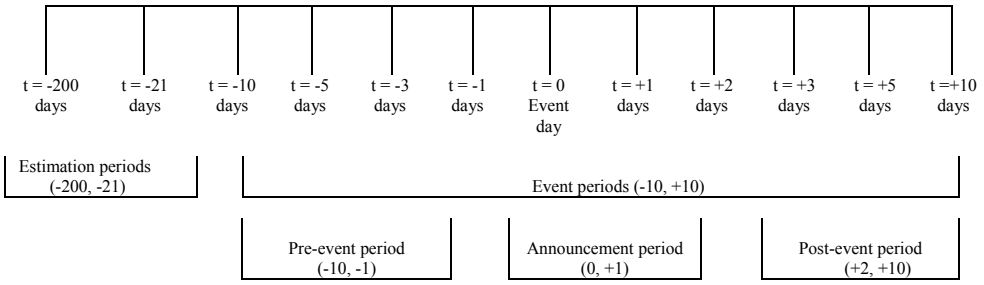
where R_{it} = the return of stock *i* on day *t* = $[Price_{it} - Price_{it-1}]/ Price_{it-1}$
R_{mt} = the market return on day *t*, the average of returns of all firms included in the market index.
e_{it} = a random error term for stock i on day *t*.
α_i and β_i = firm independent coefficients to be estimated.

The market model is estimated for each bank in the sample using 180 daily returns. The estimated period starts 200 days before the announcement date and ends 21 days before the announcement date (or day t = - 200 to day t = -21). The length of the estimation period used in this study is consistent with prior studies of capital market responses [Bosch and Hirchey (1989), Hovav and Arcy (2003)]. The estimated parameters and the realized returns on the NEPSE market index have been used to predict normal returns before and after the event period.

The study confined to six separate events for a-21 day period around the event announcement (i.e. –10 days to +10 days) as suggested by Cheng and Leung (2006)**.** These six event periods are: (1) ten trading days prior to the information announcement, t – 10, to one day prior to the date of announcement day (i.e. day t = -10 to t = -1); (2) announcement day, t = 0, to ten trading days after the announcement, t + 10; (i.e. day t = 0 to t = +10), (3) two trading days after the announcement, t + 2, to ten trading days after the announcement, t + 10; (i.e. day t = +2 to t = +10), (4) ten trading days prior to the information announcement, t – 10, to ten days after the date of announcement day t + 10 (i.e. day t = -10 to t = +10); (5) five trading days prior to the information announcement, t – 5, to five days after the date of announcement day t + 5 (i.e. day t = -5 to t = +5); and (6) three trading days prior to the information announcement, t – 3, to three days after the date of announcement day t + 3 (i.e. day t = -3 to t = +3). Event day t = 0, is the date when firm i or government makes the announcement of new information.

These six periods can be classified into two separate categories. The first category of periods covers the complete event window in three separate (non-overlapping) and sequential segments: the pre-event period (-10, -1), the announcement period (0, +1) and the post announcement period (+2, +10). These three independent periods are mutually exclusive and cover the complete event window in continuous trading days. The second category represents overlapping periods of different lengths. They are (-10, +10), (-5, +5) and (-3, +3). These different events windows are selected because the study can examine the effects of the cumulative abnormal returns for the pre-event, announcement period, post-event and symmetrical overlapping event periods of various durations. The parameters of equation (1) estimation periods and events periods are presented in Figure 1.

FIGURE 1: Parameter Estimation and Event Periods



The coefficient estimates from regression equation (1) are used to predict normal returns for the six event periods: (-10, -1), (-10, +10), (-5, +5), (-3, +3), (0, +1) and (+2, +10)**.** Prediction errors during the event periods, i.e. deviations of realization returns from normal returns, are estimates of abnormal returns (AR). Thus, the market model is used to calculate a prediction error (abnormal return) for the common stock of a firm i on event day t, as under:

$$PE_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}) \quad (2)$$

The null hypothesis to be tested is that the sample average of market model cumulative prediction errors (or cumulative abnormal return) is equal to zero for any given event

period. More formally, for a sample of N securities, the sample mean prediction error on any given day t is:

$$\overline{PE}_t = \frac{1}{N}\sum_{i=1}^{N} PE_{it} \tag{3}$$

To measure market model prediction errors over a specific time interval or holding period, the sample mean prediction errors are summed to derive the sample mean cumulative prediction error as under:

$$\overline{CPE}_t = \sum_{t=T_1}^{T_2} \overline{PE}_t \tag{4}$$

where T_1 and T_2 identify beginning and ending days of sample-specific event periods within the overall 21 days t = -10 to t = +10 event period. The test t-statistic for the significance of $\overline{PE}_t$ is calculated as under:

$$t - \text{statistic (for PE)} = \frac{\overline{PE}_t}{\hat{S}(\overline{PE}_t)} \tag{5}$$

$$\text{where } \hat{S}(\overline{PE}_t) = \sqrt{\sum_{t=-200}^{t=-21} \frac{(\overline{PE}_t - \overline{\overline{PE}}_t)^2}{179}} \tag{6}$$

$$\overline{\overline{PE}} = \frac{1}{180}\sum_{t=-200}^{t=-21} \overline{PE}_t \tag{7}$$

where t = -200 to t = -21 is the 180 days estimation period. Under the null hypothesis of no abnormal returns, the $\overline{CPE}_t$ is assumed to be unit normal and both serially and cross-sectionally independent. The interval test statistic for each sample and each holding period of T days in length is assumed to be approximately unit-normal and can be written as under and follows a t-statistic distribution:

$$t - \text{statistic (for CPE)} = \frac{\overline{CPE}_t}{\hat{S}(\overline{PE}_t)\sqrt{T_2 - T_1 + 1}} \tag{8}$$

The significance of daily average abnormal returns was further tested using a non-parametric binominal statistic calculated as under:

$$Z = \frac{A - E}{\sqrt{NP(1-P)}} \tag{9}$$

where A is the actual number of positive prediction errors, E is the expected number of positive errors (i.e. equal to NxP), N is the number of observations, and P is the expected percentage of positive prediction errors. Under the null hypothesis of no effect, P = 0.5. This binomial statistic is more conservative than the t-statistic test and does not require the assumption of normality.

IV. EMPIRICAL ANALYSIS AND FINDINGS

Nature of Political Event Study

The Nepalese stock market's reaction to the unanticipated political events is what the current study deals with. The political events assumedly generate abnormal returns in the case of the semi-strong form of market efficiency. Such abnormal returns may be positive (negative) depending upon the good-news (bad-news) of the political event.

Table 2 reports the sample event numbers, total firm observations, number of good news and bad news. During 2000/01 to 2006/07 period, total of 81 firm observations were identified with 8 different political announcements. These total 81 firm political event observations are partitioned into good news and bad news announcements on the basis of the future certainties/uncertainties to the stock market. The events are classified into good-news (bad-news) announcements if the announcements can create future certainty (uncertainty) to stock market. Thus, the Royal massacre (event-1), capital gain tax imposed on share trading (event-2), cease-fire withdrawn by the Maoists (event-6), and announcement of monetary policy for 2005/06 (event-7) are treated as bad-news announcements. These announcements are bound to introduce substantial uncertainty about the future course of the firm's business and the share market, and therefore, involve substantial risks. Thus, a negative value effect might be expected from the bad-news announcements.

Similarly, the cease-fire by the government and the Maoists (event-3), the taking up of executive power by King Gyanendra (event-4), the cease fire by the Maoists (event-5), and peace agreement between the government and the Maoists (event-8) are classified under good-news announcements. These announcements are bound to introduce substantial certainty about the future course of the firm's business and the share market, and therefore involve lesser risk. Thus, a positive value effect might be expected from the good news announcements.

TABLE 2: Political Events, Total Firm Observations, Good-News and Bad-News

Fiscal Years	*Events*	*Event details*	*Total Observations*	*Good News*	*Bad News*
2000/2001	1	The Royal massacre.	9	0	9
2001/2002	2	Capital gain tax imposed on share trading through the government's budget speech 2001/02	9	0	9
2002/2003	3	Cease fire by the government and Maoist rebels	9	9	0
2004/2005	4	King Gyanendra dismissed Prime Minister Sher Bahadur Deuba and took up executive power.	10	10	0
2005/2006	5	Cease fire by the Maoists.	11	11	
	6	Cease fire withdrawn by the Maoists	11	0	11
2006/2007	7	Announcement of monetary policy for 2006/07; revision of the required paid-up capital of the bank to Rs. 800 million from Rs. 1,000 million by mid-July 2009.	11	0	11
	8	Peace agreement between the government and Maoists; Maoist agreed to lay down arms.	11	11	0
		Total	81	41	40

TABLE 3: Summary of Frequency Distributions of Estimated Coefficients for the Political Announcements

Statistic	*Mean*	*Median*	*Mean Absolute Deviation*	*Standard Deviation*	*Extreme Values*	*Skewness*
$\hat{\alpha}$	-0.012	0.016	0.124	0.153		Left
$\hat{\beta}$	1.175	1.162	0.392	0.486	2.638	Slightly right
r	0.462	0.466	0.123	0.161	0.035, 0.044, 0.805	Slightly left

Notes: The table depicts summary descriptions of the frequency distributions of the estimated values of α_i , β_i and r_i. Where, α_i and β_i are estimated coefficients of the equation (1): $R_{it} = \alpha_i + \beta_i R_{mt} + e_{it.}$ Similarly, r_i is the correlation between the daily rates of returns security i (R_{it}), and the daily rates of returns on the market portfolio (R_{mt}). The sample average or mean absolute deviation of the random variable x is defined as

$$\frac{\sum_{t=1}^{N}\left|x_t - \bar{x}\right|}{N}$$

where $\bar{x}$ is the sample mean of the x's and N is the sample size.

Table 3 provides summary descriptions of the frequency distributions of the estimated values of α_i, β_i and r_i where, α_i and β_i are estimated coefficients of the equation (1). Similarly, r_i is the correlation coefficient between the daily rates of returns security i (R_{it}) and the daily rates of returns on the market portfolio (R_{mt}). The table indicates that there are indeed fairly moderate degrees of relationships between the market and daily returns on individual securities; the mean value of the r_i is 0.462 with an average absolute deviation of 0.123 about the mean. Moreover, the estimates of equation (1) for the different securities conform fairly well to the assumptions of the linear regression model.[1] It is important to note, however, that the data do not conform well to the normal.

Market Reaction to Overall Sample of Political Events

The distribution of prediction errors (abnormal returns) for the pre-event period (-10, -1), the announcement period (0, +1) and the post announcement period (+2, +10) are shown in Table 4 and Table 5. These tables also report the distribution of abnormal returns with overlapping event periods of different length such as (-10, +10), (-5, +5) and (-3, +3). Over the pre-event period (-10, -1), the sample cumulative average prediction error is: –1.24 per cent (t-statistic = -2.57, significance at the 5 per cent level). About 43.21 per cent of the sample firms have positive prediction errors over that period. Similarly, the prediction error for the overall sample is 0.09 per cent during the

[1] Assumptions of the linear regression model are: (1) linearity, (2) homoscedasticity, and (3) serial independence.

TABLE 4: Summary of Average Daily Prediction Errors for the Overall Sample of Political Announcements Over the Period 2001 to 2006

Panel A: Average Daily Prediction Errors				
Day	Average Prediction Error (%)	t-Statistic for Average Prediction Error	Percentage Positive Prediction Error	Z-Statistic for Percentage Positive
-10	-1.37	-9.00***	37.50	-2.12**
-9	0.90	5.94***	52.78	0.47
-8	-0.16	-1.07	38.03	-2.02**
-7	-0.73	-4.79***	36.49	-2.32**
-6	0.10	0.63	42.86	-1.20
-5	-0.24	-1.60	47.89	-0.36
-4	-0.07	-0.46	42.47	-1.29
-3	0.17	1.15	55.71	0.96
-2	0.16	1.04	45.33	-0.81
-1	0.01	0.04	43.59	-1.13
0	0.13	0.88	48.48	-0.25
1	-0.05	-0.30	39.71	-1.70*
2	0.13	0.82	43.48	-1.08
3	0.29	1.88*	52.86	0.48
4	-0.03	-0.21	56.52	1.08
5	-0.13	-0.88	52.54	0.39
6	-0.04	-0.28	55.07	0.84
7	-0.50	-3.29***	49.32	-0.12
8	-0.21	-1.37	50.00	0.00
9	0.58	3.82***	55.56	0.94
10	0.07	0.47	51.43	0.24
Panel B: Cumulative Average Prediction Errors				
Period	Cumulative Average Prediction Error (%)	t-Statistic for Cumulative Average Prediction Error	Percentage Positive Cumulative Prediction Error	Z-Statistic for Percentage Positive
(-10, -1)	-1.24	-2.57**	43.21	-1.22
(0, +1)	0.09	0.41	37.66	-2.56**
(+2, +10)	0.14	0.32	53.09	0.56
(-10, +10)	-1.00	-1.44	43.21	-1.22
(-5, +5)	0.36	0.71	45.68	-0.78
(-3, +3)	0.84	2.08**	51.85	0.33

Notes: The table reports the average daily prediction errors for day t = -10 to day t = +10. The sample consists of a total 81 firm political announcements for the eleven banking companies listed in the NEPSE for the six-year period 2001 to 2006. The market model is considered for the normal returns. Average prediction error is the sample average abnormal return for the specified day in event time, and cumulative average prediction error is the sample cumulative average abnormal return for the specified event window. Event time is measured in days relative to the political announcement date.

* Significant at the 10% level (two-tail test)

** Significant at the 5% level (two-tail test)

*** Significant at the 1% level (two-tail test)

TABLE 5: Frequency Distribution and Descriptive Statistics for Prediction Errors during the Announcement Period (day t = -10 to day t = +10) for the Overall Sample of Political Announcements over the Period 2001 to 2006

Range of Prediction Errors	Period (-10, -1)	Period (0, +1)	Period (+2, +10)	Period (-10, +10)	Period (-5, +5)	Period (-3, +3)
Panel A: Frequency Distribution						
10% ≤ PE	8	0	7	7	6	5
8% ≤ PE < 10%	1	2	1	4	2	5
6% ≤ PE < 8%	5	3	3	4	2	4
4% ≤ PE < 6%	4	1	7	5	4	2
2% ≤ PE < 4%	11	9	10	6	11	5
0% ≤ PE < 2%	6	18	15	9	12	21
-2% ≤ PE < 0%	10	40	15	12	21	14
-4% ≤ PE < -2%	11	6	9	9	6	10
-6% ≤ PE < -4%	8	1	4	7	9	10
-8% ≤ PE < -6%	8	0	2	5	5	2
-10% ≤ PE < -8%	2	0	3	1	2	1
PE < -10%	7	1	5	12	1	2
Total	81	81	81	81	81	81
Panel B: Descriptive Statistics						
Minimum (%)	-26.22	-7.05	-43.05	-43.05	-16.84	-16.84
Mean (%)	-1.24	0.09	0.14	-1.00	0.36	0.84
t-Statistic	-2.57**	0.41	0.32	-1.44	0.71	2.08**
Maximum (%)	11.86	8.07	21.01	21.01	14.90	14.90
Percentage Positive	43.21	35.80	53.09	43.21	45.68	51.85
Z-Statistics	-1.22	-2.56**	0.56	-1.22	-0.78	0.33

Notes: The table reports frequency distribution and descriptive statistics for the daily prediction errors for day t = -10 to day t = +10. The sample consists of a total 81 firm political announcements for the eleven banking companies listed in the NEPSE for the six-year period 2001 to 2006. The market model is considered for the normal returns. Prediction error is the sample abnormal return for the specified day in event time and cumulative prediction error is the sample cumulative abnormal return for the specified event window. Event time is measured in days relative to the political announcement date.

* Significant at the 10% level (two-tail test)
** Significant at the 5% level (two-tail test)
*** Significant at the 1% level (two-tail test)

announcement period (0, +1), which is statistically insignificant (t-statistic = 0.41). The 37.66 per cent of the firm observations have positive prediction errors (Z-statistic = -2.56, significant at the 5 per cent level). In the post-event period (+2, +10), the cumulative prediction error is 0.14 per cent (t-statistic = 0.32) and percentage positive cumulative prediction error is 53.09 per cent (Z-statistic = 0.56). Both parametric (t-test) and non-parametric (Z-test) increased respectively from the pre-event and announcement period, but remained statistically insignificant. During the overlapping period of (-3, +3), the cumulative average prediction error is 0.84 per cent (t-statistic = 2.08, significance at the 5 per cent level).

On the event announcement date t = 0, the sample experiences an insignificant positive average prediction error of 0.13 per cent (t-statistic = 0.88), and 48.48 per cent of the firm observations have positive abnormal returns (Z-statistic = -0.25). The average prediction error is positive for next ten business days.

Following the announcement date (t = +1), the average prediction error is negative 0.05 per cent with the 39.71 per cent of the firm observations with positive abnormal returns (Z-statistic = -1.70, significant at 10 per cent level). Thus, it indicates that the overall sample political announcements show a fairly strong negative abnormal response to the announcement period. But, positive abnormal response to the announcements of political events has been shown in the post-event periods.

The effect has occurred most significantly between the 7 to 10 business days before the important political announcement. The negative pre-announcement effect is followed by a positive post announcement drift, which cancels out 19% of the announcement effect. Over the period (-10, +10), the cumulative average prediction error is a negative but statistically insignificant –1.00 per cent (t-statistic = -1.44).

On an average, the overall sample political event announcement appears to have a little positive effect on the market value of the firm around announcement time. While the average effect is positive, the data in the sample suggests some ex-ante uncertainty about the wealth effect of political event announcements. A firm randomly selected from political announcement candidates has roughly a 51 per cent chance for a positive outcome, but the magnitude of this positive effect seems to vary substantially.

Table 5 also reports the variation of average prediction errors. The overall sample shows that the minimum average prediction error is negative 43.05 per cent, while the maximum prediction error is 21.01 per cent. Even then, the majority of the firm's average prediction errors fall within the range of 8 per cent from negative 4 per cent to positive 4 per cent.

Market Reaction to Good-News and Bad-News Political Events

The possible differences in the effects of "good-news" versus "bad-news" political announcements are considered. The average prediction errors from day t = -10 to day t = +10, t-statistic and percentage positive prediction errors with Z-statistic are shown in Tables 6 and 7. The tables also report the distribution of cumulative average prediction errors (abnormal returns), t-statistic, percentage positive prediction errors, Z-statistic with

event periods of different length such as (-10, -1), (0, +1), (+2, +10), (-10, +10), (-5, +5) and (-3, +3).

Market Reaction to Good-News Announcement

Table 6 depicts average daily prediction errors in panel "A" and cumulative average prediction errors in panel "B" for the good news announcements with respect to political events. The good news announcements cause strong positive average prediction errors, either daily or cumulatively.

The sub-sample of good news announcements, in the pre-event period, are statistically strong negative average daily prediction errors in between day t = -7 to day t = -1. Just before the event announcements, day t = -2, the negative average daily prediction error is 0.46 per cent (t – statistic = - 2.70, significant at the 1 per cent level) and 34.21 per cent of the sample firm observations have positive prediction error (Z – statistic = - 1.95, significant at the 10 per cent level). The result is also followed in day t = - 1 with strong negative average daily prediction error 0.33 per cent (t – statistic = - 1.90, significant at the 10 per cent level). On the contrary, the situation improved on the event announcement day t = 0 where the positive average prediction error is 0.01 per cent but still statistically insignificant.

The average daily prediction errors are strongly positive for the three days following the event day t = 0. On the post event periods, the average daily prediction errors on day t = +1, t = +2 and t = +3 are 0.92 per cent, 1.18 per cent and 0.73 per cent, with t-statistics significant at the 1 per cent level (t-statistic (day t = +1) = 5.38, t-statistic (day t = +2) = 6.85, t-statistic (day t = +3) = 4.27). The results explained that the unanticipated political event such as good-news effect has positive impact up to three days from the announcement.

The cumulative average prediction error over the pre-announcement period (-10, -1) is negative 2.66 per cent (t-statistic = -4.90, significant at the 1 per cent level). During the pre-announcement period (-10, -1), 29.27 per cent of sample firm observations have positive prediction error (Z-statistic = -2.65, significant at 1 per cent level). The negative cumulative average prediction error improves to become positive 0.93 per cent (t-statistic = 3.83, significant at the 1 per cent level) during the announcement period (0, +1). It is further improved to positive 1.78 per cent (t-statistic = 3.46, significant at the 1 per cent level) on the post-event period (+2, +10). Hence, there is a positive valuation effect of good political news announcement on the share market.

There are positive cumulative average prediction errors in the results of three overlapping event periods (-10, +10), (-5, +5) and (-3, +3). During the event period (-10, +10), the cumulative average prediction error is 0.05 per cent, which is statistically insignificant. The cumulative average prediction error over the period (-5, +5) is 1.43 per cent with t-statistic = 2.51 (significant at the 5 per cent level). Similarly, the cumulative average prediction error over the period (-3, +3) is 2.30 per cent (t-statistic = 5.07, significant at the 1 per cent level) and 63.41 per cent of the sample firm observations have positive prediction error (Z-statistic = 1.72, significant at 10 per cent level). The results show that the lesser the length of overlapping event period, the higher the cumulative positive prediction errors. It means that, first, the good-news sub-samples appear to compensate the negative prediction errors through positive valuation after the short span

of post-event periods, and second, there are higher positive prediction errors around the announcement date. Thus, the good-news of political sample announcement created positive valuation effects during the post-announcement period.

TABLE 6: Summary of Average Daily Prediction Errors for the Good News Sub-Samples of Political Announcements over the Period 2001 to 2006

Panel A: Average Daily Prediction Errors

Day	Average Prediction Error (%)	t-Statistic for Average Prediction Error	Percentage Positive Prediction Error	Z-Statistic for Percentage Positive
-10	-0.11	-0.61	44.44	-0.67
-9	0.10	0.59	47.22	-0.33
-8	-0.07	-0.43	27.78	-2.67***
-7	-1.22	-7.12***	37.14	-1.52
-6	-0.16	-0.95	32.35	-2.06**
-5	-0.51	-2.95***	40.00	-1.18
-4	-0.16	-0.92	36.11	-1.67*
-3	0.26	1.49	62.16	1.48
-2	-0.46	-2.70***	34.21	-1.95*
-1	-0.33	-1.90*	38.46	-1.44
0	0.01	0.04	50.00	0.00
1	0.92	5.38***	52.94	0.34
2	1.18	6.85***	52.78	0.33
3	0.73	4.27***	51.35	0.16
4	0.10	0.58	56.76	0.82
5	-0.31	-1.81*	44.12	-0.69
6	0.27	1.59	67.57	2.14**
7	-0.06	-0.38	40.00	-1.18
8	-0.01	-0.09	44.74	-0.65
9	0.17	1.00	52.78	0.33
10	-0.28	-1.61	48.57	-0.17

Panel B: Cumulative Average Prediction Errors

Period	Cumulative Average Prediction Error (%)	t-Statistic for Cumulative Average Prediction Error	Percentage Positive Cumulative Prediction Error	Z-Statistic for Percentage Positive
(-10, -1)	-2.66	-4.90***	29.27	-2.65***
(0, +1)	0.93	3.83***	48.72	-0.16
(+2, +10)	1.78	3.46***	58.54	1.09
(-10, +10)	0.05	0.07	43.90	-0.78
(-5, +5)	1.43	2.51**	53.66	0.47
(-3, +3)	2.30	5.07***	63.41	1.72*

Notes: The table reports the average daily prediction errors for day t = -10 to day t = +10. The sample consists of a total 41 firm political good-news announcements for the eleven banking companies listed in the NEPSE for the six-year period 2001 to 2006. The market model is considered for the normal returns. Average prediction error is the sample average abnormal return for the specified day in event time, and cumulative average prediction error is the sample cumulative average abnormal return for the specified event window. Event time is measured in days relative to the political announcement date.

* Significant at the 10% level (two-tail test)

** Significant at the 5% level (two-tail test)

*** Significant at the 1% level (two-tail test)

Market Reaction to Bad-News Announcement

Table 7 depicts average daily prediction errors in panel "A" and cumulative average prediction errors in panel B for the bad-news announcement with respect to political events. The bad-news announcement cause strong negative average prediction errors, either daily or cumulatively.

The sub-sample of bad-news announcements in the pre-event period, is statistically significant and positive average daily prediction errors of 0.80 per cent in day t = -2 with t-statistic 2.72 (significant at the 1 per cent level). The pre-announcement day t = -1 and event announcement day t = 0 also have positive, but statistically insignificant, average prediction errors of 0.34 per cent and 0.24 per cent, respectively.

The positive average prediction errors before the announcement date turn out to be negative immediately after the date of bad news announcement. It has continued for the following four days. On day t = +1, the negative average daily prediction error is 1.01 per cent (t – statistic = - 3.46, significant at the 1 per cent level) and 26.47 per cent of the sample firm observations have positive prediction error (Z – statistic = - 2.74, significant at the 1 per cent level). The result is also followed in day t = +2 with strong negative average daily prediction error 1.02 per cent (t – statistic = - 3.49, significant at the 10 per cent level) and 33.33 per cent of the sample firm observations have positive prediction error (Z – statistic = - 1.91, significant at the 10 per cent level). Similarly, on the event day t = +7, the average prediction error is negative 0.90 per cent with t-statistic = -3.08 (significant at the 1 per cent level). These negative average abnormal prediction errors improved to become positive on day t = +10 with t-statistic = 3.38 (significant at the 1 per cent level). The results suggested that the positive prediction errors during the pre-event day drifted to become negative due to announcement of bad news.

The cumulative average prediction error over the pre-announcement period (-10, -1) is positive 0.12 per cent, which is statistically insignificant. The negative cumulative average prediction error is 0.77 per cent (t-statistic = -1.87, significant at the 10 per cent level) during the announcement period (0, +1). In such an announcement period (0, +1), 26.32 per cent of sample firm observations have positive prediction error (Z-statistic = -2.92, significant at 1 per cent level).

The negative average prediction error further drifted to negative 1.63 per cent (t-statistic = -1.85, significant at the 10 per cent level) on the post-event period (+2, +10). Hence, the negative valuation effect of bad news political announcement on share market has surfaced.

In the case of the three overlapping event periods (-10, +10), (-5, +5) and (-3, +3), they produced negative cumulative average prediction errors. During the event period (-10, +10), the cumulative average prediction error is negative 2.28 per cent (t-statistic = -1.70, significant at the 10 per cent level). The cumulative average prediction error over the period (-5, +5) and (-3, +3) is negative 0.84 per cent and 0.79 per cent which are statistically insignificant.

TABLE 7: Summary of Average Daily Prediction Errors for the Bad News Sub-Samples of Political Announcements over the Period 2001 to 2006

Panel A: Average Daily Prediction Errors				
Day	Average Prediction Error (%)	t-Statistic for Average Prediction Error	Percentage Positive Prediction Error	Z-Statistic for Percentage Positive
-10	-2.63	-9.00***	30.56	-2.33**
-9	1.71	5.83***	58.33	1.00
-8	-0.25	-0.86	48.57	-0.17
-7	-0.29	-0.98	35.90	-1.76*
-6	0.34	1.16	52.78	0.33
-5	0.01	0.05	55.56	0.67
-4	0.01	0.05	48.65	-0.16
-3	0.08	0.28	48.48	-0.17
-2	0.80	2.72***	56.76	0.82
-1	0.34	1.16	48.72	-0.16
0	0.24	0.82	47.22	-0.33
1	-1.01	-3.46***	26.47	-2.74***
2	-1.02	-3.49***	33.33	-1.91*
3	-0.21	-0.73	54.55	0.52
4	-0.18	-0.63	56.25	0.71
5	0.11	0.36	64.00	1.40
6	-0.41	-1.39	40.63	-1.06
7	-0.90	-3.08***	57.89	0.97
8	-0.41	-1.41	55.56	0.67
9	0.99	3.38***	58.33	1.00
10	0.42	1.43	54.29	0.51
Panel B: Cumulative Average Prediction Errors				
Period	Cumulative Average Prediction Error (%)	t-Statistic for Cumulative Average Prediction Error	Percentage Positive Cumulative Prediction Error	Z-Statistic for Percentage Positive
(-10, -1)	0.12	0.13	57.50	0.95
(0, +1)	-0.77	-1.87*	26.32	-2.92***
(+2, +10)	-1.63	-1.85*	47.50	-0.32
(-10, +10)	-2.28	-1.70*	42.50	-0.95
(-5, +5)	-0.84	-0.87	37.50	-1.58
(-3, +3)	-0.79	-1.02	40.00	-1.26

Notes: The table reports the average daily prediction errors for day t = -10 to day t = +10. The sample consists of a total 40 firm political bad-news announcements for the eleven banking companies listed in the NEPSE for the six-year period 2001 to 2006. The market model is considered for the normal returns. Average prediction error is the sample average abnormal return for the specified day in event time, and cumulative average prediction error is the sample cumulative average abnormal return for the specified event window. Event time is measured in days relative to the political announcement date.

* Significant at the 10% level (two-tail test)

** Significant at the 5% level (two-tail test)

*** Significant at the 1% level (two-tail test)

The results have shown that higher the length of overlapping event period, higher the cumulative negative prediction errors. It means the bad-news sub-samples appear to cancel out the positive prediction errors by negative valuation after the long event periods Thus, the bad-news of political sample announcement placed the negative valuation effects during the post announcement period at least for two days.

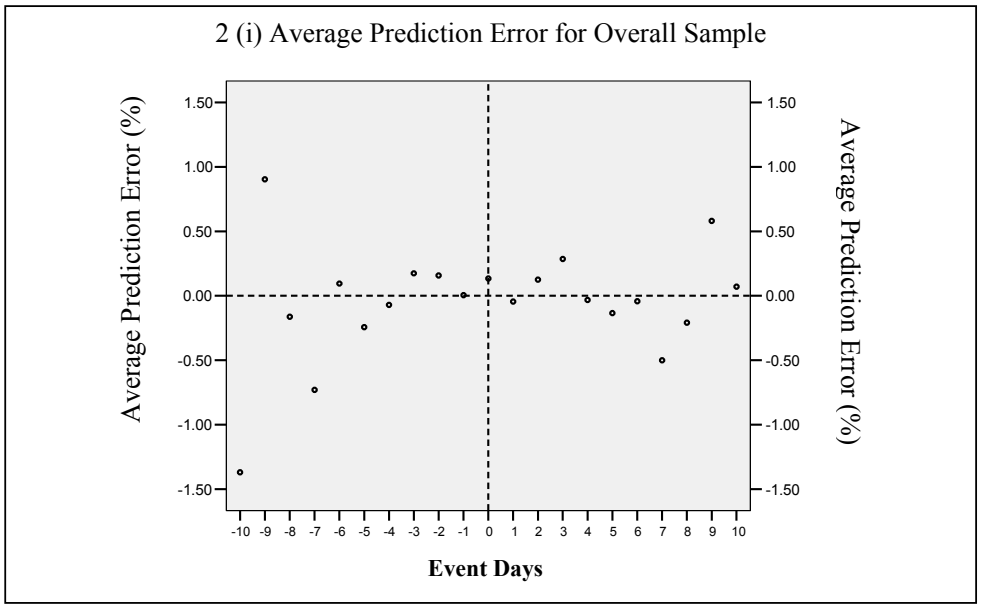
Graphical Presentation

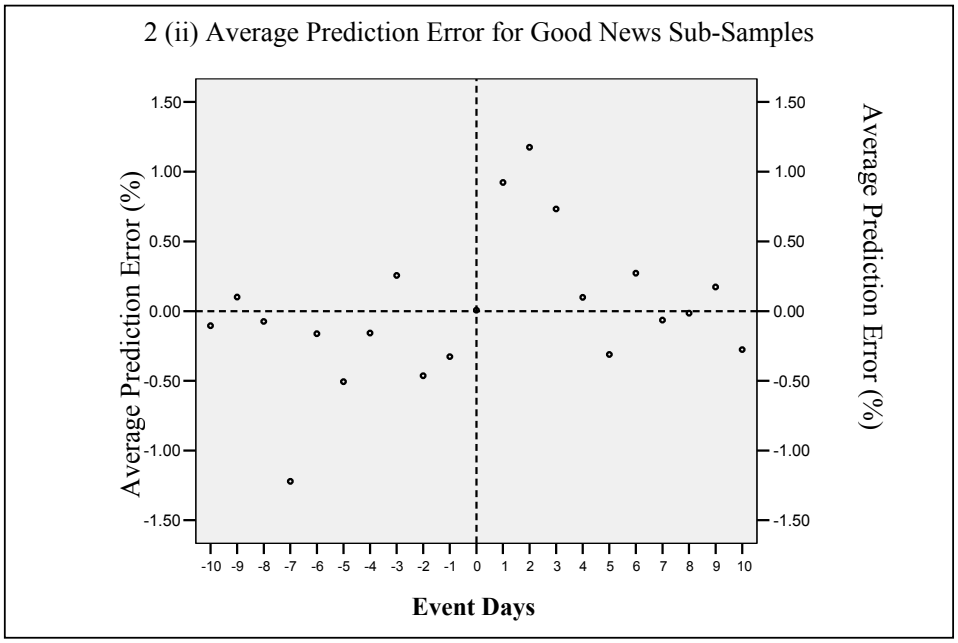
Figure 2 presents graphs of the average prediction error for overall sample, good news and bad news sub-samples. Similarly, Figure 3 presents graph of the cumulative average prediction error for all samples including good-news and bad-news sub-samples.

Several of the earlier statements can now be substantiated. First, Figures 2 (i), 2 (ii), and 2 (iii) show the average prediction errors in 21 days around the event announcement date. Out of 21 days, 10 days are pre-event periods and other 10 days are post-event period and remaining one day as the event announcement date. Figure 2 (i) clearly shows the average prediction errors are randomly distributed around the 0 per cent. Figure 2 (ii) shows that the average prediction errors are negative prior to the announcement of event, which turn to become positive on post-event period. The figure provides additional evidence of positive impact of good-news announcements as explained earlier with the help of Table 6. Similarly, Figure 2 (iii) shows the average prediction errors are positive prior to the announcement of event, which drifted into negative on post-event period. It also reinforces effect of bad-news announcements as explained earlier with the help of Table 7.

Secondly, Figure 3 shows the cumulative average prediction error in the twenty-one days around the event announcement date. The cumulative average prediction error for the overall sample is in the negative. In the post-event period, the cumulative prediction errors drifted upward to positive in the case of good news sub-sample. On the contrary, in the case of bad news sub-sample, the cumulative prediction errors drifted downward to negative. The behaviour of prediction errors for political events with ‘good-news’ and ‘bad-news’, however, provide the strongest evidence in favour of immediate market response to reliable political information.

FIGURE 2: Average Prediction Error of Political Announcement





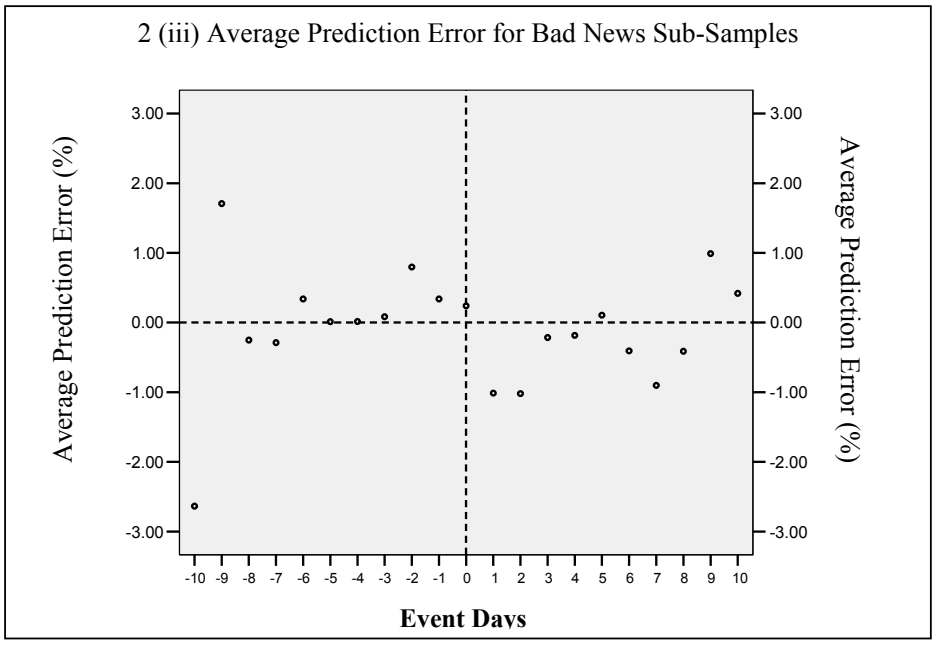
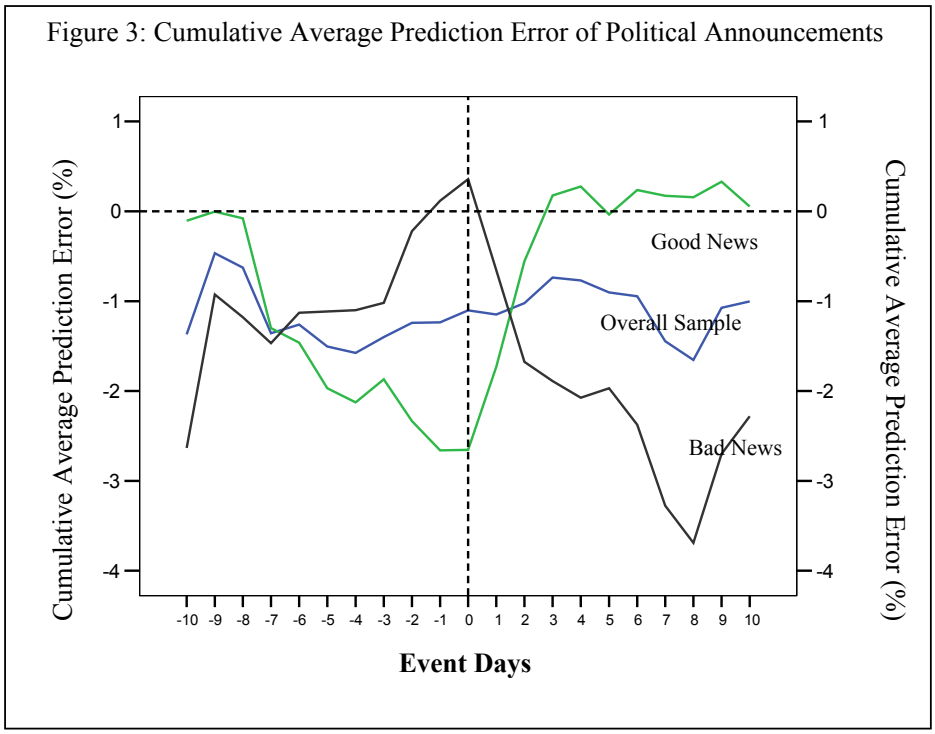


Figure 3: Cumulative Average Prediction Error of Political Announcements



In the case of good-news, only parametric tests are statistically significant for day t = +1 and t = +2. On the contrary, both parametric and non-parametric tests are statistically significant for day t = +1 and t = +2 in bad-news announcements. It means that the sample stock prices respond most strongly to bad-news. This result is consistent with the views of Conrad et al. (2002) who reported the stock prices relatively more sensitive to bad-news than good-news as the market rises.

The above empirical evidences reject the Efficient Market Hypothesis. Fama (1991) explained that stock prices seem to adjust within a day to event announcement. The fact that quick adjustment is consistent with efficiency is noted. But the results revealed that the stock price adjusted within 2 or 3 days of the political announcements in the case of Nepalese stock market. It shows that Nepalese investors revaluated their stock prices with new political information. The good-news and/or bad-news political events are carefully identified by the Nepalese capital market. For example, the positive (negative) abnormal returns are generated during and after announcement with good-news (bad-news) announcements as per the prior expectation. This suggests a link between common stock returns and political outcomes. The study provided evidence that the Nepalese stock market supports the information content hypothesis. The results are consistent with the prior studies by Li and Born, (2006), Martinez and Santiso (2003), and Bittlingmayer (1998). Results of these studies are consistent with the hypothesis that investors see a causal link between political uncertainty and common stock returns generation. The results indicate that political uncertainty is observed by and priced in the Nepalese equity market. This link between politics and stock market is found in an unbiased framework consistent with the market efficiency hypothesis. Since the stock-price adjustment is made two or three days from the announcement date, it is a clear indication that the Nepalese stock market is inefficient.

V. CONCLUSION

In aggregate, the sample data suggest that the information effects of associated political events are being properly considered by Nepalese capital market, that is, it is consistent with the information content hypothesis. As per the prior expectation, the study has provided the evidence that the good-news leads to the positive average prediction error. Similarly, the bad-news drifts the negative average prediction error on the post-announcement period. Finally, the data present important evidence on the speed of adjustment of market prices to new political information, i.e., in as many as 2 to 3 days from the announcement date. Thus, the Nepalese stock market may be inferred to be inefficient, but there is a strong linkage between political uncertainty and common stock returns generation.

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