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Trinity In The Nepal-India Monetary Arrangement: Lessons From Bretton Woods

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INTRODUCTION

In today's interdependent world, a smoothly functioning monetary system (MS) is necessary to finance adjustments to imbalance in the Balance of Payments (BOP). Pilbeam (1998, p. 227) has defined a MS as "...the set of conventions, rules, procedures and institutions that govern the conduct of financial relations between nations." For this paper, a MS can be characterised by three mechanisms: (1) the exchange rate, which adjusts the relative price of the domestic currency vis-a-vis the foreign currency, (2) the money supply, which contracts or expands the domestic currency, and finally, (3) the mobility of capital, which allows funds to flow between countries in reaction to higher interest rates. However, there are conditions where the MS can become inconsistent and lead to both adjustment problems and financial crisis. This paper looks at conditions which make an inconsistent MS from the experience of the Bretton Woods (BW) international monetary system, the Exchange Rate Mechanism (ERM) of the European Monetary System and the present financial crisis in Thailand, Indonesia and Korea, lumped together under the term Asian Currency Crisis (ACC).

There is no formal monetary system existing between Nepal and India. Although a de facto MS has formed, i.e. there has been a unilateral decision by Nepal, which may be called a monetary arrangement (MA). This Nepal-India monetary arrangement (NIMA) has existed for many years without major problems. However, there have been a number of significant changes in Nepal and India over the last decade, this paper focuses mainly on the increase of capital mobility in NIMA and the effects for Nepal's financial policy. As capital mobility rises, NIMA's situation is slowly becoming similar to the situations leading to the break down of BW, ERM and ACC. The main purpose of this paper is to demonstrate that the potential for a financial crisis is increasing and to initiate a debate in Nepal on addressing this potential problem.

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This paper first describes BW, ERM and ACC, then NIMA: the past and present, and at the last it concludes with a policy recommendation.

BRETTON WOODS (BW), THE EXCHANGE RATE MECHANISM (ERM) AND THE PRESENT ASIAN CURRENCY CRISIS (ACC)

BW, ERM and ACC took place in different times and with varying magnitudes, however, facing a similar financial crisis situation. While an in-depth analysis examining each situation is outside the scope of this paper, this section tries to capture the common phenomenon faced by BW, ERM and ACC: the inconsistency in the MA.

The inconsistency in the MA goes by many names : Padoa-Schioppa's (1988) inconsistent quartet, the impossibility theorem, the *unholy* triad/trinity etc. This inconsistency describes an MA where the characteristics of (1) rigid exchange rate, (2) autonomy in national macroeconomic policy vis-a-vis the external sector in responding to shocks to the domestic economy, sometimes taken as monetary independence vis-a-vis the BOP, (3) high capital mobility, cannot exist simultaneously. Any attempt to simultaneously have all three characteristics would present speculators "with that rare, and greatly desired phenomenon, a 'sure thing' !" (Graham 1940, p. 17). In other words, an inconsistent MA allows the existence for certain profit where speculators, by arbitraging this away, will force an adjustment in the MA and potentially result in a financial crisis. Thus, if all three legs of the *unholy* trinity are present then there is a growing potential for a financial crisis.

To clarify what is meant by an *inconsistent* MA and *sure* profit consider two countries, Alpha and Beta, which have an adjustable peg arrangement where one unit currency of country Alpha can be exchanged for one unit currency of country Beta in the foreign exchange market. The foreign exchange market for say Alpha's currency, the analysis would be exactly the same for Beta's, i.e. an inflow, and the supply of Alpha's currency as a demand for Beta's currency, i.e. an outflow. At the given exchange rate, investors are indifferent between investing in Alpha or Beta since investments in eithter country give the same return, this is reflected as an equilibrium in the foreign exchange market for both Alpha and Beta's currency where the supply of the currency equals the demand for the currency. This means that the MA is consistent and is in BOP equilibrium.

If Alpha were to face a shock such as a greater budget deficit vis-a-vis Beta the return on investment in both countries would diverge. Concretely, say the budget deficit in Alpha resulted in its monetization by

the monetary authority, i.e. by printing money, with resulting higher inflation. This means that at the old exchange rate investors are now not indifferent to investing between Alpha and Beta since the return on the investment in Alpha, after taking into account the increased inflation, is less than in Beta. This is exactly what happened in BW when USA faced inflationary financing from the Vietnam war, in the ERM when Germany faced the cost of unification, where they financed the budget deficit by issuing bonds, however, the end result, an interest differential, was the same, (Higgins 1993), and to some extent in ACC which faced large private debts. As funds flow from Alpha to Beta, in this case due to divergent returns, this results in a BOP disequilibrium or, more precisely, a deficit for Alpha or conversely a surplus for Beta, in other words, there is an over supply of Alpha's currency vis-a-vis Beta's, thus the MA is becoming inconsistent.

This situation of divergent returns resulting in a BOP disequilibrium can be addressed by policy makers in two ways. The first is to target the shock; following the previous example it would be to limit the budget deficit, in effect, decreasing government expenditures, increasing taxes, or both, so that the returns to investors would be the same in both Alpha and Beta. However, in many cases, this prescription is difficult especially with weak governments. The second avenue is to adjust the exchange rate to bring the BOP back into equilibrium, in the prior example the currency in Alpha would be depreciated vis-a-vis Beta, i.e. so that currency in Alpha becomes cheaper than currency in Beta. However, there may be rigidities which slow or prevent adjustment, in many cases they are political. In effect, these problems may cause a BOP disequilibrium to persist for some time.

In a world where funds are slow to move, the disequilibrium in BOP can be prolonged. For example the government of Alpha, to maintain the one for one exchange rate, can defend the currency value of Alpha by purchasing excess Alpha currency by drawing on its reserves of Beta currency, this is called intervention, categorised into sterilized versus unsterilized intervention (IMF 1997). However, when investors have the ability to move funds from Alpha to Beta in a short period of time, this is described as high capital mobility, then pressure will be put on the exchange rate as funds in Alpha move out, i.e. capital flight, to Beta to capture the higher returns, reflected as a further over supply of Alpha currency vis-a-vis Beta's currency. If investors know that the exchange rate between Alpha and Beta will have to depreciate to address the BOP disequilbrium, i.e. Alpha's reserves of Beta's currency is not infinite, then the movement of funds from Alpha to Beta will have another motivation. The depreciation of Alpha's currency will give investors an additional

profit, from divergent returns, since the value of foreign capital in terms of domestic currency increases by the amount of the depreciation. In this case the investors suddenly become currency speculators, (Krugman 1997). Thus, with the ability of investors/speculators to immediately arbitrage these opportunites, devergence in returns cannot exist. For BW, ERM and ACC, high capital mobility and the pressure from speculators combined with the rigidity in the pegged exchange rate system led to the breakdown of the respective MA's. Thus, once an inconsistency occurs in the MA and adjustment does not come quickly enough, speculators will use capital flows to pressure the exchange rate which may result in a breakdown of the MA and a financial crisis.

NIMA : PAST AND PRESENT

How the concept of consistency apply for NIMA, it shall be examined in terms of the triad for Nepal: exchange rate policy, monetary policy and capital mobility.

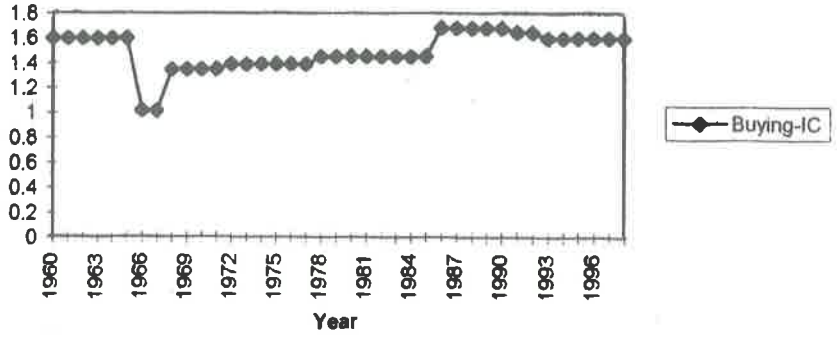
Nima: Past

NIMA's consistency is examined by looking at each leg of the triad from the perspective of Nepal. First, Nepal's pegged exchange rate with India has existed for almost forty years whose last adjustment occurred in 1993 (NRB 1993: Quarterly Economic Bulletin Various Issues (QEB) without any serious financial crisis.

The Graph 1 shows the official bying rate of the Nepalese currency to the Indian currency, taken from QEB.

Graph 1

Official Buying Rate Of The Indian Rupee To The Nepalsese Rupee



Source : Prepared by the Author based on QEB

Nepal's exchange rate relation with India is explored in greater detail in Maskay (1998a). Interestingly, there have been seven changes in Nepal's exchange rate with India starting in 1960 where one Indian Rupee equal 1.5975 Nepalese Rupee and ending in 1998 with one Indian Rupee equal to 1.6 Nepalese Rupee. In other words, the changes in Nepal's exchange rate with India has ended where it started.

This choice is consistent with Nepal being a suitable candidate for a fixed exchange rate with India from an analysis using Optimum Currency Area theory (Maskay 1998a). Second, the Nepalese monetary authority has some short term independence from the Indian monetary authority (Khatiwada 1994 and Maskay 1998b) to address shocks to the domestic economy, more precisely from the vicissitudes of the weather (Bajracharaya and Maskay 1998)). That is, Maskay (1998b) looked at the Nepalese monetary reaction function, with respect to both Nepalese and Indian variables, and found that there was no significant contemporaneous relation between the Nepalese and Indian monetary policy variables, looking at the delayed effect, by one year, suggests that there is a negative result between Nepalese and Indian monetary variables. This short term independence is consistent with Maskay (1998a) who, using the tools of cointegration, finds no long term relationship between the Nepalese and Indian monetary base although conditioning the monetary variables on the economic structures of both countries find a long term relationship. Finally, explicit estimation of capital mobility, via simultaneous equations to determine the offset and sterilization coefficients, suggests that capital mobility was low between Nepal and India (Khatiwada 1994 and Maskay 1998a).

In other words, while there has been a rigid pegged exchange rate and independent short term Nepalese monetary autonomy with India, there has been the presence of low capital mobility in NIMA, i.e. conditions for the *unholy* trinity did not occur. This suggests that NIMA, during this time, has been both consistent and, due to its stability for almost forty years, successful for Nepal.

Nima : Present

The past decade has been eventful for Nepal and the resulting relation in NIMA. As before, NIMA is examined in terms of the three legs of the triad from Nepal's perspective. The exchange rate and monetary policy can both be eliminated since each have not had significant change. Rather, this sub-section focuses on the changes on going in Nepal and the effect this has had on capital mobility between Nepal and India.

Before discussiong what changes have occurred in Nepal and what effect this has hand on capital mobility in NIMA, I shall discuss more fully what is meant by capital mobility and what is the estimate of capital mobility in NIMA. Capital mobility can be generalised to capture both the magnitude and speed of international flow of fund by either private individuals or governments. In the previous example it is the ability for investors in Alpha and Beta to shift funds to meet any profit opportunities. In NIMA capital mobility had been explicitly estimated up to 1994 and was found to be low between both countries (Khatiwada 1994 and Maskay 1998b). This is consistent with two pieces of information. First, a short term independence of Nepalese interst rates from Indian influence suggests low capital mobility and can be seen by looking at Nepal's IMF Country Report (1996 p.9):

"Starting in January 1995, monetary conditions in India were tightened to reverse an increase in inflation in that country and bolster a weakening external situation. However, the NRB failed to increase interest rates on government securities in step opening up an interest differential between India and Nepal of 4 percentage points by July 1995. The widening differential contributed to the deteriorating BOP in the first quarter of 1995/96. At the same time, the failure to raise interest rates on government securities dampened market demand for those securities..... The authorities (NRB) boosted interest rates on Treasury Bills in primary auctions, virtually closing the interest rate differential with India by January 1996. This stabilized the external position as capital outflw were stemmed."

If capital mobility were high in a fixed exchange rate setting then uncovered interest rate parity implies that capital flows would immediately equalise interest rates. However, the existence of an interest differential for almost a year suggests low short term capital mobility between Nepal and India. Second, personal experience while working at NIDC Capital Markets Ltd. from January 1995 till mid 1996 suggests that both information dissemination about financial market opportunities in NIMA as well as the ability to operationalise it were not speedy. In other words, the estimated low capital mobility in NIMA is consistent with reality.

There have been many changes in Nepal during the later part of the 1990's, however, I shall focus on the level of the financial development and the increasing access to financial information. The level of financial development is characterised as the efficiency of the financial system to match supply of funds, i.e. savings, with demand for funds, i.e. investment, and is generally measured by the ratio of broad money to gross

domestic product (Gillis, Perkins, Roemer and Snodgrass 1996, pp. 358-362) this is represented below for Nepal.

Table 1

Nepal's Financial Ratio

	Gross Percentage Change	Annual Percentage Change
1983-1989	18.5289 Percent	2.4581 Percent
1990-1997	36.2052 Percent	3.8512 Percent

Source : Computed by Author based on International Financial Statistics 1997, IMF.

This increase in the level of financial development in the 1990s is consistent with the increase in the number of financial companies. That is, at the beginning of 1990 there were only seven financial institutions, i.e. companies that had at least some banking transactions, in Nepal. However, by 1997, the latest available information, the number of financial institutions have become more numerous and varied and have jumped to ninety two. There were eleven commercial banks, two development banks, sixteen cooperative societies, with limited banking transactions, thirty seven finance companies and five grameen banks, with limited banking transactions. This is more than a thirteen fold increase in only a matter of seven years, specifically, it increased about by 1314 percent. While this certainly increases the level of financial development, i.e. the liquidity in the economy, the more relevant statistic may be the number of joint venture company financial institutions (JVCFI). JVCFI are either commercial banks or finance companies with foreign participation and are classified as such by the Nepal Rastra Bank whose sharp growth in the 1990s can be seen in the Table 2 and Graph 2 .

Table 2

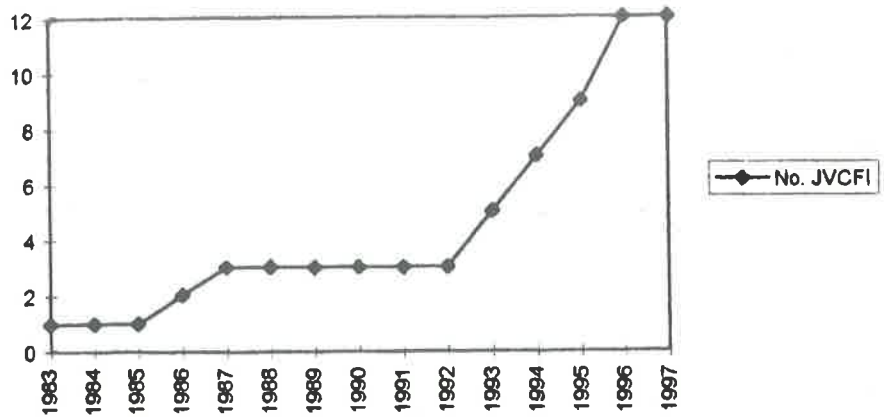
List of Joint Venture Commercial Banks

S.N.	Bank	Foreign Bank	Operation Date
1	Nepal Arab Bank Ltd.	National Bank, Bangladesh	07/12/1984
2	Nepal Indo-Suez Bank Ltd.	Banque Indosuez, France	02/27/1986
3	Nepal Grindlay's Bank Ltd.	ANZ Grindlays, New Zealand	02/01/1987
4	Himalayan Bank Ltd.	Habib Bank, Pakistan	01/18/1993
5	Nepal SBI Bank Ltd.	State Bank of India, India	07/07/1993
6	Nepal Bangladesh Bank Ltd.	IFIC Bank, Bangladesh	06/06/1994
7	Everest Bank Ltd.	Punjab National Bank, India	10/01/1994
8	Bank of Kathmandu Ltd.	Siam Commercial Bank, Thailand	03/12/1995
9	Nepal Bank of Ceylon	Bank of Ceylon, Shree Lanka	10/14/1996
S.N.	**Finance Company**	**Foreign Comapny**	**Operation Date**
1	International Leasing & Finance Co. Ltd.	The Korea Industrial Leasing Comany Ltd.	09/18/1995
2	Nepal Shreelanka Merchant Bank Ltd.	Merchant Bank of Shree Lanka	02/01/1996
3	Alpic Everest Finance Ltd.	Alpic Finance Ltd. India	02/01/1996
4	Nepal Merchant Banking & Finance Ltd.	Your Lian Realty SDN BHD, Malaysia	12/19/1996

Source : NRB.

Graph 2

Number of JVC Financial Institutions in Nepal



Source : Constructed by the Author based on Table 2.

The graph shows that the seven years preceding 1990 had only three JVCFI's in Nepal however the seven years after 1990 saw a four fold increase to twelve JVCFI's.

There has also been a significant growth in access to the Internet. While hard data is not available, the Computer Association of Nepal has indicated to me that there has been a 3300 percent increase over three years in the number of Internet users, i.e. in 1995 there were only 150 users but today there are over 5,000.

What effect does increased financial information and information technology have on capital flows ? For the euromarket, not to be confused with the euro, the currency created by Europe in 1999, this has resulted in increased capital flows. That is:

"Throughout the history of Euromarkets, and international financial trading in general, there has been a steady trend of reduced costs due to improved communication and transaction technology...recently, the revolution in international finance has been pushed even further by information technology- new computer advances merged with new telecommunications technology... as a result..., the boundaries between the euromarkets and many countries' domestic financial markets have begun to break down." (Caves, Frankel and Jones 1999, pp. 414-415).

This is further elaborated by Credes (1997) who looks at the effects of the Internet on international banking and concludes that:

"The nature of future developments is still uncertain, particularly given the key role banks have in creating an environment of trust and their authentication of information for the financial system as a whole. However, there are clear indications.. that the Internet's wide-ranging network externalizes will start to create major competitive pressure first in domestic and then in international banking markets." (Credes 1997, p.353)

In other words the Internet has facilitated information sharing which have prevented rates of returns from being different geographical areas from diverging to greatly from each other (Solomon 1997). This is consistent with Shailendra J. Anjaria of the IMF (1997) attributing the rapid growth in capital flows as a result of advances in technology.

While it is difficult to capture statistically the increase in capital mobility due to its effect taking place in the tail end of the data sample and to poor data quality, the geographical situation, i.e. the long, open and porous border shared by both countries, and legal environment, i.e. the 1950 Treaty of Trade and Transit guarantee no legal restrictions on the flow of capital between both countries, make it reasonable to conclude that capital mobility is increasing in NIMA as financial development and information teachnology has increased in Nepal.

Implications

As capital mobility increases in NIMA, maintaining the existing exchange rate and monetary policy, i.e. the status quo in Nepal suggests it being more costly as the MA is slowly becoming inconsistent. In other words, NIMA is slowly approaching the conditions of the *unholy* trinity. If the experiences of BW, ERM and ACC are any indication, then there is growing potential for a financial crisis in NIMA. Specifically, the chance for a financial meltdown in Nepal is increasing if the status quo is maintained even in the new environment.

A Caveat

In the middle of 1998 India, and subsequently Pakistan, exploded nuclear bombs with an international backlash and negative economic fall out. This has caused the Indian Rupee to depreciate significantly vis-a-vis most major currencies and has made risk averse investors in NIMA reduce the flow of funds. This suggests that at present the problems of an

inconsistent system are postponed although at present NIMA has a great opportunity to address the inconsistency.

CONCLUSION

The *unholy* triad indicates inconsistency in a MA which, if not addressed, ends in a crisis, some examples are the breakdown of BW, ERM and ACC. The higher level of financial development and the increasing financial information dissemination suggest that capital mobility between Nepal and India is increasing. This implies that NIMA is becoming inconsistent where maintenance of the status quo may lead to speculative attacks and financial crisis. To bring back consistency into NIMA a policy recommendation is given to Nepal on subverting one leg of the *unholy* triad.

One possible avenue is to address the leg of independent monetary policy vis-a-vis the external sector which usually results from the spill over of the fiscal authority onto monetary policy, i.e. with the need to monetize the budge deficit. This potential problem has been recognised by His Majesty' s Government when Article 49 in Budget Speech of HMG/N for the Fiscal Year 1997/1998 says:

"Due to the reason that His Majesty's Government itself being not able to adhere to fiscal discipline, overdrafts taken unrestrictedly in the past years have caused negative impact on national economy. Therefore, the necessary bill limiting His Majesty's Government's authority to issue overdraft not exceeding one billion rupees from Nepal Rastra Bank will be soon introduced to this august House. Ministry of Finance will adhere to this principle from the very beginning of the next fiscal year."

However, insulation the NRB from the fiscal authority is difficult to address immediately due to ingrained human relations. A second possible avenue may be to limit the growth of capital mobility, however, the open and contiguous border between Nepal and India suggest that implementation will be difficult if not impossible. A final possible avenue may be to change Nepal's pegged exchange rate policy with India. Making the exchange rate fixed is consistent with Optimum Currency Area theory which suggests that Nepal is a suitable for a fixed exchange rate with India (Maskay 1998a).

While the extreme version of a fixed exchange rate, a single currency, i.e. replacing the Nepalese currency with the Indian currency, may not be preferable on nationalist ground (Tower and Willett 1970), this option may be operationalised via a quasi-currency board. A quasi-currency board is similar to a conservative currency board since there exists a constitutional

commitment to defend the fixed exchange rate (Williamson 1995). In this case the Nepalese currency would be retained but are required to be fully backed by the Indian currency. However, a quasi-currency board allows some role for the monetary authority such as bank supervision, the ability to conduct some Open Market Operations such as in Hong Kong, where the Hong Kong Exchange Fund has the ability to issue three month treasury bills and open a discount window, or even for a more active role such as in Singapore and Estonia (Bennett 1994). Thus, a quasi-currency board, in my view, is a reasonable solution to eliminate the specter of the *unholy* triad for the Nepal-India system, however, it is by no means the only solution.

To reiterate, the main goal of this paper is two fold: first, to point out the problem of increasing capital mobility and second, to act as a catalyst for debate on changing the present status quo in the monetary arrangement between Nepal and India and the potential financial crisis which would result from the *unholy* trinity.

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