NRB Working Paper

A Study of the Trends in the Nepalese-Indian Currency Exchange Rate during the Period of 1932–1960

Characteristics of Flexible Exchange Rates, Dual Currency and Episodes of Political Uncertainty

Nephil Matangi Maskay

NEPAL RASTRA BANK, RESEARCH DEPARTMENT

AUGUST 2007

NRB Working Paper

Research Department

A Study of the Trends in the Nepalese-Indian Currency Exchange Rate during the period of 1932–1960

Characteristics of Flexible Exchange Rates, Dual Currency and Episodes of Political Uncertainty

Prepared by Nephil Matangi Maskay *

August 2007

Abstract

A potential problem that developing countries face with globalization is the choice of appropriate exchange rate policies due to increasing use of multiple currencies. In this context, the study of the Nepalese experience in Nepalese Currency (NC) exchange rate vis-à-vis the Indian Currency (IC) over the period 1932 - 1960 is useful since it conveys an idea on the trends in the NC-IC exchange rate in an environment characterized by a flexible NC-IC exchange rate, dual currency of partial IC-ization in Nepal and the episodes of political uncertainty in the region. Examination of the NC-IC exchange rate suggests that in the early period, imbalance of the balance of payments drove the exchange rate. In the later period with expansion of NC circulation, substitution between both currencies resulted in an unstable exchange rate. Nepal's choice for a fixed exchange rate in April 1960 with full convertibility with the IC along with supporting government policies, has contributed significantly to help stabilize confidence in both the domestic currency and in the NC-IC exchange rate, and facilitated for the elimination of the dual currency period in 1964 in the country.

3

Contents

I. INTRODUCTION

Globalization has resulted in greater flows of both trade and capital which in turn have facilitated the process of world economic integration. However, for many emerging economies, this process of globalization has coincided with a period of painful structural adjustments and political instability. In this period of uncertainty, there has been increasing presence of third currencies in the domestic economy, especially as a store of value.[1] This situation of partial dollarization has made the choice of the appropriate exchange rate regime problematic as a misstep can increase the probability of destabilization in the money demand. While there is some consensus on the necessity of an appropriate exchange regime for currency stability in a period of dual currency, this paper argues, through an examination of the experience of Nepal's exchange rate vis-à-vis the Indian currency during the period 1932 – 1960, that it is legitimate to conclude that appropriate exchange rate is a necessary, but not a sufficient condition. The programs of government supporting the domestic currency are also essential.

Nepal is a country located in South Asia. The country is roughly rectangular in shape and lies on the southern lap of the Himalayas.

While it geographically borders the two countries of India and China, the harsh and foreboding Himalayan mountain range to the north in contrast to the open terrain to the south along with east and west border, has brought it under greater Indian, than Chinese, influence. This influence has resulted in a close relationship with India that can be traced back thousands of years. It can be seen in the shared cultural heritage as well as in the similarity also of language and life styles.

Source: http://ncthakur.itgo.com/map.htm

Given the close ties between Nepal and India, it is not surprising that there has also been a close economic relation between the two countries. Since time immemorial trading has been going on in the South Asian region. During the early past of the Shah historical period that commenced in 1768, Nepal's trade largely occurred with India.[2] This resulted in mutual use of Nepalese Currency (NC) and Indian Currency (IC) especially along the border regions. Interestingly, excepting the period of 1932 – 1960, the history of NC-IC

---

[1] For example US Dollar in Brazil, Philippines and Euro in Eastern Europe etc.

[2] This reality for Nepal did not change but in the last quarter century where the trade with India had diminished from approximately 100% to 61.3% of Nepalese foreign trade in the 2004/2005 fiscal year (*Economic Survey* of Government of Nepal, Ministry of Finance, 2005/2006). At this stage, mention should be made that trade with Tibet <u>did</u> occur however, due either to inherent barter system and perhaps data   collection problems in the later period; this was not accurately reflected in the available trade statistics.

exchange rate since 1877 has been quite stable (Maskay, 2000).[3] This period (1932 – 1960) of NC-IC exchange rate instability, is the subject-matter of this study. The study is undertaken with a view to examining the economic conditions prevailing at that period and then making generalizations to obtain factors that fostered both the stability and instability in the exchange rate experience.

This paper is organized as follows. The next section discusses the situational characteristics of Nepal during 1932 – 1960. The third and fourth sections provide discussion on two models of the exchange rate: the traditional models and the model of currency substitution, and then proceeds with an examination of the trends in the exchange rate experience of NC vis-à-vis IC during the aforementioned period. The fifth section provides discussion on how those models can facilitate explanation on NC-IC exchange rate performance. The last section summarizes and concludes.

II. NEPAL DURING 1932 - 1960: SITUATIONAL CHARACTERISTICS

This section discusses some important factors which had impact on the NC-IC exchange rate viz. the exchange rate, dual currency situation and political instability prevailing in the period 1932 – 1960. It is important to note that Nepal experienced a number of significant changes during the period of 1932 – 1960. For example, Nepal had been closed to the external world prior to 1951. With the shift in political regime from the autocratic Rana rule to that of the democratic rule in 1951 Nepal had opened itself up to the outside world and also liberalized the economy.

As stated above, the purpose of this paper is to examine the exceptionally unstable and changing period of NC-IC exchange rate which straddle the historic year of 1951. This period indeed marked a dynamic phase in Nepalese currency exchange situation; the following three groups of facts delineate the characteristics of the period:

- *There existed a flexible exchange rate between NC and IC* - A flexible, market determined exchange rate, free of government control, existed between the NC and IC which was operated by private individuals until 1960. This foreign currency exchange market reflected the expected relative value of the two currencies, which was determined by the supply of and demand for each currency created by money changers.[4] These money changers were located mainly in Kathmandu, the capital of Nepal, and in some other major trading areas. The exchange of currency between NC and IC (or vice versa) was thus made reflective of market sentiments.

- *Both the NC and IC were circulating in Nepal; this situation can be described for Nepal as a dual currency period of partial IC-ization* - The dual currency period of partial IC-ization in Nepal resulted from the open and contiguous border with significant trade interaction and linkages between Nepal and India. Not surprisingly,

---

[3] Prior to 1932 there had existed metallic currency circulating in Nepal whose value against IC had been fixed in 1877 by the then Rana Prime Minister Ranoddip Singh at 128 NC for 100 IC (Hamal, 1994, p. 173). This exchange rate had remained constant up to 1932. Likewise, the NC-IC exchange rate during 1960 – 2002 was quite stable which saw only seven adjustments in the exchange rate and whose last adjustment, a revaluation, occurred on February 1, 1993.

[4] These were popularly known at that time as *Tankadharias* or *Sarafis*.

the currency situation was influenced by geography: while in regions outside of Kathmandu the IC prevailed, in Kathmandu the NC was dominant (from now on this period covering 1932 - 1955 is simply called stable currency area). In other words, within Nepal there were stable areas of both IC and NC. The environment of distinct currency areas in the country was facilitated by unequal financial sector development; specifically this was relatively more so in Kathmandu vis-a-vis outside Kathmandu[5,6] This made access to NC outside the Kathmandu valley more difficult.[7] This situation changed in the later period from 1955 with the establishment of the Nepal Rastra Bank, the Central Bank of Nepal. The NC currency area was purposively **expanded** with the aim to increase NC circulation encompassing the whole country (from now on this period of 1955 - 1960 is simply called expanding currency area).

- *There were episodes of political uncertainty in the region which hit both Nepal and India alike* – The disturbing global situation of the late thirties and the actual outbreak of the Second World War epitomized the political instability in the world. The end of the War signaled a threat to the then Rana regime in Nepal as the internal disturbances fueled by democratic forces were erupting unmistakably. In 1950 the regime shift from the autocratic rule of the Rana regime and a return to the Shah Dynasty with relatively liberal politico-economic system, brought in its trail instability in the new multi-party form of government.[8] Similarly, India achieved independence from Great Britain in 1947 but over the years this truncated country experienced tremendous challenges of revolutionary change, especially in relation to Pakistan.

These three characteristics describe the situation in Nepal during the 1932 - 1960 period. It should be reiterated that these characteristics, by no means remained absolutely constant during their time but they also changed. For example, the stable IC and NC currency areas in Nepal changed in the later part of the 1950 with NC expansion targeting to encompass the whole country.

---

[5] The first private financial institution, Nepal Bank Limited, was established in 1937 with the only other major commercial financial institution, Nepal Industrial Development Corporation, established in 1957 initially as the Industrial Development Board, but converted in 1959 to its present form. It should be noted that technically the first legal financial institution in Nepal was the establishment of the *Tejarath Adda* in 1877, however it faced problems catering to the general needs of the population as it had the sole objective of providing credit only, with no deposits mobilized (NRB, 1996).

[6] While the lack of national income data precludes the standard measure of monetization, an alternative proxy is taken from the perspective of number of financial institutions existing at that time. Nepal had 400,000 persons per bank branch while it was 4,000 and 70,000 for UK and India respectively. Additionally, the per capita deposit at that time in Nepal was NRs. 8, or less than a dollar, compared to 367 dollars for UK and 9 dollars for India (NRB, 1961). In other words, this information suggests that there existed low financial development in the country.

[7] While this situation suggests why the dual currency situation persisted for so long, a contrary explanation is given by Pant (1964, p.36) who states that "because of their (Rana's) investment and bank deposits in India, the Rana's found the dual extremely convenient and made no effort to unify the Nepalese currency." In other words, this dual currency period facilitated the capital flight of the Rana's from Nepal to India.

[8] This instability is reflected in the frequent government changes which, in addition to two interim governments, an advisory council and caretaker ministry, there were five governments in total. For an overview, see Aryal and Dhungyal (1975).

III. Some models of exchange rates

The above-mentioned situational characteristics provided in the last section suggest that the Nepalese financial environment at that time can be examined via two broad categorizations of: (1) stable NC and IC currency areas and (2) unstable and changing currency areas, specifically with expansion of the NC in the mid-1950's. The description of stable and expanding currency areas can be linked to stable and unstable currency/money demand: a stable currency area has stable demand with one currency in circulation; in contrast an expanding currency area has one currency attempting to dominate another currency with more than one type of currency in circulation; in that environment the currency demand is the sum of individual currency demand making the aggregate currency demand unstable due to substitution of currency. This link is important to determine the appropriate model in that environment.

The prior part of NC-IC exchange rate movement in an environment of stable currency areas can be explained through traditional models for exchange rate determinations; such as Purchasing Power Parity model, the monetary model, the Dornbush over shooting model and the portfolio balance model. For the country situation, Maskay (2001) had discussed each model in turn and identified the monetary model of exchange rate determination as suitable for Nepal, especially during the recent period. The basis of the monetary model is the conventional money (domestic and foreign money) demand function given as $\vartheta m - p = \eta y - \sigma r$ and $\vartheta m^* - p^* = \eta y^* - \sigma r^*$ where m and m^* represent natural logs of domestic and foreign money supply, y and y^* represent natural logs of domestic and foreign output, r and r^* represent natural logs of domestic and foreign interest rate respectively. The specific model as well as models in general can be generalized at the most basic through a simple model of the foreign exchange rate, elaborated in a number of textbooks such Pilbeam (1998) and applied to the Nepal case by Maskay (2000), which is driven by demand for and supply of currency. That is, imbalance of the Balance of Payments (BOP) affect the price of NC which is the outcome of the supply and demand in the foreign exchange market; with the demand for NC as demand by foreigners for domestic production. For example, if there is greater demand than supply of NC, this would cause the NC to appreciate in the NC-IC exchange rate etc. This simple description of the foreign exchange market is plausible for Nepal at that time, also because the low level of financial development limits the amount of capital account transaction with most of the transaction being in the current (trade) account.

The later part of NC-IC exchange rate movement - in an environment of unstable and changing currency areas - can be explained by models of currency substitution and instability in currency demand. Currency substitution essentially refers to a situation in which foreign assets are used as money (essentially as means of payments and unit of account).[9] In other words, the basis for these models is on currency demand which ultimately is seen in the exchange rate. An example of a currency substitution model is put forward by Berg and Borenztein (2000, p.6-7) which starts with the convenient form $m^s = \alpha m + (1 - \alpha)(e + m^*)$ where m^s represents the logarithm of the total money supply in the economy, m and m^* denote the logarithms of the domestic and foreign components of

---

[9] For a nice introductory review on the topic of currency substitution see Calvo and Vegh (1992).

money, respectively, and *e* stands for the logarithm of the exchange rate. The authors derive a model[10] and conclude that currency substitution increases exchange rate volatility due to the interaction between the money supply and the exchange rate.

IV. TRENDS IN THE NC VIS-À-VIS THE IC EXCHANGE RATE DURING 1932 - 1960

The dynamic characteristics of the exchange rate during the period 1932 – 1960 of stable and expanding currency areas are described by characteristic shifts in the trends of the NC-IC exchange rate. The data on NC-IC annual average exchange rates are shown below graphically for the period 1927 - 1965[11]:

NC-IC Exchange Rate Movement 1927-1965
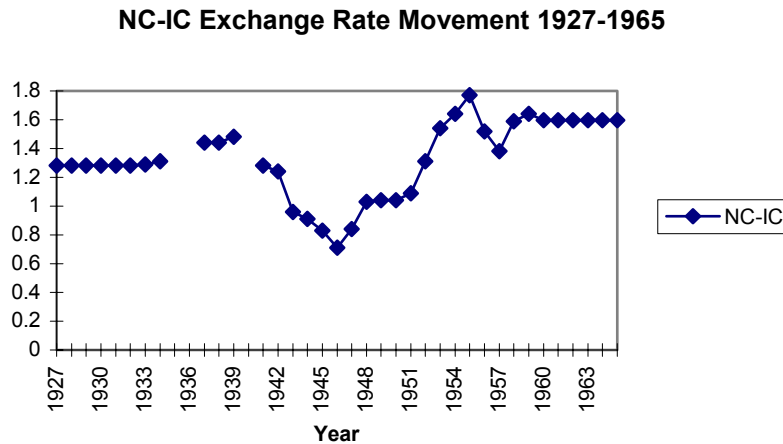
Note: 1. The data are annual averages and are obtained from Pant (1964) for 1926 - 1956. 2. Data for years of 1935, 1936 and 1940 are not available. 3. The data are obtained from *Quarterly Economic Bulletin* of NRB for 1960 - 1965.

The pattern of trends in the annual averages of the NC-IC exchange rate was both upward and downward in direction. In the first period of stable currency areas three distinct sub-periods of NC-IC exchange rate trends, viz. the 1932 - 1939 period of NC depreciation[12] in NC-IC exchange rate (from now on simply called "depreciation"); the 1939 - 1946 period of appreciation (from now on simply called "appreciation"); the 1946 - 1955 period of depreciation; can be discerned while the period of expanding currency areas showed a mixed trend during 1955 - 1960. The categorization from the "eyeballing" has also given some statistical support to the description of the above trends. The table below captures this point:

---

[10] The author start from this conventional representation and derive their final equation which is provided as $m_t - p_t = -(\eta + (1-\alpha)k)(E(e_{t+1}) - e_t) + \theta y_t + v_t$ where *v* represents the consolidated random shock affecting the money market.

[11] Data for the longer is provided to highlight the rigid vs. flexible NC-IC period of 1932 - 1960. For details, see the first appendix.

[12] Depreciation is defined as a weakening of the currency and vice versa for appreciation - e.g. from 1932 to 1933 the NC-IC exchange rate depreciated from 1.28:1 to 1.29:1.

Table 1

	1932 - 1960; Full Period		Stable Currency Areas					Expanding Currency Areas
			1932 - 1939; Depreciation		1939 - 1946; Appreciation		1946 - 1955; Depreciation	1955 - 1960; Mixed
# Depreciation	14	56%	4	80%	0	0%	8	89%	2	40%
# Appreciation	9	36%	0	0%	6	100%	0	0%	3	60%
# Constant	2	8%	1	20%	0	0%	1	11%	0	0%
Total	25	100%	5	100%	6	100%	9	100%	5	100%

Note: as above

These classifications are consistent with the direction of the exchange rates.

However, having given a general breakdown of the 1932 – 1960 period in four "trend" patterns: three in the first category of stable currency areas with the remaining in the last category of expanding currency areas; the paper then discusses the important factors which influenced the trends observed in the exchange rate. In the period of stable currency areas there are three distinct sub-periods:

The first sub-period of 1932 - 1939 experienced a depreciating trend. Out of five annual exchange rate changes during this period, four show depreciations and only one shows constant exchange rate.[13] This reflects an increase in volume of imports resulting from the liberalization of import restrictions by Prime Minister Juddha SJB Rana in 1932.[14] The Prime Minister had removed the ban on a large number of import items like motorcars, radio sets and alcoholic beverages.[15] Furthermore, there was a spurt in imports from India in 1933 to support reconstruction works resulting from the devastating earthquake in Kathmandu. These factors led the trade account into deficit and resulted in relatively higher demand for IC vis-à-vis NC in the foreign exchange market. The resultant current account deficit led to imbalance in the BOP situation and resulted in the depreciating trend of the NC-IC exchange rate.

The second sub-period of 1939 - 1946 saw continuous trend of appreciation of NC vis-à-vis IC exchange rate; this was reflected in four out of five annual exchange rate changes with only one remaining period showing constant rate.[16] This probably reflected the loss of confidence in the British currency and thus in the IC, in line with events of World War II (India, at that time, was part of the British Empire). For example, Shrestha (1966, p. 179) states:

> "On the eve of Poland's surrender, market exchange rate was Rs. 155 while in the following days when Poland's surrender was heard, a great panic was believed to have precipitated in the market and the people were rushing to the bank and shroffs to dispose of their paper currency even at the rate of Rs. 125 under an impression that British paper

---

[13] The data for 1935 and 1936 are not available.

[14] As Nepal uses its own calendar based on lunar movements, the reign of Prime Minister Juddha SJB Rana commenced in 1989 BS which converts to approximately 1933 AD.

[15] The movement in the exchange rate also reflected the heavy imports of arms and ammunitions from India on public account (Hamal, 1994).

[16] The data for 1940 is not available.

currency would soon turn out to be useless…As a result, the value of paper currency
touched its bottom at Rs. 59 for some time."

This sub-period was characterized also by great difficulty with both imports from India
due to shortage of supplies resulting from World War II (Hamal, 1994, p. 136) as also
with difficulty of imports from foreign countries.[17] Additionally, with the dramatic rise in
the price of silver in India a substantial quantity of NC, which was cast in 100% silver,
was melted or exported to India, causing its shortage in the Nepalese currency markets
(Rawat, 1974, p. 136). Further the remittances of the Nepalese Gurkha soldiers employed
in the India army constituted an increase in supply of IC in the foreign exchange market.
All these factors led to an increase in supply of IC without a commensurate increase in
demand for IC in the foreign exchange market (i.e. a surplus in the BOP), leading to the
appreciating trend in NC in the NC-IC exchange rate.

The third sub-period of 1946 - 1955 saw almost continuous depreciation of NC-IC
exchange rate with eight of the nine changes being depreciation while the remaining
having seen no change in the annual exchange rate. This long sub-period of almost a
decade can be broken down into two distinct sub-periods with the political regime shift in
1951 as the dividing line. One was the period from 1946 – 1950 when depreciation was
about 9% annually.[18] Another period was 1951 – 1955 when depreciation accelerated and
was 14% annually. The initial sub-period of gradual depreciation may partially be
attributed to the commencement of issue of one-rupee NC notes in 1945 by *Sadar
Mulukikhana Adda* of Nepal in response to the loss of metallic coins to India where the
price of silver had skyrocketed. This first sub-period also saw a gradual depreciation of
NC-IC driven by a relative increase in demand for IC resulting from heavy import of
commodities in Nepal during 1947. Furthermore, the decreased Gurkha remittances with
the end of World War II further exacerbated the scarcity of IC in the foreign exchange
market. During the later sub-period, there occurred a period of sharp depreciation driven
by the large private capital outflow (i.e. capital flight) of the ruling Nepali families to
India. Furthermore after the regime shift in 1951 the new government had expenditures
far outstripping revenue with the government deficit being monetized and the Nepalese
Government "printing currency notes for direction less operations and so inflation
became rampant." (Rawat, 1974, p. 137). Both these factors led to imbalances in the
country's BOP, and caused increase in demand of the IC vis-à-vis supply of the NC in the
foreign exchange market, which resulted in the accelerated trend in depreciation of the
NC vis-à-vis the IC.

In the period of expanding currency areas during the sub-period of 1955 - 1960, mixed
performance of NC in NC-IC exchange rate was observed; two of the five exchange rate
changes being "depreciations" while the remaining being "appreciations". The annual
frequency of the exchange rate hides its volatility since there were daily changes in the
exchange rate (Pant, 1964). This period also coincided with the accession in February

---

[17] This is a derived demand for IC since Nepal did not have a separate foreign exchange account from India
and thus obtained non-IC foreign exchange from RBI on payment of IC. Thus, reduction in imports from
third countries meant reduction of demand for IC.
[18] This is simply computed as the percentage difference between the first and last year and divided by the
number of years.

1955 of Late King Mahendra Bikram Shah. Importantly for Nepal's financial history, this period coincided with the enactment of the Nepal Rastra Bank (NRB) Act of 1955 and subsequent establishment of the central bank in the following year. This sub-period followed various programs by NRB to stabilize the exchange rate, such as, the exchange rate subsidy program of 1956 – 1957 etc and was characterized by an active policy to both extend the circulation of NC and eliminate the use of IC in Nepal.[19] The programs to stabilize the exchange rate ended in 1960 when:

> "HMG declared NC fully convertible into IC at the rate of IRs. 100 for NRs. 160... At the same time, IC accounts maintained by HMG with the Bank were converted into NC accounts. All internal dues, except those under contracts and royalties, payable to HMG, were collected in NC only and all internal disbursement of HMG were also made in NC only all over the country... An Act passed in 1957 with a view to extending circulation of NC was enforced...it made non-acceptance of NC in any kind of transaction illegal."
> (NRB, 1961, p.6)

These actions by the NRB lent confidence to NC and stabilized NC-IC exchange rate. It should be emphasized that while the convertibility of NC to IC at a fixed exchange rate regime allowed expectations to stabilize,[20] it was also accompanied by the policy to limit government expenditures and increase government collection (elaborated in Maskay (2002)). It is also interesting to note that the government promulgated an Act in 1960 to control foreign exchange transaction whereby transaction of foreign exchange was regulated through authorized dealers "who must act under the general or special rules or orders laid down by the Nepal Rastra Bank" with foreign exchange transactions, other than with authorized dealers, being "prohibited" (NRB, 1961). Also, to facilitate NC-IC exchange, the NRB opened its branches in different parts of the country which, by July 1960, included 3 branches, 5 sub-branches, 9 exchange depots and 1 exchange counter along with a number of *Ghumti* (mobile) counters (NRB, 1961 and 1996). These measures increased the circulation of, and the confidence in, the NC ultimately resulting in limitation of the volatility of NC-IC exchange rate movement.[21]

V. DISCUSSION ON NC-IC EXCHANGE RATE EXPERIENCE OF 1932 - 1960

The preceding section presented trends of NC-IC, this section elaborates on its movement and context. It can be seen that the choice of the appropriate model for policy makers - e.g. the period of stable currency areas (1932 – 1955) and expanding currency areas (1955 – 1960) - helps in providing the appropriate policy action to minimize volatility in the NC-IC exchange rate.

It is observed that during the 1932 - 1960 period, the domestic capital account was *de facto* liberalized with India (e.g. there were large number of the money changers existing in Nepal at that time (Pant, 1964) which suggest that NC could be freely converted into

---

[19] For a detailed discussion see Maskay (2002).

[20] This conclusion is similar to Berg and Borenszten (2000), Tandon and Wang (2006) as well as Maskay (2002).

[21] While no explicit data are available, the double-digit growth of NC money supply during the period accompanied by insignificant inflation suggests that a large part of the money supply growth was absorbed by substitution of IC for NC (NRB, 1961). The other source of non-inflationary monetary growth may be the monetization of the economy.

IC and vice versa). In this regard individuals (speculators) had played a significant role for the volatility in the NC-IC exchange rate. When individuals felt that the value of the currency did not coincide with their expected value, currency speculation occurred. While this may be viewed as a contributing factor to the instability in the foreign exchange market especially in the later 1956-1960 period, it is observed that speculators tended to push the exchange rate towards an expected market equilibrium value, and thus appeared to have been stabilizing. This was especially the case after the advent of democracy in 1951 when the Nepalese government introduced measures for exchange rate stability which placed the exchange rates far different from the rates determined in the market.[22]

Likewise both India and Nepal experienced similar episodes of political uncertainty, i.e. "noise" levels, which corrupted the quality of information, during the period of 1932 – 1960, although the relative "noise" appears to have driven the exchange rate in the 1932 – 1955 periods. These relative "noises" impacted on the foreign exchange market and drove the supply and demand of NC and IC; however; it was the larger "noise" which impacted on the NC-IC exchange rate, as discussed earlier. This was most clearly reflected in the exchange rate movement during World War II where news of victory/defeat drove the exchange rate. This atmosphere of low quality information may have contributed to the absence of exchange rate crisis, since this makes the financial environment very noisy.

VI. SUMMARY CONCLUSION AND A CLOSING OBSERVATION

The paper has examined the trend of the NC vis-à-vis the IC exchange rate over the period 1932 - 1960. The period was characterized with a flexible NC-IC exchange rate, dual currency of partial IC-ization in Nepal and the episodes of political uncertainty in the region. Examination of the exchange rate trends suggests that the early period can be explained by traditional models based on imbalance of the balance of payments driving the exchange rate; however in the later period with expansion of NC area, explanation can be provided by the model of currency substitution. It is concluded that accurate identification of the situation provided appropriate policy for ending the period's exchange rate instability namely: the decision on April 1960 for full convertibility with the IC at a fixed exchange rate, along with supporting government policies. This had contributed to help stabilize confidence in the domestic currency and in the NC-IC exchange rate.

This situation from the past has important lessons for the future directions of Nepal's exchange rate policy. Presently, there is a significant presence of IC in Nepal; while there are no official figures for the amount of IC in circulation in Nepal, Sharma (1998) has estimated the presence of IC to be 40.72% of the overall business transactions in Nepal.

---

[22] For example, the Nepalese government attempted to stabilize the exchange markets through the Exchange Rate Subsidy Program of 1956 - 1957. However, the targeted NC-IC exchange rate was much over-valued in terms of the market determined rate. The NC-IC exchange rate set by the Nepalese government was 128 NC for 100 IC but the average exchange rate determined by the market forces was 142 NC for 100 IC in 1956/57 and 147 NC for 100 IC in 1957/58 (Pant, 1964, p. 169). This problem led the Exchange Rate Subsidy Program to eventually come to an end after having "transferred" over 20 million IC of the NRB reserves to private ownership.

This similarity with the characteristics of the mentioned period suggests that the move to flexible exchange rate with an objective of having an independent NC currency area in the country may result in exchange rate volatility, as in the past. By closing it is observed that the crucial difference between the past period and the present lies in the significant increase in the level of financial development in Nepal as well as the possibility for having greater capital account convertibility. In contrast to the 1932 - 1960 period with only a handful of institutions (NRB, 1996), there are presently over 200 institutions participating in Nepalese financial activity along with significant technological changes. With this change in economic environment there is a reduction in the "natural" capital controls and thus a propensity for exchange rate crisis. While the final outcome is hard to determine, it is felt that the present situation of political fluidity in Nepal does not make it appropriate to consider greater flexibility in the exchange rate regime at this moment.

By ending it is observed that the future is dynamic - this has implication for policy where an optimal policy which had made sense in the past may not be so in the present or the future. With this in mind it is important for the NRB to actively monitor developments in both Nepal and India to ensure that the country has an appropriate and timely NC-IC exchange rate policy.

REFERENCES

Aryal, Ishwar Raj and Tulsi Prasad Dhungyal. *A New History of Nepal.* Kathmandu : Sangam Press. 1975.

Berg, Andrew and Eduardo Borensztein**.** "The Choice of Exchange Rate Regime and Monetary Target in Highly Dollarized Economies." *IMF Working Paper*. **WP/00/29**. (2000)

Calvo, Guilliermo A. and C. A. Vegh. "Currency Substitution in Developing Countries: An Introduction." *IMF Working Paper*. **WP/92/40**. (1992)

Government of Nepal, Ministry of Finance. *Economic Survey,* Kathmandu, Nepal : (various isses).

Hamal, Lakshman B. *Economic History of Nepal: From Antiquity to 1990.* India : Ganga Kaveri Publishing House. (1994).

Maskay, Nephil Matangi. *The Exchange Rate Policy of Nepal vis-à-vis the Indian Currency.* Nepal : Nepal Foundation for Advanced Studies. (2000).

Maskay, Nephil Matangi. "Economic Factors Influencing the Probability of Adjustments in Nepal's Exchange Rate Policy with the Indian Currency; A Binomial Probit Analysis for the Period of 1976 - 1998." *Economic Review (of Nepal Rastra [Central] Bank).* **Occasional Paper Number 13** (March 2001) 35 - 49.

Maskay, Nephil Matangi. "Nepal's Experience for Currency Unification; An examination of exchange rate performance for the Nepalese vis-à-vis Indian currency with special reference to the period of 1956 - 1960." *Contributions to Nepalese Studies (a publication of Centre for Nepal and Asian Studies, Tribhuvan University, Kathmandu, Nepal).***Vol. 29, No. 16** (January 2002) 33-49.

Nepal Rastra Bank. *Report of the Board of Directors to His Majesty's Government for the Fiscal Years: 1957-58, 1958-59, 1959-60 and 1960-61*. (1961).

Nepal Rastra Bank. *Report of the Board of Directors to His Majesty's Government for the Fiscal Years: 1961-62, 1962-63, 1963-64 and 1964-65*. (1965).

Nepal Rastra Bank. *40 Years of Nepal Rastra Bank.* Kathmandu, Nepal : (1996).

Nepal Rastra Bank. *Quarterly Economic Bulletin,* Kathmandu, Nepal : various issue.

Pant, Pushkar Nath. (1964) *The Dual Currency System in Nepal.* Unpublished Dissertation at Vanderbilt University.

Pilbeam, Keith. *International Finance 2nd edition.* Hong Kong : Macmillan Press Ltd. (1998).

Rawat, P. C. *Indo-Nepal Economic Relations.* India: National Publishing House. (1974).

Sharma, Yadav Prasad. Demand for Money in Nepal: 1965 - 1994. Unpublished Dissertation. Banaras Hindu University. (1998).

Shrestha, B. P. *An Introduction to Nepalese Economy.* Kathmandu : Ratna Pustak Bhandar. (1966).

Tandon, Ajay and Yong Wang. "Confidence in Domestic Money and Currency Substitution". Economic Inquiry. Vol. 41, No. 3 407 - 419. (2006).

Tuladhar, Sugat Das. *The Problem of Currency, Exchange and Banking in Nepal.* Kathmandu: Nepal Press. (1955).

APPENDIX 1

Annual data on the NC-IC exchange rates covering the span of the NC-IC data stream for the period 1926 - 1965:

NC-IC Exchange Rates: 1926 - 1965

Year	NC-IC			Year	NC-IC
1926	1.28	**1940**	NA	**1953**	1.54
1927	1.28	**1941**	1.28	**1954**	1.64
1928	1.28	**1942**	1.24	**1955**	1.77
1929	1.28	**1943**	0.96	**1956**	1.52
1930	1.28	**1944**	0.91	**1957**	1.38
1931	1.28	**1945**	0.83	**1958**	1.59
1932	1.28	**1946**	0.71	**1959**	1.64
1933	1.29	**1947**	0.84	**1960**	1.5975
1934	1.31	**1948**	1.03	**1961**	1.5975
1935	NA	**1949**	1.04	**1962**	1.5975
1936	NA	**1950**	1.04	**1963**	1.5975
1937	1.44	**1951**	1.09	**1964**	1.5975
1938	1.44	**1952**	1.31	**1965**	1.5975
1939	1.48				

NOTE:

1. Data are obtained from Pant (1964) for 1926 - 1959.

2. Data for 1935, 1936 and 1940 were not available.

3. Data are obtained from *Quarterly Economic Bulletin* of the NRB for 1960 - 1963.

Summary Statistics:

The summary statistics of the NC-IC data are given below:

	1932 - 1960; Full Period	1932 - 1939; Sub-Period: Depreciation	1939 - 1946; Sub-Period: Appreciation	1946 - 1955; Sub-Period: Depreciation	1955 - 1960; Sub-Period: Mixed
Average	1.276827	1.373333	1.058571	1.201	1.582917
Median	1.3	1.375	0.96	1.065	1.59375
Standard deviation	0.289824	0.089368	0.278414	0.350886	0.129349
Volatility	0.226987	0.065074	0.263009	0.292162	0.081715

Note: Volatility is the ratio of standard deviation to average.