

TRADE POLICY AND EXPORT PROMOTION: AN ANALYSIS OF DEVALUATION

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EXECUTIVE SUMMARY

This paper addresses the role of devaluation in export expansion. Devaluation provides an edge in export earnings augmentation by reducing the relative price of exports. The balance of trade improves in response to devaluation if the sum of the elasticity's of demand for export and elasticities of demand for imports exceeds unity. There are different aspects that require analysis to highlight the role of devaluation in export expansion. The J-curve phenomenon looks into the lags in export expansion due to various rigidities. A theoretical analysis on J-curve is given to provide a clue for this delay in response. However, due to lack of quarterly data on many pertinent variables, empirical analysis could not be carried out on J-Curve experience in Bangladesh.

The correct alignment of bilateral exchange rate depends on the movement of REER. Theoretical discussion on REER and the calculation procedure in Bangladesh clears ambiguity in estimation. The role of REER in proper alignment of exchange rate is stressed through the correspondence between REER and the observed exchange rate.

An analysis is also carried out to show the link between devaluation and inflation. The long run effect depends on several factors. The policy environment as well as law and order situations dominate in this effect.

No doubt, correct alignment is a precondition of export augmentation. Erratic fluctuation and jittery in exchange rate market may trigger manifold distortions in proper functioning of the economy. An import dependent country experience inflationary pressure and thus value added may be squeezed when bulk of raw materials are imported. Besides devaluation, enabling environment may spur growth in export earnings. This is more prominent in Bangladesh. A set of pragmatic policies pursued by government is outlined in sixth section to emphasise that enabling environment is more important than devaluation episode. Response in export earnings to given stimuli is shaped by the cross-firm dispersion in unit production costs, the extent of product differentiation and critically the prevalence of previous exporting experiences.

Trade Policy and Export Promotion: An Analysis of Devaluation

Export Scenario

Trade policy is the cornerstone in pursuance of viable trade options in line with the resource endowment of a country. Export promotion measures usually explore the comparative cost advantage on which the export trade is mainly anchored. A careful review of the export performance during 1981 to 1999 manifests that favourable international trade climate and domestic resource endowment played a very important role in the determination of trend as well as relative weights of different products in export trade in Bangladesh. Raw jute, jute goods, tea and unprocessed leather provided bulk of export earnings during 1972 to 1986 and accounted for about 70 percent of the export earnings. There was a shift in trend as well as in the commodity composition in export after 1985. The traditional items such as raw jute and jute goods lost market due to the introduction of several polymer items mainly synthetics that reduced the demand for jute substantially. Earnings lost from traditional items was subsequently replaced by non-traditional items such as ready-made garments, vegetables and fish specially shrimps.

The experience of Bangladesh in export earnings is profound. For the last few years the export performance tells a story which manifest spectacular changes both in quantitative and in qualitative dimension. The export structure manifested a topsy-turvy syndrome over the period 1972/73 to 1998/1999. Both in nominal and real terms, the export earnings registered a monotonic increase. The non-traditional items in value terms carries much weight in total earnings and a definite decline in the share of traditional items are observed

Bangladesh's total export earnings at current market prices depicted a deceleration only during the period 1982 and 1985. However, in the subsequent years sustained rise in export earnings put the economy in a buoyant position. Export earnings stood at US \$ 934m during 1984 rising to 1,524m in 1990. By 1994, export earnings had risen to US \$ 2,534m, a rise of 171% over the last decade. Export earnings during 1999 stood at US \$ 5313 million. During the period 1986-1999, growth of nominal exports is estimated to be about 11.6 percent as against a

real growth rate of 8.2 per annum. The non-traditional exports depicted a trend growth rate 21.6% in nominal terms and 21.4% in real terms. This compares with 0.3% and 0.4% respectively for traditional exports. The principal non-traditional items of export are frozen fish and shrimps and leather/leather products. Export earnings from ready-made garments (RMG) during the last few years average more than US \$ 1200 million. The RMG industry contributes 25-30 percent value addition in the country and earns a lion share of the total export earnings.

The export-oriented RMG industry of Bangladesh made its debut in international markets in 1977-78 with 9 enterprises. Roughly US \$ 1 million could be fetched to the export earnings. By fiscal year 1996-97, the number of enterprises has increased to 370 with an annual income of over US \$ 5 billion. The unusual growth is the result of quota restricted entry into the market of USA under Multi Fibre Arrangement (MFA) and unrestricted entry into markets of the European Union under the Generalized System of Preferences (GSP). During 1999 almost 75 per cent of total export earnings were from ready-made garments. Exports totalled US\$ 3.38 billion in the first half of the fiscal year 2000-2001, registering a record 23.26 per cent growth over the last year and 7.17 per cent over the target. Export earnings were \$ 2.74 billion in July-December period in the last fiscal year [1999-2000].

The proportion of earnings from non-traditional exports rose from about one-third of total exports in 1983 to two-thirds during the 1980's and to a significantly higher level of over four-fifths during the last couple of years. The share of non-traditional items to the total export earnings was as high as 89% during 1999. However, an alternative estimation based on net value added instead of gross value added may not depict a rosy picture. For example in 1991, the share of non-traditional exports, on a gross basis, stood at 75% while the share was 62% on a net basis. Similarly, the share of non-traditional items to total exports for 1994 is also reduced to 75% on a net basis from 84% on a gross basis.

There is also a matched shift towards exports of manufactured commodities during the period. The share of manufactured products to total export earnings rose to four-fifth during the early 1990's compared to over three-fourths in the late 1980's and about two-thirds in the early

eighties. At the time of independence, primary commodities exports dominated Bangladesh's export basket, contributing about 43% of total exports.

Table-1 presents the composition of traditional and manufacturing exports both in share and value term. Figure 1 depicts the trend of earnings from traditional and non-traditional items. Figure 2 represents share of traditional and non-traditional items in export earnings and Figure 3 represents share of primary and manufactured commodity.

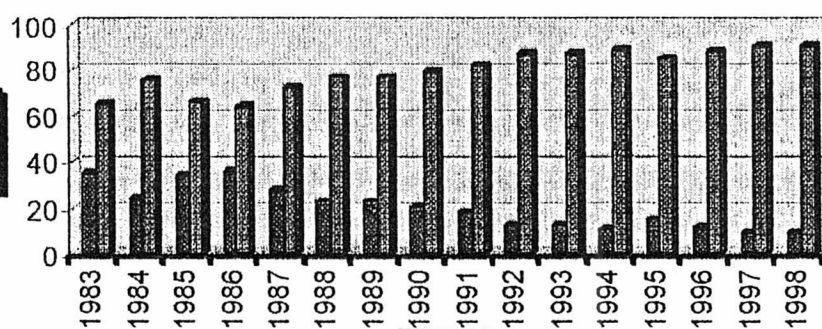
Table-1: Traditional and Manufacturing Export

Year	Value Term (Million US \$)			Share		Share	
	Traditional	Non-traditional	Total	Traditional	Non-traditional	Primary	Manufacturing
1981	526	185	711	-	-	-	-
1982	438	189	627	-	-	-	-
1983	475	211	811	69	31	35	65
1984	543	211	934	67	33	24	76
1985	602	332	819	64	36	34	66
1986	450	369	1074	55	45	36	64
1987	436	638	1231	40	60	28	72
1988	421	810	1286	34	66	23	77
1989	417	869	1524	32	68	23	77
1990	493	982	1717	32	68	21	79
1991	494	1011	1993	25	75	18	82
1992	428	1338	2386	21	79	13	87
1993	408	1553	2534	17	83	13	87
1994	379	1945	3167	15	85	11	89
1995	633	2840	3473	13	87	15	85
1996	665	3217	3882	17	83	12	88
1997	667	3751	4418	15	85	09	91
1998	626	4535	5161	12	88	09	91
1999	583	4730	5313	11	89	-	-

Source: Bangladesh Bank, Annual Report, 1998-90; and Export Promotion Bureau.

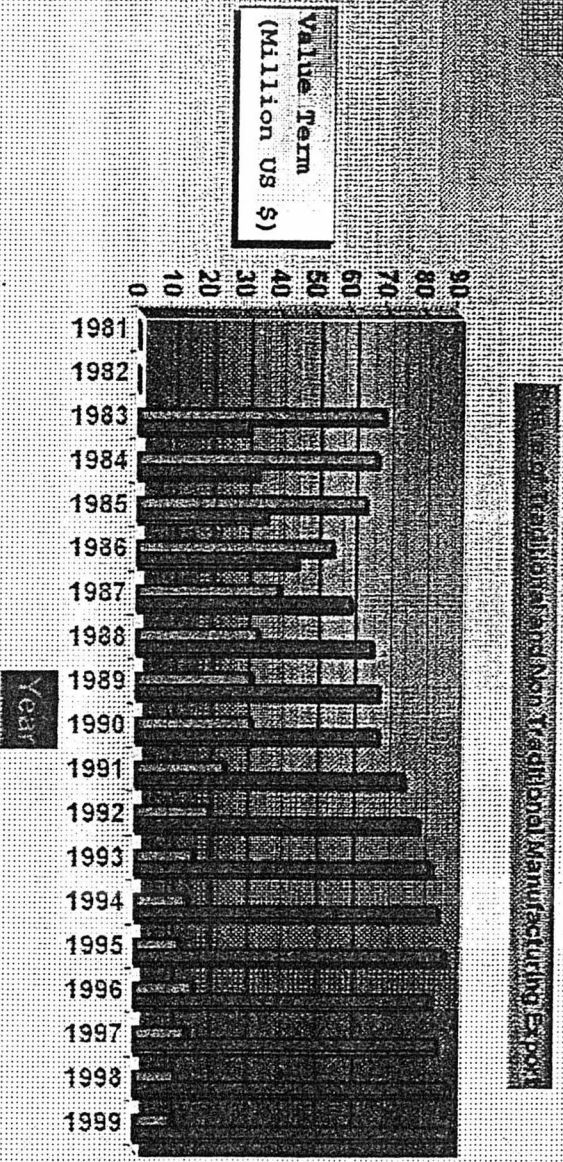
Primary and Manufacturing Export

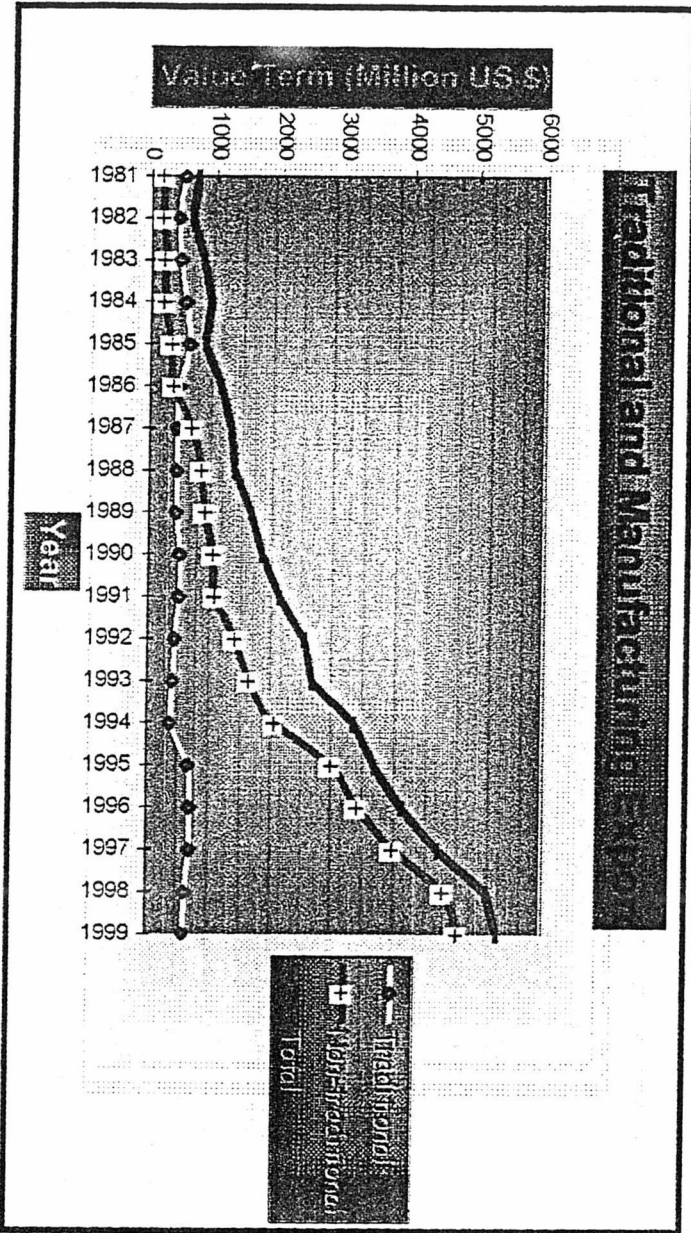
Value Terms
(Million US \$)



Year

Primary Manufacturing





Focus of the Paper

Different parameters account for the change in value and composition of export earnings. This paper will try to assess the role of devaluation as well as some pertinent variables in export earnings. No doubt, devaluation provides a safety valve in promoting export and containing import bills. However, devaluation may not produce a spontaneous response in export earnings and generally lag is observed to attain full potentialities in export earnings. J-curve phenomenon explains such behaviour. This study will provide a theoretical preamble on J-Curve but empirical analysis is not amenable due to lack of quarterly data on several important macro variables of Bangladesh economy.

There are other dimensions of devaluation in trade. When export production is highly import dependent, devaluation increases the local currency cost of imported materials and thus nullify some of the salutary effects of devaluation. Besides, few domestic conditions can make the export supply price inelastic. Most important irregular power supplies, poor communication network, disruptions in port operations, excessive bureaucracy and poor law and order situation. Another aspect that the paper will try to link is the relationship between devaluation and inflation mainly the first order or short run effect that is partly responsible for backwash effect of some of the positive benefits of devaluation. Devaluation often unleashes inflationary pressure and may create a recession in the economy.

Real Effective Exchange Rate is also an important fulcrum in the devaluation episode. A measure of competitiveness must take into account not only changes in nominal bilateral exchange rate but also changes in the price level. So, Real Effective Exchange Rate (REER) indices are calculated taking into account the relative price changes. The REER measures the average change in a country's exchange rate against that of all other currencies of major trading partners, adjusted for price development. The REER index is used as an indicator of the international competitiveness of Bangladeshi currency [Taka] and also as an indicator in determining equilibrium real exchange rate.

This study will use the secondary data to assess on the extent of under-valuation or over-valuation of the Bangladeshi Currency *vis a vis* the currency of other trading partners.

Structure of the Paper

This paper contains six sections. The Second section briefly discusses the theoretical context of devaluation and export expansion. Marshall-Lerner condition dealing with elasticities of tradables (M-L Condition), absorption approach and monetarist explanation of devaluation on improvement of trade balance is analysed. The side conditions are explained to focus effectiveness of devaluation on Trade balance.

The Third section deals with theoretical edifice of J-Curve phenomenon and Fourth section links devaluation and inflation with consequent impacts.

The Fifth section will focus on the issue of Real Effective Exchange Rate. Working definition of REER through the pertinent variables are attempted to outline necessary linkage this section also elaborates on the estimation procedure in Bangladesh. A separate table tries to identify devaluation with reference to movement of REER. Sixth section will review the current policy issues in the context of trade promotion. The paper ends with few concluding remarks.

SECOND SECTION

An Analysis of Exchange Rate and Devaluation Episode

Theoretical Premise

Exchange rate is considered to be one of the most important macro variables by the policy planners to study few important economic fundamentals such as balance of payments, international reserves or trade competitiveness. Like price of any other commodity, exchange rate is the price of one currency in terms of another currency. Consider the price of apples or oranges. The market forces of supply and demand determine their price. When the demand exceeds the price, the price is reasonably higher; the reverse is true when demand slackens and glut in commodity market is observed. When a currency is in high demand because of its competitive edge in the export market, the currency appreciates. The reverse is true, when trade balance is negative. As the exchange rate is a price, it has direct bearing for both the cost and profitability of exports, imports and even to non-tradeables through their spill over effect on income distribution.

There are several definitions of exchange rate. The nominal or bilateral exchange rate, real exchange rate or the real effective exchange rates are used frequently in economic literature. The nominal exchange rate is defined as the price of one currency relative to another currency, e.g., 1 US \$ = Tk. 53.

A real exchange rate is a price adjusted nominal exchange rate. The relationship between nominal exchange rate N , and the real exchange rate Γ may be expressed algebraically by the following formula: $\Gamma = N P^* / P$, where P^* and P represent relevant indexes of foreign and domestic prices, respectively i, e., the average price of a basket of goods in the foreign as well as in the domestic markets. Thus, real exchange rate takes care of the relative prices of both the foreign and the domestic markets. Foreign prices indicate the price of the tradeables and domestic prices represent the prices of non- tradeables.

Devaluation is considered as one of the important components of orthodox stabilization programs and conventionally believed to be a primary policy option for improving a country's

balance of trade. Within the international trade literature arguments over the effects of devaluation on trade balance are rampant. Devaluation results in increase in the domestic currency price of foreign exchange. Given the nominal prices in two countries, devaluation increases the relative price of imported goods in the devaluing country and reduces the relative price of exports from the devaluing country. The country enjoys an edge in export and import is reduced which brings the trade in parity. The condition for improvement in the trade balance that is supported by the defenders of elasticities approach is known as the Marshall-Lerner condition. The balance of trade improves in response to devaluation if the sum of the elasticities of demand for exports and the elasticities of demand for imports exceeds unity.

The elasticities approach has been criticized by the proponents of the absorption approach because it ignored the income-expenditure effects of devaluation. They argued that the trade balance might improve only to the extent that devaluation raises domestic savings. It does no good to raise production if the resulting increase in income raises consumption by an equal amount. Sidney S. Alexander who is one of the most prominent figures of this approach suggested that the real income might rise a lesser amount because devaluation is likely to cause deterioration in the terms of trade.

The monetary approach asserts that devaluation increases the price level by the same percentage under the assumptions that all goods and assets are perfect substitutes, prices are exogeneously given for the small country and wages and prices are flexible in both real and nominal terms. The increase in price level causes a reduction in real balances and accordingly in domestic absorption.

The real life evidences of the effects of devaluation on the balance of trade are not always consistent with the theory. During 1972-79 period, large trade and current deficits and surpluses have sustained in the major industrial countries despite substantial changes in exchange rates. For instance, the German current surplus reached to record levels in 1974 despite the quadrupling of oil prices, Japanese surplus expanded in 1977-78, although, the yen appreciated continuously, and the US trade balance deteriorated so much in 1972 in spite of the devaluation of the dollar in 1971.

THIRD SECTION

J-CURVE AND THE STUDY OF LAG

Analytical Framework

It is empirically established that flows of goods and services respond only with time lags due to changes in the exchange rate. This proposition is termed the "J-Curve" phenomenon due to the path the balance of trade would follow over time. The J-Curve term is used to portray the pattern of the balance of trade following devaluation. If the balance of trade is viewed over time, the initial decrease and subsequently a positive trade balance results in the time pattern of trade balance that traces a path similar to the letter J.

The J-Curve phenomenon has been attributed to numerous factors. Expectations at the time of devaluation dominate the outcome according to Wilson and Tacaks (1980). Importers in the devaluing country might be tempted to accelerate their orders for foreign goods in anticipation that any deferment only burden future payment bill because higher exchange rate may follow in trail and would cost more money in domestic currency. They argued that the opposite behavior might describe importers in a country whose currency is appreciating rapidly. Expecting a further appreciation of domestic currency in future, the exporter gets an incentive to postpone orders for imports. If the trade flows respond to a change in the exchange rate in this manner, it is evident that the volume of balances of both appreciating and depreciating countries will move perversely for a certain period of time.

Stephen P. Magee (1973) argued that the initial benefit of devaluation could not turn trade balance to a favourable position because contracts already in force in specified currencies dominate the determinants of current account. The new contracts in the trail of devaluation may spur growth in the export industry provided that congenial environment exists in the devaluing country. Thus, an initial decline may follow a surge due to a healthy expansion of domestic activity due to devaluation that follows a J-curve pattern.

Krueger (1983) classified the devaluation impact into short run and long run: the short term dominates over the long term. At the outset, trade balance does not show a positive trend mainly at the time an exchange rate change occurs, goods already in transit and under contract have been purchased, and the completion of those transactions dominates the short-term change in the balance of trade. Accordingly, devaluation may cause the trade balance to worsen initially but after a certain period of time; it may generate an improvement in the trade balance.

Junz and Rhomberg (1973) elaborated on five lags during the process of expansion of exports and containment of imports in devaluation episode. First, recognition lag: it takes time for both buyers and sellers to become aware of the changed environment. This is particularly true in international trade where language, trade rules and regulation and distance are some of the impediments in the expansion of export trade. Secondly, there is a decision lag: it takes time for new business connections to be formed and new orders to be placed. Third, there is a delivery lag: shipment of goods may suffer due to poor infrastructure and the payments generally follow only when the goods are delivered. Third world countries are particularly prone to these lapses. Fourth, there may be a replacement lag: this accounts for the change in inventories and the production process. Fifth is the production lag, delays in production due to internal condition.

The empirical evidence supports lags up to five years in the effects of exchange rate changes on market shares of countries. However, theoretical and empirical debates do not provide a consistent picture. Cooper (1971) indicates that the effect of 15 out of 24 devaluation is to improve the balance of goods and services, while in 17 out of 24 cases the balance of payments improves. Connolly and Taylor examines 16 devaluation that were in the Cooper's sample by trying to establish a relation between improvements in the balance of payments and rates of domestic credit creation. They conclude that a higher rate of devaluation generates a greater improvement in the reserve position; and higher the rate of domestic credit expansion following devaluation, the smaller the improvement.

Miles (1979) related changes in the balance of trade and in the balance of payments to changes in the exchange rate, income and money supply. He used annual data for 14 industrialised countries during the period of 1956-72 mostly industrialised countries. His

empirical estimation yielded the role of money and income along with devaluation for an improvement in either account. However, with all variables, the regression analysis established that devaluation did not improve the trade balances but improve the balance of payments.

Salant finds that in about three-quarters of the cases (75 out of 101) the average balance of payments for the 3 years following devaluation is improved as compared with the average in the 3 years preceding devaluation. He concludes that devaluations improve the trade balance but not as often as the overall balance of payments. Gylfason and Risager (1985) note that devaluation exerts a positive effect on the current account in the short run and in the medium run. Anne Krueger (1978) studied the consequences of 22 discrete devaluations in 10 less-developed countries from 1950 to 1970. She found no consistent response pattern for the net position of the current account, even for countries where the devaluation was ultimately considered to be "successful" in the sense of restoring international competitiveness. However, she did generally find that the overall balance of payments of the devaluing countries improved.

Erich Spittaller (1980) found the trade balance of those that devalued actually worsened for the first year even in the floating exchange rates and observed some evidence that support the "J-Curve" phenomenon. Daniel Himaros (1989) reexamines the effectiveness of devaluation in trade balance adjustment for twenty-seven countries. He notes that in over 80 percent of the cases, devaluation causes a long-run net improvement (*ceteris paribus*) in the trade balance in both fixed-rate and managed floating. He finds clear evidence of J-Curve effects in four countries: Ecuador, France, Greece and Zambia. For the first three or four quarters, the trade balance actually deteriorates but improvement occurs later on. Arthur Laffer (1974) studied the time pattern of the trade balance for 15 countries that devalued their currency in 1960s. He observes an improvement in the trade balance in the year of devaluation and the year after, before starting to fall again. He also detects the evidence of a J-Curve in four countries.

Mohsen Bahmani-Oskooee (1989) investigated the effects of devaluation on the trade balances of four developing countries and presented an alternative method of identifying the existence of the J-Curve. He discovers that trade balances of all four initially improve and then deteriorates generating a path that resembles "inverse of the J-Curve". Such perverse effects are

theoretically conceivable and have been explored in the literature. He concludes that in the long run, devaluation improves the balance of trade of only one country.

The most important variables in the empirical estimation of J-Curve are, trade balance in domestic currency, domestic income, domestic high-powered money and trade related real effective exchange rate index. Since the idea is to evaluate the J-Curve Phenomenon, a lag structure needs to be imposed on the exchange rate variable. Following Almond, it is assumed that distributed lag coefficients lie on a polynomial curve of third degree with no constraints. Since the sum of lag coefficients depicts the long run equilibrium effects of depreciation, quarterly data on all the variables are a necessity to carry this empirical analysis.

Unfortunately, quarterly data on GDP and other pertinent variables are not available in Bangladesh and any artificiality in data generation may not yield the desired results. Therefore, only theoretical analysis of devaluation is attempted to focus lag structure in impact analysis on export earnings that policy planner should consider.

FOURTH SECTION

LINK BETWEEN DEVALUATION AND INFLATION

Do Devaluation leads to inflation?

Preliminary analysis stresses that link between devaluation and inflation can nullify some of the beneficial effects of devaluation. This is primarily true when the demand for import is inelastic and bulk of import constitutes the intermediate inputs for export. The effect of devaluation on inflation can be decomposed into two effects: a “first order” and a long run effect. The share of traded goods in total expenditure and the relative price elasticities of the demand and supply of non-tradable goods determine the first order effect. The long run effect is the overall effect and is considered to be residual from the first order effect and results due to the policy environment that causes changes in the prices of non-traded goods. It is observed that devaluation accelerates the resources transfer from non-tradable to tradable sectors.

When tradable items experience escalation in cost due to the import content of intermediate inputs, price elasticities of the exportables may not be so responsive. Further, domestic condition can generate an inflationary pressure. This happens when factor costs moves in tandem with devaluation and there is no effective institutional mechanism to contain the factor cost in the existing policy environment.

The empirical evidence on the link between devaluation and inflation is scanty. The first order effect based on the assumption of Law of One Price suggests that the share of traded goods in total expenditure and the relative price elasticities of the demand and supply of non-tradable goods determines the extent of inflation due to inflation. As an approximation, the impact of devaluation on domestic prices can be estimated by the product of the exchange rate change and the share of traded goods in total expenditures. Traded goods in Bangladesh mainly originates in the manufacturing and agricultural sector, which accounts roughly 50 percent of the Bangladesh's GDP. The weight of shareable may be less than 50 percent. Assuming 50 per cent of the share in the tradable, an estimate is available by a World Bank Study that is given in the following table.

Table - 2: A First-Order Effect of Devaluation on Inflation

Year	Devaluation Rate	First Order Effect
1995/96	4.1	2.1
1996/97	4.6	2.3
1997/98	4.1	2.1
1998/99	5.7	2.8
1999/00	8.8	4.4

Source: World Bank estimation and own calculate.

Even on sticking on the assumption of 50 percent, the first order effect did not trigger any inflationary impact during 1998/99. CPI index during this period lends support to this. However, during 1999/00, the devaluation to the extent of 8.8 percent, shoot inflation from 2.8 to 4.4 percent.

This warrants a cautious optimism. Definitely, imports of inelastic nature particularly, machinery and capital equipment, chemicals, petroleum and petroleum products manifest an increase in prices. Moreover, the consumption pattern of burgeoning low/middle income working class often overshoot the demand for imports, fuelling inflation and thus results in wage-price spiral. There is always a pressure by government employees to add dearness allowance to wage in order to protect the real income.

We have to note here that the long run effect, is however depends on several factors. The policy environment as well as the law and order situation pervades in this effect. To reap benefits of devaluation, few issues need to be addressed. One important area is diversification of export base and provision of adequate infrastructure to minimise per unit cost to gain competitiveness in the export market.

FIFTH SECTION

Exchange Rate Alignment and Correspondence to REER: Any Guide

Exchange Rate Alignment and REER

Exchange rate is considered to be an important instrument in the trade environment. The most commonly used exchange rate i.e., the bilateral exchange rate is not the real instrument in dealing with trade regime since trade is generally not carried out on bilateral basis. It is important to consider the realignment of currencies against a basket of foreign currencies with which the country trades. The nominal effective exchange rate is a measure of whether or not the currency is appreciating or depreciating against a weighted basket of foreign currencies. The nominal exchange rate is easy to compile on a daily basis and generally provides a reasonable measure of changes in country's competitive position with the trading partners. Thus, Nominal Effective Exchange Rates (NEER) is a weighted average of various bilateral exchange rates and measures the average change in the value of a country's currency against that of all other (major) partner countries. It is used as an index to show how a currency performs in foreign exchange market. A measure of competitiveness must take into account not only changes in exchange rate but also changes in the price level. So, Real Effective Exchange Rate (REER) indices are calculated taking into account the relative price changes. The REER measures the average change in a country's exchange rate against those of all other major currencies, adjusted for price change.

Multilateral donors insist on maintaining a realistic exchange rate that takes account of the change in bilateral exchange rate among the trading partners and also consider the weight of individual country in the total trade. The structural adjustment policy encapsulates maintenance of the real effective exchange rate index at 100. The REER index is used as an indicator of the international competitiveness of Bangladeshi Taka and also as an indicator in determining equilibrium real exchange rate. At present, Bangladesh Bank regularly calculates and monitors the movement of the real effective exchange rate (REER) index of Taka. In case the calculated REER index is greater than the base number 100, the currency is overvalued and a prima facie case exists for depreciation of Taka in order to return REER index to the base level.

The behaviour of the real effective exchange rate is important in understanding the policy on realignment of the currency. The market economy emphasizes that export markets must try to maintain a correct real exchange rate. When the currency is over valued there is possibility of loosing the export market. Thus, usefulness of using real effective exchange rate as a vehicle in trade promotion is important.

Calculation of REER

There are several procedures in calculating real effective exchange rate. The usefulness of the real effective exchange rate in understanding this important question depends on the accuracy of measurement of real effective exchange rate. Bangladesh Bank daily calculates the real effective exchange rates to monitor the competitiveness of the Bangladeshi Taka. Procedure for computing the Real Effective Exchange Rate (REER) Index in Bangladesh is given below:

The formula for computing the REER Index:

$$REER^t = 100 \frac{ERI_B^t}{\prod_{i=1}^{10} (ERI_i^t CPI_i^t)^{W_i}} \frac{CPI_B^t}{CPI_B^t}$$

where,

- REER^t = Bangladesh real effective exchange rate index
- W_i = the currency weight for each partner country
- ERI_i^t = the exchange rate index of U.S. dollar against each partner country
- ERI_B^t = the exchange rate index of U.S. dollar against the taka
- CPI_i^t = the relevant price index for each partner country
- CPI_B^t = the Bangladesh seasonally adjusted consumer price index
- t = time.

Bangladesh considers ten countries in the construction of REER: Germany, India, Japan, Korea, Pakistan, Singapore, Thailand, the United Kingdom, and the United States. Weight of each country is determined in proportion to the average 1986/87-1987/88 share of each country in total trade of Bangladesh. Respective weights accorded to the currencies of the partner countries are i.e. (Canadian dollar 0.0666), (Deutsche mark: 0.0646), (Indian rupee: 0.0458),

(Japanese yen: 0.263), (Korean Won: 0.0389), (Pakistan rupee: 0.0370), (Singapore dollar: 0.0971), (Thai bath: 0.0324), (Pound sterling: 0.0789, and (U.S. \$: 0.2757).

For the exchange rates, average monthly rates in currency units per U.S. dollar is used and calculated on the basis of daily midpoint rates reported by the partner countries to the IMF. The relevant price indices, the consumer price index is used, except in the case of India where the wholesale Price Index is used; the data will be either those reported to the IMF's Bureau of Statistics or those otherwise obtained by the IMF staff.

For Bangladesh, the Dhaka Middle-Income Families overall Consumer Price Index (CPI) (1973/74) = 100) is used which is seasonally adjusted by dividing the monthly index in 1989/90 by the following factor: 1.0083 (July); 1.0109 (August); 1.0125 (September); 1.0106 (October); 1.0127 (November); 1.0039 (December); 0.9942 (January); 0.9845 (February); 0.9790 (March) ; 0.9840 (April) ; 0.9918 (May) ; 1.0049 (June). The seasonal adjustment factors are generally revised annually after agreement between IMF and Bangladesh Bank. For computation of the REER, the exchange rate and price indices are re-based to the average of the calendar year 1988, i.e., 1988 = 100.

Bangladesh Bank transmits to the IMF monthly data for CPI and the average monthly midpoint U.S. dollar/taka exchange rate. Generally, such data reach the IMF not later than six weeks after the last day of the month to which the data refer. IMF, in turn transmits to Bangladesh Bank monthly price indices for the partner countries, average monthly midpoint exchange rates and their calculations of the real effective exchange rate.

Correspondence Between Exchange Rate and REER

An examination of the bilateral exchange rate and the REER may provide hints on the correspondence between the REER and the bilateral exchange rates. (Given in Appendix-A).

Table 5.1 gives the estimation of REER by IMF and Table 5.2 gives the bilateral exchange rate by Bangladesh Bank.

Table- 5.1: REAL EFFECTIVE EXCHANGE RATE (REER) INDEX
(Base 1990=100)

Month	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97	FY98
January	106.0	96.8	91.0	93.0	93.8	92.8	94.0	93.6	106.6
February	105.8	96.0	92.5	92.8	93.4	92.6	93.6	95.4	104.2
March	103.7	99.4	94.0	94.1	92.8	91.9	92.9	96.1	103.9
April	105.0	100.5	95.5	91.2	92.1	89.6	92.6	95.3	103.6
May	102.0	101.0	94.7	90.0	91.4	90.4	92.0	94.9	104.5
June	100.4	102.3	90.9	91.0	88.2	90.0	92.4	97.0	105.6
July	99.1	102.3	90.9	91.0	88.2	90.0	92.4	97.0	105.6
August	95.8	100.8	90.1	90.0	89.5	93.4	91.4	98.6	107.5
Sept.	94.7	97.4	90.2	90.7	89.5	95.0	91.3	98.3	104.9
Oct.	94.8	96.3	90.6	91.4	90.0	94.0	90.8	98.1	100.9
Nov.	96.0	93.7	92.0	92.3	90.5	94.0	94.0	96.4	100.5
Dec.	96.7	91.2	91.8	93.7	92.8	94.6	91.5	101.3	100.4

Table-5.2: EXCHANGE RATES
(Average official Taka-Dollar Rates)

Year	Taka per US Dollar (Annual Average)
1980-81	16.4599
1981-82	20.0652
1982-83	23.7953
1983-84	24.9437
1984-85	25.9634
1985-86	29.8861
1986-87	30.6294
1987-88	31.2422
1988-89	32.1399
1989-90	32.9214
1990-91	35.6752
1991-92	38.1453
1992-93	39.1395
1993-94	40.0009
1994-95	40.2005
1995-96	40.8365
1996-97	42.7008
1997-98	45.4563
1998-99	48.0644
1999-2000	52.3112

Source: Statistics Department, Bangladesh Bank.

Following table provides a cursory view on the correspondence between REER and the policy response of the Government of Bangladesh. However, the data does not show any relationship between the NEER and REER or does nominal devaluation leads to real devaluation.

Time	Policy Response	Bilateral Rate	
January 1990 - May 1990	Overvalued	34.90	
June 1990	Consistent	35.54	
July 1990 - March 1991	Series of Devaluation	36.04	
April 1991 - August 1991	Overvalued	36.49	
September 1991 - Nov. 1997	Series of Devaluation	45.00	
December 1997 - Jan. 1998	Overvalued	45.45	
July 1998 - Nov. 1999	Series of Devaluation	57.00	

It is apparent that correspondence between REER and bilateral exchange follows the theoretical norm, in fact series of devaluation during the period July 1990 - March 1991, September 1991 – November 1997 and series of devaluation after September 1998 till todate represented overvaluation of currency. Overvaluation was prominent during 1995, 1996 and December 1997 to September 1998. The Asian Financial Crisis during 1997 with resulting devaluation of exchange rate of some of the Asian countries appreciated the Exchange rate.

Bangladesh maintained a flexible exchange rate policy during 1999/2000 with the basic objectives of maintaining the external competitiveness of Taka, expansion of export trade improving the trade balance. Based on movements of the Real Effective Exchange Rate (REER), and taking into consideration current developments in domestic, regional and international economic scenario, the exchange rate of Taka in relation to US \$ was readjusted in two steps from US \$1 = Tk. 48.50 on July 18, 1998 to US \$ 1 = 51.00 on November 30, 1999. As a result the Taka-Dollar depreciated by 4.9 percent during the year 1999-2000.

DIVERGENGS: AN EXPLANATION

Divergence between the REER and bilateral exchange was referred in another study.

Table-5.3 depicts alternative estimation of real effective exchange rate using 1985 as base year.

Table-5.3: Nominal and Alternative Real Effective Exchange Rates, 1974-94

Year	RER1	RER2	RER3	RER4	RER5	RER6
1974	102.28	52.19	57.43	63.74	70.14	77.31
1975	140.09	95.52	62.71	51.72	54.49	80.94
1976	97.68	81.90	85.94	86.84	91.11	10.292
1977	97.57	91.99	95.74	99.78	103.85	116.30
1978	101.70	96.16	98.19	93.95	95.94	113.05
1979	98.97	88.63	92.53	86.88	90.70	98.92
1980	87.82	92.44	100.73	92.04	100.29	97.65
1981	90.31	89.03	97.78	90.08	99.02	96.88
1982	92.19	89.19	93.47	91.92	96.32	90.58
1983	91.25	98.00	101.11	113.79	117.39	113.13
1984	96.72	104.25	106.55	104.59	106.90	103.14
1985	100.00	100.00	100.00	100.00	100.00	100.00
1986	89.76	103.93	100.51	104.97	101.51	91.41
1987	90.34	97.09	97.05	96.76	96.72	79.76
1988	90.04	101.22	103.74	102.50	105.05	84.24
1989	91.09	99.21	103.57	102.56	107.06	86.25
1990	86.69	105.75	112.32	112.69	119.69	91.33
1991	86.56	114.77	124.69	119.84	130.20	104.59
1992	83.71	123.49	140.74	129.05	147.09	117.49
1993	82.78	136.96	162.65	139.85	166.09	128.65
1994	75.69	141.01	184.34	145.99	190.86	144.84

Source: Growth or Stagnation? A Review of Bangladesh Development 1996.

RERI index shows a general trend different from the other measures, RER1, RER2, RER3, RER4, RER5 and RER6. The change in trend is due to the different construction methods. More important are considerations of tradable and non-tradable, consumer price index and world price index. Series RER3 and RER5 that uses the foreign WPI as price of tradable goods while the domestic CPI as the price of the non-tradable provides a better measure. This measure represents depreciation of Taka gradually during the period between 1974 and 1994

with synergies during 1979, 1981/82, 1985, and 1987. From 1989 onwards the real depreciation of the exchange rate continued unabated and at a relatively faster rate. During the period 1998 and 1994, the exchange rate depreciate by 78%. The nominal devaluation of the currency has been much lower about 26%. It appears that Bangladesh seems to be following an exchange rate policy of keeping the exchange rate undervalued as a drive for export expansion under the accelerated liberalization programme. However, it is difficult to establish any positive relationship between the exchange rate and the growth of exports by matching annual changes in these variables.

There are strong reservations in generalizing the export response to different instruments. Similar exchange rates and foreign demand conditions have led to different level of exports in different countries and different times. Empirical estimate yield varying results when export supplier response is simulated as simple functions of the real exchange rate and foreign demand. Capacity expansion, productivity growth and a benign demand elasticity of the exportables are some of the factors responsible for export boom. An uninterrupted demand for exportables is also a conditioning factor in export augmentation.

Despite the limitation of the real effective exchange rate in detailing out a relationship between export earning and exchange rate, pursuance of a realistic exchange rate is necessary for a fair export regime.

Sixth Section: Policy Perspective

Policy Issues

Erratic fluctuations of exchange rate may trigger manifold distortions in the functioning of an economy. An import dependent country may experience inflationary pressure and value added may substantially be squeezed even in case of a labour intensive industry when bulk of raw materials are imported. A change in exchange rate may also put pressure on interest rate derailing a congenial environment of investment. Change of exchange rate through the terms of trade effect may cause downward movement in the price of stock. Devaluation leads to curtailment of import and expansion of export. Demand for local currency overshoot and in an integrated financial market, the domestic interest rate rises. A rise in interest rate leads to a fall in share market. The stock market in Asia fell by 50 percent during 1997, the year of Asian financial Crisis. The declines in the stock market significantly preceded the depreciation of the currency in many of the Asian countries.

However, the case of stock price change and change in the interest rate happens only in an integrated capital and financial market. This change may not be so pronounced in Bangladesh where both financial and capital market lack several infrastructures in integration process. However, exchange rate change may cause changes in export earnings and augment the remittance earnings.

Does Incentive Package Responsive?

Mapping of exchange rate index and export earnings index may shed light in impact study of nominal devaluation on export earnings. An analysis of movement of exchange rate index and movement of export earnings index shows a wide variation in Bangladesh. The variation may be due to certain measures by government conducive to export expansion. The export policy of Bangladesh, now of 5 years duration specify certain measures useful for export expansion. Therefore, phenomenal change in export earnings during the past 20 years may be traced back to several positive steps in the policy environment that accelerated the export

earnings. Following table gives an indication of the divergence between the exchange rate index and the index of export earnings.

Index of Exchange Rate and Export Earnings

Year	Taka per US Dollar (Annual Average)	Index	Export Earnings	Index
1982-83	23.79	100	811	-
1983-84	24.94	105	934	100
1984-85	25.96	109	819	-
1985-86	29.88	125	1074	114
1986-87	30.62	128	1231	132
1987-88	31.24	131	1286	137
1988-89	32.13	135	1524	163
1989-90	32.92	138	1717	184
1990-91	35.67	150	1993	213
1991-92	38.14	160	2386	255
1992-93	39.13	164	2534	271
1993-94	40.00	168	3167	339
1994-95	40.20	169	3473	371
1995-96	40.83	172	3882	416
1996-97	42.70	179	4418	473
1997-98	45.45	191	5161	552
1999-00	48.06	202	5313	569

Policy interventions which has influenced export earnings may be broadly categorised as:

✕ Formation of a high-powered national committee to help resolve many pertinent issues in the export sector on a priority basis. During the past few years, this committee helped resolve some of the important issues on export promotion. Incentives scheme has been designed and existing schemes have been modified to provide more leverage to the exporters.

Some of the incentives are worth mentioning.

- i) Classification of leather industries exporting at least 80% of their products as 100% export-oriented industries. Thus the leather industries are in a position to exploit the facilities of a 100% export oriented industries. These facilities were also provided to other industries ensuring all financial incentives and facilities

including bank credit as 100% export-oriented industries. Moreover, these units are allowed to sale 20% of their products in the local market subject to payments of normal duties and taxes.

- ii) 100% export-oriented software and data entry service industries are provided with supervised bond facility to facilitate the duty free import of computers and other accessories. There are projects to revise copyright law that include software development to facilitate to marketing to software. Further, develop a pool of human resources in computer operations, the universities, technical institutes, will design and develop computer modules to train personnel.
- iii) Export Credit Guarantee Scheme. The four types of guarantees extended e.g. the Export Finance Guarantee (pre-shipment), the Export Finance Guarantee (post-shipment), the Comprehensive Guarantee and the Whole turn over pre-shipment finance are regarded as the critical element in trade augmentation. The government is also considering means to ease the administrative procedure so that it works as in incentives for exporters. While the first two types of guarantees are extended to the bankers, the third one is extended directly to the exporters.
- iv) Taka convertibility. Convertibility of Taka in current account to facilitate the liberal market economy policy. The new export policy entitles exporters to retain 40% of the export earnings and 75% of earnings from legal advice, consultancy and professional service. These foreign exchange may be used in business related foreign travel, participation in international trade fairs and seminars, import of raw materials, and even setting up of overseas offices. Moreover, the new export policy continue to provide support to the producer and exporters of new and non-traditional items to augment export earnings by product development, diversification and marketing.
- v) Participation in overseas International Trade Fairs, Single country Exhibitions and other market development programmes under government patronization helping Bangladeshi exporters to marketing their products. In this context, the establishment of World Trade Centre and International Trade Centre in Chittagong will be considered as stepping stone in bridging the global trade

culture in the Bangladesh Perspective. National Export Trophy, as a mark of national recognition in the export sector, every year is being awarded to the outstanding exporters of the country in recognition of their performance.

The impact of different incentives varies across sectors as well as between the stages of production. The cash compensation scheme, operated by Bangladesh Bank, is targeted to enhance backward linkage and the duty-free import of equipment is intended to promote export-oriented investment, incentives in the way of the Export Credit Guarantee operated by Shadharan Bima Corporation is intended to cover the marketing risks.

The policy effectiveness of the different programmes in export augmentation however, cannot be gauged in the absence of a specific statistical tool. It is true that specific policy has certain bearings in the performance of the sectors for which improvement has been solicited. However, devaluation, as an adjunct may be considered as one of the tools to address improvement in the following sectors of the economy. These are:

- I. Augmentation of exports earnings: Devaluation helps the country to get an edge over the other trading partners in increasing volume of commodities.
- II. Discourage import: The import becomes expensive and the local production of importable gets a boost for relative price advantage over the foreign competitor.

Summary and Conclusion

The paper reviewed the theoretical ambiguity of the relation between devaluation and the time pattern that trade balance would follow over time. It is argued that the flows of goods respond only with time lags to changes in the exchange rate. The J-Curve term is used to describe the movement of the trade balance in response to devaluation: it may deteriorate initially and improvement may come later. Data limitations stands on way for empirical investigation of the J- Curve phenomena in Bangladesh.

Empirical evidence dictates that congenial macroeconomic conditions and policy variables provide adequate explanations for export expansion. Correct exchange rate alignment may be considered as an important conduit in export promotion. However, it is to be understood that any gap between enhanced export earnings and devaluation may be traced largely to microeconomic characteristics of manufacturing sectors and lack of enabling environment. For a country like Bangladesh, export competitiveness needs to consider bilateral real exchange rate of the export competitors.

We have to understand import source countries and the export competing countries represent two different sets. Mainly developing countries constitutes our export competitors. The currencies of those countries often face pressure in devaluation from IMF or domestic consideration leads to devaluation. Our importable emanates from developed countries who seldom resort to devaluation. So, real exchange rate behavior should consider separately import source countries as well as export competing countries to have a focus on international competitiveness.

Response in export earnings to a set of given stimuli is shaped by the cross-firm dispersion in unit production costs, the extent of product differentiation, and critically the prevalence of previous exporting experience. As an example consider the garments industries. Bangladesh has comparative advantage in labor intensive products where wage-structure provides an edge over other competitors in the international markets. Bangladesh's labour cost is

only 3% of US labour wages per hour and therefore this is the main source of the comparative advantage of the RMG products of Bangladesh.

Following Table shows the comparison of labour cost among some countries in relation to USA.

Comparative wage cost per shirt in five selected countries

Name of the country	Wages per hour in US\$	Direct Labour Minutes per shirt	Wage cost per shirt in US\$	Percent of US cost
U.S.	7.53	14.00	1.76	100%
Hong Kong	1.40	19.75	0.46	26
South Korea	1.53	20.75	0.53	30
Sri Lanka	0.35	24.00	0.14	8
Bangladesh	0.25	25.00	0.10	6

Source: Technical Evaluation of the ILO, UNDP Projects

This table indicates, given an unmet demand for certain categories of exports and quota facilities, Bangladesh may augment export earnings several folds given congenial domestic environment. The index of export earnings manifests this response. Cost of a shirt in Bangladesh is the cheapest in the world. It can be made at just 6% of US cost per unit. However, abolition of quota under GSP may cause problems for Bangladesh. Given the existing concessionary facility offered by USA in the Caribbean and some African Countries, this may erode the favourable position of Bangladesh in garment export. Only alternative is to augment productivity through investment in training and HRD. An export boom may only be achieved through a credible, sustainable exchange rate and commercial policies that do not discriminate against exporters.

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BANGLADESH BANK'S RATES WITH AUTHORITISED DEALERS FOR SPOT DOLLAR

From	To	Buying	Selling	Taka Per US Dollar Mid rate
01-07-90	03-08-90	34.85	34.95	34.90
04-08-90	07-09-90	35.54	35.64	35.59
08-09-90	23-11-90	35.64	35.74	35.69
24-11-90	01-07-91	35.74	35.84	35.79
02-07-91	06-07-91	35.94	36.04	35.99
07-07-91	19-08-91	36.44	36.54	36.49
20-08-91	13-09-91	36.84	36.94	36.89
14-09-91	08-11-91	37.64	37.74	37.69
09-11-91	30-11-91	38.04	38.14	38.09
01-12-91	08-12-91	38.19	38.29	38.24
09-12-91	20-12-91	38.35	38.45	38.40
21-12-91	31-12-91	38.53	38.63	38.58
01-01-92	30-03-92	38.75	38.85	38.80
31-03-92	23-04-93	38.95	39.05	39.00
24-04-93	17-07-93	39.75	39.85	39.80
18-07-93	31-07-93	39.70	39.80	39.75
01-08-93	07-08-93	39.80	39.90	39.85
08-08-93	11-08-93	39.70	39.90	39.80
12-08-93	01-01-94	39.75	39.95	39.85
02-01-94	23-02-94	39.97	40.17	40.07
24-02-94	26-03-94	40.03	40.23	40.13
27-03-94	06-03-95	40.15	40.35	40.25
07-03-95	09-09-95	40.00	40.20	40.10
10-09-95	30-09-95	40.15	40.35	40.25
01-10-95	27-10-95	40.40	40.60	40.50
28-10-95	07-01-96	40.65	40.85	40.75
08-01-96	07-04-96	40.90	41.10	41.00
08-04-96	19-04-96	41.40	41.60	41.50
20-04-96	14-07-96	41.65	41.85	41.75
15-07-96	31-07-96	41.80	42.00	41.90
01-08-96	06-09-96	42.05	42.25	42.15
07-09-96	22-09-96	42.20	42.40	42.30
23-09-96	07-02-97	42.35	42.55	42.45
08-02-97	18-03-97	42.65	42.85	42.75
19-03-97	06-04-97	43.10	43.30	43.20
07-04-97	20-07-97	43.55	43.75	43.65
15-07-96	31-07-96	41.80	42.00	41.90
01-08-96	06-09-96	42.05	42.25	42.15
07-09-96	22-09-96	42.20	42.40	42.30
23-09-96	07-02-97	42.35	42.55	42.45
08-02-97	18-03-97	42.65	42.85	42.75
19-03-97	06-04-97	43.10	43.30	43.20
07-04-97	20-07-97	43.55	43.75	43.65
21-07-97	17-08-97	44.00	44.20	44.10
18-08-97	25-10-97	44.45	44.65	44.55
26-10-97	23-11-97	44.85	45.15	45.00
24-11-97	01-02-98	45.30	45.60	45.45
02-02-98	04-07-98	46.15	46.45	46.30
05-07-98	17-10-98	46.95	47.25	47.10
18-10-98	17-07-99	48.35	48.65	48.50
18-07-99	29-11-99	49.35	49.65	49.50
30-11-99	10-08-2000	50.85	51.15	51.00
13-08-2000	-	53.85	54.15	54.00