

**The Effects of Exchange Rate Unification Policy on Inflation,
Black Market Premium and the Real Exchange Rate in Iran**

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Abstract

This paper provides an analysis of the two exchange rate unification policies and the post-unification official exchange rate policies in Iran. The paper argues that while the exchange rate unification policy in 1993 was in right direction, the inconsistency between the official exchange rate policy and the other macroeconomic policies was an important cause of the failure of the exchange rate unification policy in that year. The unification policy reduced black market premium but at the cost of higher inflation rate. The unification must have been preceded with some reforms in the structure of public budget to minimize the inflation cost. The paper also indicates that the black market real exchange rate better reflects changes in the underlying fundamentals of the economy than the official real exchange rate. This implies that the authorities should think of allowing some flexibility in the exchange rate system in the face of chronic double digit inflation rates. The paper also argues that although, the effects of the 2002 exchange rate unification policy are yet to come, there are real concerns about huge increases in public budget which may erode the favorable effects of the unification policy.

I. Introduction

In March 2002, Iranian government unified all official exchange rates and set the new rate very close to the black market exchange rate. Government had once resorted to the exchange rate unification policy in March 21 1993, but that policy, though in right direction, apparently failed and a multiple exchange rate system with devalued rates replaced the unified rate till March 21 2002. The main purposes of government to unify official exchange rates in 1993 and 2002 was to reduce black market premium, eliminate rent-seeking activities and social corruption, lower the administrative cost of multiple exchange rate system, rely more on market-determined exchange rates and to promote non-oil exports. The exchange rate unification policy was also recognized as a necessary step toward implementing other economic reforms and programs within the post-war Economic Development Plans.

The first exchange rate unification policy in 1993 seemed to be successful for a short period in terms of lowering the black market premium and promoting non-oil exports. However, its success was jeopardized in the middle of 1993 when the black market nominal exchange rate started depreciating increasingly and deviating from the so-called unified official rate and at the same time, inflation rate rose in the economy, eroding the real depreciation required for boosting non-oil exports. The second exchange rate unification policy seems to be more consistent with other macroeconomic policies and the foreign exchange reserve position of Iran's Central Bank. The effects of this policy on inflation, black market premium, and the real exchange rate have yet to be realized.

The purpose of this paper is to analyze the effects of 1993 exchange rate unification policy on inflation, black market premium and real exchange rates in Iran as well as to predict the corresponding effects for the 2002 exchange rate unification policy. The rest of the paper consists of the following sections. Section II deals with a brief theory on exchange rate unification policy. Section III introduces a brief history of Iran's currency in the black market. Indices of the black market premium and the real exchange rate are constructed and analyzed in

section IV. Section V presents an analysis of inflation. Finally in section VI, the main conclusions are derived.

II. Exchange Rate Unification: Theory in Brief

The theoretical analysis of exchange rate unification has often been conducted within the theoretical analysis of dual exchange rate systems in which an official nominal exchange rate coexist with a black or a black market nominal exchange rate¹. The underlying framework of the most theoretical analyses is an "stock-flow" model in which the black market premium is jointly determined by the asset market conditions and the black market current account². In the stock-flow model, foreign currency is considered as a financial asset and individual portfolio motives play an important role in the determination of the black market premium³. Exchange rate unification policy has theoretically and empirically been discussed from different angles. There are two main related issues surrounding the outcome of an exchange rate unification policy. The first one is the issue of "efficiency-inflation" trade-off⁴. The black market premium is often considered as an implicit tax on exports. On the one hand, a decrease in the premium will promote exports and increase efficiency in the allocation of economic resources. On the other hand, the black market premium is a hidden source of revenue for government if government is a net buyer of foreign exchange currency from the private sector. In the absence of alternative tax instruments, exchange rate unification will result in a loss in public revenue. If government

¹In the literature the words "black" and "black" are respectively used for the legal and illegal markets for foreign exchange. In the case of Iran, the unofficial market for foreign exchange has been quasi-legal prior to May 1995 and has been announced illegal since May 1995.

²The black market current account is the difference between smuggled exports and smuggled imports. The black market premium is defined as $(\pi - e) / e$ where π and e are the black market and official nominal exchange rates respectively.

³Examples of the stock-flow models are Dornbusch (1983), Edwards (1989), Lizondo (1987 and 1991), and Pinto (1991). See Agenor (1992) for a nice summary of the black market theory and evidence

⁴See Pinto (1989) for details.

intends to maintain its ongoing real expenditures, it will print money and resort to inflationary financing of the deficit. The efficiency-inflation trade-off implies that a successful unification policy must be preceded or accompanied by a fiscal reform and tight monetary policy. It has been argued that if government is a net seller of foreign exchange to the private sector, the unification may lower the black market premium without causing high inflation.

The second related issue deals with the long-run effects of unification on real exchange rate. Whether the unification will entail a sustainable real depreciation in favor of tradable sectors or not depends very much on the post-unification official exchange rate regime and the accompanied fiscal and monetary policies. In this regard, if the black market premium rises continuously again after the unification policy, the real devaluation which is initially obtained at the time of unification will be eroded. Sustainable unification needs choice of a suitable exchange rate system. Persistent fiscal deficit and continuous monetary expansion are not compatible with unification to a fixed exchange rate. In this case, a crawling peg or a managed float are preferred to a fixed rate. Unification to a fixed exchange rate must be supported by the government's credible commitment to pursue tight fiscal and monetary policies. Inconsistency between exchange rate unification policy and other macroeconomic policies has been evidenced to be the main cause of failure of exchange rate unification attempts. On the one hand, the expectation is that the unification will bring changes in the relative price of non-tradable in favor of tradable and consequently a resource movement from the non-tradable sector to the tradable sector. On the other hand, post-unification high inflation rates erode the real devaluation and further official devaluation is required. The cycle of inflation and devaluation will continue unless government takes a serious step in reforming fiscal and monetary policies.

III. History of the Black Market for Foreign Currency in Iran

Black markets in Iranian currency, Rial, after declining and practically disappearing in 1959, reappeared on an enlarged scale in the summer of 1960, when a political and economic crisis erupted. Unlicensed transactions were estimated at over Rls 3 million a month during periods of stress in the following years⁵. The skill of the Central Bank kept black market trading volume within limits, but not without difficulty and loss of foreign exchange. By early 1967, black market transactions had all but ceased and dealings in the officially tolerated free market centered among the money-changers in the bazaars. In early 1970, the Rial was again at Rls 80.00 per U.S. Dollar. The devaluations of the U.S. Dollar in the last semester of 1971 made no impact on the unofficial dealings of the Rial. Fluctuations remained narrow, and the unit listed at or near the Rls 77.00 level through 1972, weakening to Rls 79.00 in January 1973.

As the Shah's throne became shakier, the Rial began to fall sharply. By September 1978, capital flight was running at US\$ 50 million weekly. During one two-week period US\$ 700 million fled the country, as foreign exchange controls were tightened. By the beginning of 1979, an estimated total of US\$ 10 billion had reportedly sought safety outside of Iran. With the economy in shambles, the Rial tumbled from one new low to another, hitting a record Rls 121.00 per U.S. Dollar in June. Following the replacement of the Shah in January 1989 by an Islamic government, daily volume in the free or black market declined to US\$ 4 million.

The black market for foreign currency became very active in 1980 and spread throughout the economy as a result of the increasing inability of the government to satisfy all sources of demand for foreign currency at the official rate. A high black market premium on the official nominal exchange rate and rent-seeking activities were the main consequences.

With the breakout of the war with Iraq in 1980 and a huge reduction in oil exports, the Iranian currency was put under further pressure. Some improvement followed, especially in the spring of 1983 when some foreign exchange controls were eased. However, the Rial resumed its

⁵The history and statistics of the black market in this section prior to 1985 were obtained from the series of *World Currency Yearbook* and after 1985 from the *Central Bank of Iran I.R.*

downward plunge in 1984, with monthly lows taking it to Rls 622.00 per U.S. Dollar at year end. After some minor improvement, the Rial took off on a downward spiral, reaching a new record low of Rls 1343.00 per U.S. Dollar at the end of July 1988. Following a sudden resurgence as a result of ending the war with Iraq, which took the Rial to Rls 647.00 per US Dollar in August 1988 , Iran's unit then resumed its plunge to new lows, reaching Rls. 1447.00 per US Dollar in February 1993 (one month before the exchange rate unification time).

In March 21 1993, the Central Bank unified all the official nominal exchange rates and set the new unified nominal rate close to the black market rate at that time⁶. The unified official nominal rate moved closely to the black market free rate for about six months. In the middle of 1993, the black market nominal rate started deviating again from the official rate. Accordingly, the Central Bank adjusted the official rate several times to keep the black market premium as low as possible. However, the difference between the two rates continuously increased and in May 1995 the value of Rial at this market declined to Rls. 5118 per US Dollar, the lowest level during the post-revolution period up to that year.

At the end of May 1995, the Central Bank resorted again to a fixed exchange rate system, announcing a basic rate for all transactions and an export rate for non-oil exports. Black market activities were prohibited and "export surrender requirement" was reinforced. The Central Bank practically returned to a multiple exchange rate system and the unification apparently failed even though the official nominal rates had significantly been devalued

Following huge increases in oil revenue in the last two years and marinating stability in black market exchange rate, the Central Bank decided once again to unify the official exchange rates in March 21 2002. Learning from the past, the Central Bank seems to be more certain this time about the consequences of the exchange rate unification policy, specially its effects on inflation and public budget. The new exchange rate unification policy apparently put an end to

⁶the old official rate was still being used for subsidized commodities such as medicine, wheat etc.

all public and semi-public access to foreign exchange rents and all government subsidies to economic sectors have become transparent in terms of domestic currency.

Although the 2002 exchange rate unification policy seems to be more promising and better coordinated with other macroeconomic policies, there are concerns about huge increases in the fiscal budget of government in 2002 and 2003 and it is not very clear whether all these increases in public budget are due to the exchange rate unification policy alone or other programs. The budget of government corporations, banking system, and government- dependent corporations has increased by about 50 percent in 2002. This may jeopardize the positive effects of the exchange rate unification policy.

The effects of the 2002 exchange rate unification policy on inflation, black market premium and the real exchange rate are yet to come. In the next section, we will look closely at the indices of these variables during the pre-and-post revolution period to see the trends and volatilities. This helps us to have a better perspective about the future effects of the 2002 exchange rate unification policy on these variables.

IV. Black Market Premium and the Real Exchange

In a real world where small economies are more or less open, real exchange rate has been argued and evidenced to be the main determinant of resource allocation upon which performance of tradable sector depends very much. Purchasing power parity theory defines the real exchange rate as follows:

$$RER = P/\pi.P^* \quad (1)$$

where P and P^* are the prices of domestic and foreign goods respectively, and π is the nominal exchange rate defined as the domestic value of a unit of foreign currency. An increase (decrease) in P/P^* is called a real exchange rate appreciation (depreciation) and implies a rise

(fall) in the relative price of domestic goods in terms of foreign goods. The real exchange rate can alternatively be defined as the relative price of tradable in terms of non-tradable goods. Although the two definitions differ, the former is used as a proxy for the latter in most empirical studies⁷.

When prices are flexible and the nominal exchange rate is freely floating, the *RER* depends only on the real fundamentals of the economy. Although monetary shocks will have no effect on the long-run *RER*, they can have short-run effects when prices are sluggish. Changes in the real fundamentals such as long-term productivity growth, the underlying capital outflow, the terms of trade and world economic conditions cause changes in the underlying conditions of demand and supply in the real sector and consequently lead to changes in the *RER*. Proponents of *PPP* theory believe that the equilibrium *RER* is constant⁸. Our view is that it depends upon real fundamentals that may change from time to time.

The choice of nominal exchange rate (π) is also controversial. Pinto (1991) makes a theoretical argument that, when the official market is rationed and domestic currency is only convertible in the floating black market at the free rate, imports purchased with official dollars are priced in domestic currency at their opportunity cost which is the black market nominal exchange rate. The unprecedented import compression and import controls enforced by the post-revolution government, together with the consequent rapid import price inflation, indicates that a large proportion of importable, especially consumer durables, were priced at the black market nominal exchange rate. Using regression analysis, Pesaran (1992) has found a strong positive correlation between the black market premium and domestic import prices. Bahmani-Oskooee (1993) also argues that "the black market exchange rate between the Rial and the dollar served as an indicator of present and future prices of imported as well as domestically produced goods. This was true of all goods and services regardless of whether the cost was incurred in the present

⁷For details on the relationship between the two definitions see Edwards (1989), pp. 1-8.

⁸For alternative definitions of the equilibrium real exchange rate see Williamson (1985), pp. 13-20.

or in the past. Whenever the dollar was up, so were the prices of all tradable and non-tradable goods." Taking all of this evidence into consideration, the black market nominal exchange rate seems more relevant than the official rate for constructing the RER, especially when both tradable and non-tradable prices are included. As will be argued later, the black market RER better reflects changes in both the pre-and-post revolution Iranian economy.

Figure 1

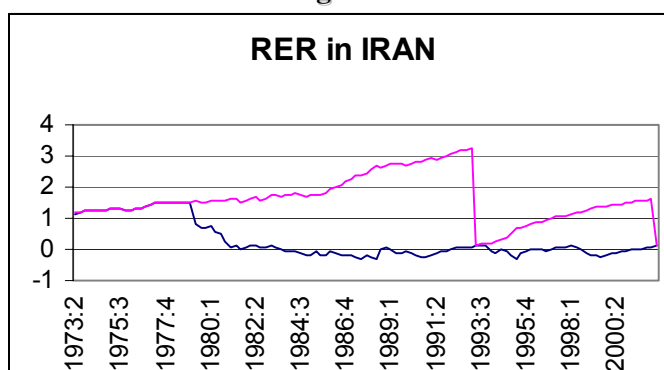


Figure 1 shows indices of black market and official real exchange rates during the period 1973.2-2002.2. It is evident from this figure that the two rates moved closely to each other prior to 1978 (Revolution Time) and then started increasingly to deviate from each other. It is also evident that the black market real exchange rate depreciated sharply at the beginning of the revolution because of changes in the fundamentals of the economy of which the most important one was the huge capital flight⁹ and sharp decline in oil revenues¹⁰.

Despite these changes in the fundamentals of the real exchange rate, Iranian government kept the official nominal exchange rate at the pre-revolution level and resorted to heavy foreign

⁹According to the *World Currency Yearbook*, about \$US 10 billion scaped from Iran at the beginning of the revolution.

¹⁰Although the price of oil tripled in 1978, Iran's oil revenue sharply declied because of huge reduction in the country's oil production and this decision was in fact the source of oil price shock in 1978.

exchange rationing. This caused Rial to be overvalued in the official market for a long time, despite continuous market pressures. As foreign exchange rationing became tighter and tighter, the gap between the official real exchange rate and the black market rate widened through time. At the same time, the economy faced with double digit inflation, corroborating with changes in the black market nominal exchange rate. Ignoring the huge real depreciation which occurred at the beginning of the revolution, Figure 1 clearly shows that the index of the black market real exchange rate, in comparison with the official rate, was more stable during the post revolution period, supporting the argument that in the long-run, the Purchasing Power Parity Theory approximately holds in Iran's economy. This implies that the black market real exchange rate better reflects the macroeconomic stance of the economy in general and real and nominal shocks in particular.

In March 21 1993, the first exchange rate unification policy was implemented and as a result of that, the overvalued official real exchange rate sharply depreciated and coincided with the black market rate (see Figure 1). Although the policy was in right direction, it was implemented too late and was not accompanied with fiscal or monetary restraint. As it was explained in the theory part, the exchange rate unification policy increases both prices and black market nominal exchange rate, having an ambiguous effect on the real exchange rate. It seems from Figure 1 that the exchange rate unification in 1993 caused the black market real exchange rate to depreciate for a short period and as a result non-oil exports increased. In the middle of 1993, the exchange rate unification policy turned into a chaos and the real burden of that on public budget became apparent. The effects of the exchange rate unification policy was eroded just because it was not accompanied by fiscal and monetary discipline. Government's debt to the banking system increased by about 60% and the nominal exchange rate in the black market started deviating again from the new official rate.

Facing with reductions in oil revenue and massive speculative attacks in the foreign exchange market, government fixed the official rate and put tough legal restraints on non-oil

exporters. What is evident from Figure 1 is the fact that the exchange rate unification policy failed to bring any significant change in the real exchange rate, supporting the argument again that macroeconomic policies seem very unlikely to change real exchange rate in long run. In summary, we can say that the exchange rate unification policy in 1993 was in right direction but not accompanied with necessary reforms in the structure of public budget.

Figure 1 also shows that the gap between the black market real exchange rate and the official rate increased again through time until 2002 when the second exchange rate unification policy was implemented. Having an smaller gap between these two rates in this time and a better reserve position, the Central Bank seems to be less worried about the side effects of the exchange rate unification policy in 2002. Whether the gap between the black market real exchange rate and the official one will be widened again or not, depends very much on fiscal and monetary policies on one hand and the exchange rate policy on the other hand. Fixing the official rate for a long time while continuing to pump money into the economy with insufficient foreign exchange to back it up, would undoubtedly widen the gap between the black rate and the official rate.

Black market premium is more or less is mirror image of the gap between the black market real exchange rate and the official rate. Figure 2 shows the black market premium during the period 1973.2-2002.2. Due to the shortage of foreign exchange and macroeconomic mismanagement in general and unwise exchange rate policy in particular, black market became every active during the post-revolution period and as a result, black market premium increased rapidly until 1993 when government unified the official exchange rates. The black market premium was more 2000% prior to the unification policy in 1993. High black market premium at that time was indicating that the exchanger rate unification policy might impose huge burden on the economy in terms of inflation and public debt and that actually occurred six months after March 1993. Had government changed the official nominal exchange rate shortly after the revolution because of the changes in fundamentals, the burden of the 1993 exchange rate policy

would have been reduced. Co-movements of prices and black market premium in most of the years after the revolution indicates that government resistance to do any devaluation policy was unjustifiable. Moreover, foreign exchange rationing system failed to meet any economic goals for which the exchange rate policy was set. In addition, massive rent-seeking activities and corruption occurred in the economy and Iranian top authorities have repeatedly mentioned these activities.

Figure 2

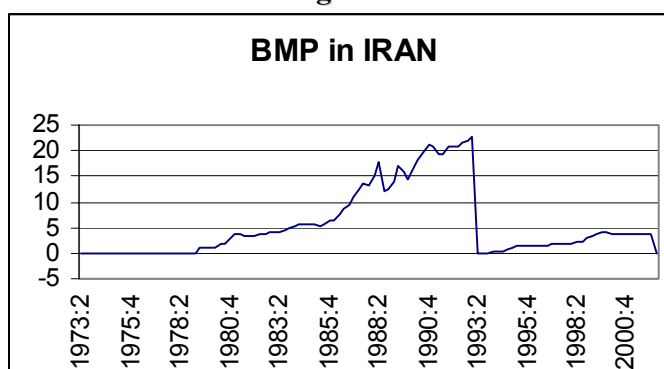


Figure 2 shows that the black market premium sharply decreased in 1993 as a result of the unification policy but it started increasing again through time. The 2002 exchange rate unification policy almost eliminated the black market premium and sectors of the economy are supposed to finance their foreign exchange needs at the new official rate. Evidently, this shows that government budget must be affected and maintaining fiscal and monetary discipline seems to be very difficult in near future. Although government is benefiting from high oil prices and it seems that the black market exchange rate remain very stable in near future, sharp increases in government budget and specially in the budget of public corporations bring concerns about the future effects of the policy on the economy. Government budget is due to increase by 50% at the end of the calendar year (March 21 2003). These concerns seem to be real if we consider the

fact that there are massive pressures on government to create more jobs for the youth which requires more budget and more money.

In summary, we can say that both Figures 1 and 2 clearly show that the post-revolution exchange rate policy prior to the 1993 exchange rate unification policy was unwise and inconsistent with requirements of the fundamentals of the economy. We can also say that the exchange rate unification policy in 1993 was badly designed because it was not supported by fiscal and monetary restraints which are necessary to maintain the favorable effects of the unification, if any, on the real exchange rate and black market premium. The effects of 2002 exchange rate unification policy are yet to come. The favorable effect on the black market premium seems to be maintained if the economy is not going to face any negative oil price shock or political uncertainty in near future which may cause capital flight and chaos in black market for foreign exchange.

V. Analysis of Inflation

Figure 3 shows quarterly inflation rates in Iran during the period 1973.2-2002.2. What is evident from this figure is the fact that the post-revolution inflation rate was, on average, higher than the pre-revolution rate. The figure shows that Iran had high inflation rates prior to 1978 (Revolution Time) because of the first oil price shock in 1974 and huge increases in domestic demand. The quarterly inflation rate increased to 6.9% in the second quarter of 1974.

Figure 3

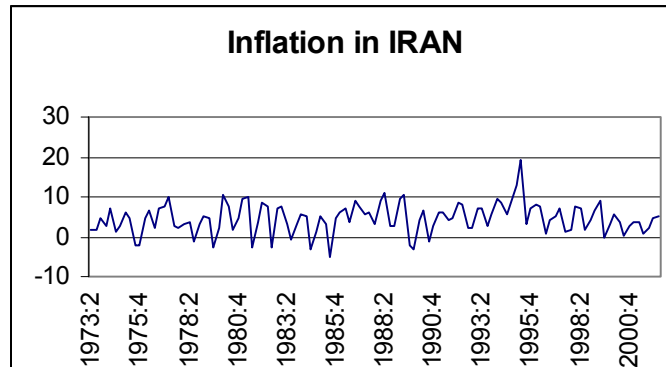


Figure 3 shows that over the entire period, the quarterly inflation rate was never beyond 10% except in the first and second quarter of 1995 when the burden of the exchange rate unification on public budget and consequently money supply became evident. The quarterly inflation rates in these two periods were 13.1% and 19.5% respectively. Yearly inflation rate went down to its chronic double digit number in the third quarter of 1995. It seems that the exchange rate unification policy had a significant effect on inflation rate in a very short run, but in the long run, inflation rate is mainly determined by monetary growth if oil prices and relative prices of tradable in term of non-tradable remain stable which has not been the case in Iran.

Inflation has another feature in the Iranian economy. Iranian economy is exposed to oil price shocks and these shocks will affect not only GDP but also the composition of the GDP. As a result of this disproportionate effect of oil price shock on GDP components, changes in the consumer price index (CPI) may not fully reveals how much the whole economy is inflated and how relative price of tradable goods change in terms of non-tradable. For this reason, the GDP deflator better reflects the inflated economy than the CPI index. To support our argument, it is quite useful to look at the differences between the two rates in the Iranian economy.

Figure 4

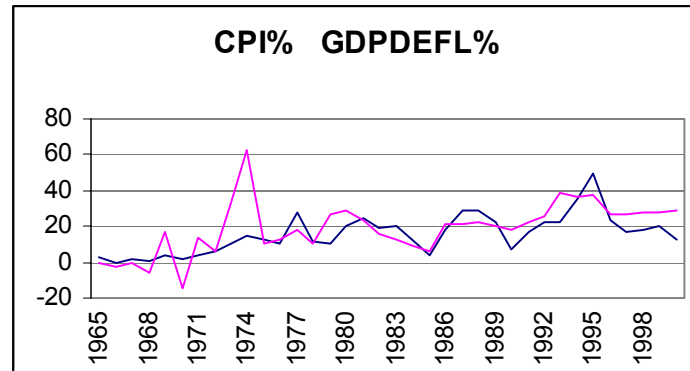


Figure 4 shows annual inflation rates based on GDP deflator and the CPI index. Although the two rates have more or less the same trend, there are significant differences between them at the time of oil price shocks. In 1974, GDP deflator increased by about 60% while CPI index increased by less than 20%. This difference indicates that the first oil price shock in 1974 changed the composition of GDP. The share of government expenditures in GDP sharply increased. In recent years, we have observed significant differences between the two indices. For example in 1999 and 2000 the CPI-based inflation rates were 20.1% and 12.6 % respectively. However, the GDP deflator inflation rates were 30.1% and 28.7% in those years respectively. Changes in money supply in those years are also consistent with inflation rates based on GDP deflator.

These huge differences indicate one important feature of the Iranian economy and this the so-called “Dutch” disease. Oil windfalls in recent years boost investment in the non-tradable construction sector at the price of sluggishness in the tradable sectors and as a result of that, the economy had a lop-sided growth in recent years. This situation seems to continue in couple of years ahead unless an unexpected negative oil price shock or a political chaos hit the economy. What we can learn from the past history of Iran is the fact that “Dutch” disease has been one of the problem of the economy and will continue to be the case even though there are many other structural problems and inefficiencies.

VI. Conclusions

There is no doubt that the Islamic revolution in 1978 and the second oil price shock in 1979 brought fundamental changes in the Iranian economy. These changes required that the official nominal exchange rate to be set higher than the pre-revolution level and since Iranian government was not willing to respond correctly to these fundamental changes, black market foreign exchange became very active. Since then, the movement of the black market premium was very consistent with double digit inflation rates which indicated the fact that Iran's black market real exchange rate better reflects the fundamentals of the economy than the official rate

Overvalued official exchange rates within a foreign exchange rationing system were not sustainable in the long run and imposed massive administrative cost and rent-seeking activities on the Iranian economy. The exchange rate unification policy in 1993 was implemented to reduce these costs but it was not very effective in bringing any significant real depreciation. The policy was effective in reducing the black market premium but at the same time caused higher inflation rates, eroding its effect on the real exchange rate. The unification policy in 1993, though in right direction, was not coordinated with other macroeconomic policies especially fiscal policy. The government must have done some reforms in the structure of public budget in general and that of public corporations in particular. The central bank must also have had sufficient foreign exchange reserve to support the unified rate.

The exchange rate unification policy in 2002 seems to be more accurately implemented and government and the central bank are less worried about its negative effects on the economy. However, the huge increases in public budget that are due to come, bring real concerns about inflation rate and the real exchange rate in near future. Although, the foreign exchange reserves of the economy is in good condition, the future is very uncertain. The real exchange rate is on an upward trend in favor of non-tradable sectors and especially the construction sector. The economy is growing lop-sided and there is sluggishness in the private tradable sectors.

Although the current official nominal exchange rate has been set very close to the black market rate, the central bank's future foreign exchange policy is not very clear and

investors have not an unambiguous perspective in this regard. If the current fixed rate is going to be maintained independently of money growth and government deficit, the real exchange rate will be very overvalued in couple of years and the history repeats. Now that the central bank has sufficient foreign exchange reserves and inflation rate is quite stable, government should think of doing some reforms in the trade and financial sectors as well as in public corporations.

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