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## Exchange Rate Regime Considerations in an Oil Economy: The Case of the Islamic Republic of Iran

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**IMF Working Paper**

Middle Eastern Department

**Exchange Rate Regime Considerations in an Oil Economy: The Case of the Islamic Republic of Iran**

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**Abstract**

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This paper provides a brief overview of the evolution of exchange rate policy in the Islamic Republic of Iran from 1993 to 2002 and reviews the basic criteria for the choice of the exchange rate regime in the medium term. The analysis highlights the merits of an intermediate regime which would allow the authorities to smooth out excessive short-term exchange rate fluctuations while letting nominal exchange rate movements facilitate real exchange rate adjustments called for by major oil price shocks.

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## I. INTRODUCTION

1. From the 1970s until the March 2002 unification, the exchange rate system of the Islamic Republic of Iran was heavily controlled, featuring multiple exchange rate practices with associated exchange restrictions and import controls. The two remaining official exchange rates of the Iranian rial were unified in March 2002, after which the authorities adopted a market-based managed floating exchange rate system. This paper discusses issues related to the choice of the exchange rate regime in the medium term.

2. The next section summarizes the main features of the exchange rate system in the period from 1993 to 2002 and the experience with the 1993 unification attempt. Section III gives a brief overview of the criteria for exchange rate regime choice. Section IV frames the debate concerning the choice of the exchange rate regime in a brief analysis of the relevant aspects of the Iranian economy; and Section V concludes the analysis.

## II. THE 1993 UNIFICATION AND THE FOREIGN EXCHANGE SYSTEM FROM 1993–2002<sup>2</sup>

3. Prior to March 1993, three official rates—the basic rate, the competitive rate, and the floating rate—were used within the banking system, and a parallel market for foreign exchange operated outside the banking system.<sup>3</sup> The basic official rate was applied to oil export receipts, imports of basic necessities, and official debt repayments. The competitive rate was applied to intermediate and capital goods imports, which were not eligible for the official rate. The floating rate, which was determined by the banks taking into account the parallel market rate, was applied to the remaining transactions in the banking system. In March 1993, the three official rates were unified at a rate which was much more depreciated than the previous level of the basic and competitive official rates, while some foreign exchange restrictions were relaxed. The new rate was determined on a daily basis by Bank Markazi Jomhouri Islami Iran (BMJII) taking into account the parallel rate. However, the unified rate was not used in a comprehensive manner, as foreign exchange was still provided at the former basic rate for essential imports and

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<sup>2</sup> This section draws on Sundararajan, Lazare, and Williams (1999).

<sup>3</sup> The parallel market in Iran has been an amalgam of several active and closely linked markets, including the offshore market located at Dubai (used mainly for transferring worker's remittances from abroad), an officially recognized parallel market operated by domestic commercial banks until the March 2002 unification (used for transactions associated with local foreign currency holdings sourced from abroad and services transactions), and the illegal curb market. With strong oil export revenues and import liberalization from 2000/01 onwards, most current account transactions were shifted to official markets, and parallel market transactions are likely to have been mainly restricted to certain capital market activities, as evidenced by the decline in the premium of the parallel market exchange rate over official market rates.

for the repayments of certain debts contracted prior to the unification. This resulted in large quasi-fiscal losses, financed by an expansion of the net domestic assets of the BMJII (Table 1).

Table 1. Iran: Selected Economic Indicators, 1991/92–1994/95

	1991/92	1992/93	1993/94	1994/95
Central government balance (percent of GDP)	-3.5	-3.0	-7.0	-4.5
Iranian crude oil price (US\$ per barrel)	16.1	16.8	15.3	17.1
Real GDP at factor cost growth (percent)	13.6	3.8	1.2	2.3
M2 growth (percent)	25.0	24.7	37.8	29.4
M1 growth (percent)	22.6	18.9	38.0	37.3
Base money growth (percent)	16.1	16.4	26.2	35.0
CPI inflation (end-of-period, percent)	22.5	21.9	26.4	34.2
Parallel market depreciation (end-of-period, percent)	0.8	10.1	41.0	55.6

Sources: IMF, World Economic Outlook database; Iranian authorities; and IMF staff estimates.

4. Combined with the impact of lower-than-expected oil prices, the liquidity expansion associated with lax financial policies brought about a rapid depreciation of the official rate after October 1993, reflecting the depreciation in the parallel market. In December 1993, the authorities discontinued the float, and fixed the official rate at Rls 1,750 per U.S. dollar. Subsequently, the premium of the parallel market exchange rate over the official rate increased steadily. In May 1994, a second official exchange rate which was applied to non-oil exports and to a list of imports and service payments was introduced (called the export rate and fixed at Rls 2,345 per U.S. dollar), with the objective of curbing the demand for nonessential imports and to promote exports.

5. In the year following the introduction of the export rate in May 1994, the premium of the parallel market exchange rate over the official rates increased steadily due to high inflation and the expectations of tightened trade sanctions by the United States against Iran. In May 1995, surrender requirements for non-oil exports were increased to 100 percent, and the export rate was depreciated to Rls 3,000 per U.S. dollar. Due to high inflation in Iran relative to its trading partners and the appreciation of the U.S. dollar against other major currencies, the fixed official exchange rates appreciated by about 27 percent in real effective terms in 1996/97.

6. In early July 1997, a third exchange mechanism was introduced through the Tehran Stock Exchange (TSE), and a significant amount of imports were shifted to this market. Despite substantial depreciation, the TSE rate became increasingly appreciated relative to the parallel market rate.

7. In recognition of the need to reform the foreign exchange system on a sustainable basis, the authorities started to take firm initial reform steps in 1999/2000. Through an open deposit accounts facility established in May 1999, the BMJII absorbed a significant amount of commercial bank excess reserves, and significantly depreciated the TSE rate toward the parallel market rate, stabilizing the foreign exchange market. Following May 1999, the premium of the parallel market exchange rate over the TSE rate gradually declined from about 17 percent to less than 2 percent by February 2000, and imports financed at the official “export” rate were

gradually shifted to the TSE rate. The export rate was eliminated at end-March 2000, with the TSE rate becoming the key market-determined exchange rate, applied to all officially recognized current account transactions except for those related to imports of subsidized basic commodities and debt service payments, which continued to take place at the official rate of Rls 1,750 per U.S. dollar. The TSE rate has displayed considerable stability since the second half of 1999.

8. In March 2002, all foreign exchange transactions that formerly took place in the TSE market were shifted to a newly established interbank market. The basic official rate was eliminated, and the exchange rate was unified at the rate prevailing at the TSE market before the unification.

9. In connection with the March 2002 exchange rate unification, the authorities assumed the entire cost of the exchange rate difference arising from the unification on certain imports. The previously implicit foreign exchange subsidies associated with these imports have been to a large extent made explicit in the 2002/03 budget. The part of these costs associated with the imports of necessities will be met by an increase in the valuation of oil revenues which are allocated in the budget to finance these imports.<sup>4</sup> Further to these explicit subsidies, however, the central government has committed to cover the exchange rate differential associated with the obligations in letters of credit contracted by state-owned enterprises at the eliminated official rate, which is projected to amount to 3.2 percent of GDP. The 2002/03 budget envisages the use of Oil Stabilization Fund (OSF) funds and financing by the BMJII to cover these contingent liabilities. The authorities intend to phase out the explicit subsidies associated with the exchange rate unification in the medium term and to replace them with targeted transfers.

10. The approach of the Iranian authorities to exchange rate policy over the past decade indicates a strong preference toward maintaining stable nominal exchange rates, as revealed by the application of fixed official rates to many external transaction categories, particularly until 1997. An impediment to the sustenance of fixed official rates has been high inflation and the ensuing appreciation of the official rates in real terms, manifested by large premiums over the official exchange rates at the parallel market—fueled mainly by strong monetary expansion to finance the public sector. Since mid-1999, when the financing of a significant amount of imports was shifted to the TSE market, the exchange rate prevailing in the TSE market has also displayed considerable stability, thanks to heavy intervention by the BMJII, aided by strong oil revenues.

#### **A. Criteria for Exchange Rate Regime Choice**

11. The choice of the exchange rate regime can be made from a range of options with differing degrees of exchange rate flexibility (Box 1). The recent theoretical literature has

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<sup>4</sup> Imports of necessities include pharmaceutical products, medical appliances, certain services, fertilizers, defense items, scholarships, and capital goods for the state-owned enterprises.

stressed the importance of the nature of shocks impinging on the economy in determining the exchange rate regime which would be optimal in terms of stabilizing output (see for example, Buiter, Corsetti, and Pesenti, 1996; or Corden, 2002). If the shocks are predominantly external or real (such as terms-of-trade shocks), calling for changes in relative prices, exchange rate flexibility is desirable since it facilitates adjustments in the real exchange rate. On the other hand, if the shocks affecting the economy have predominantly domestic monetary origins, a fixed exchange rate is preferable, as money supply becomes endogenous under a fixed exchange rate regime and, therefore, adjusts to shocks to money demand with minimal impact on output.

12. The effectiveness of the nominal exchange rate in dealing with real shocks depends on the flexibility of labor markets. Movements in the nominal exchange rate translate into changes in the real exchange rate only if real wages are flexible and if the pass-through of exchange rate movements into domestic prices and wages are low. Given a degree of wage rigidity, the costs associated with exchange rate rigidity are lower the more mobile labor is among regions and sectors. In addition, the cost of exchange rate rigidity is lower if the economy is well diversified, since a shock to a particular industry is less significant for overall output in a diversified economy.

13. Empirical evidence suggests that terms-of-trade shocks account for an important amount of output fluctuations in developing countries, most of which rely on exports of primary commodities.<sup>5</sup> Cross-country econometric studies of the effectiveness of different exchange rate regimes in insulating the economy from terms-of-trade shocks support the claims of theoretical models. Confronted with negative terms-of-trade shocks, flexible exchange rates indeed appear to be associated with immediate large real depreciations and smaller losses in output growth compared to fixed exchange rate regimes (Broda, 2000).<sup>6</sup>

14. Terms-of-trade related output volatility is of great significance in economies that are largely oil-based. In these economies, oil price increases often result in booms of domestic demand, increased capital inflows and investment, and real exchange rate appreciations that are harmful for the development of the nonresource tradables sectors, as predicted by the Dutch disease hypothesis. While the volatility that such economies are faced with can be dealt with by implementing a fiscal policy that ensures that domestic demand is smoothed over time, exchange rate flexibility can play an important supporting role by facilitating rapid real

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<sup>5</sup> See for example Hausman and Gavin (1996).

<sup>6</sup> Levy-Yeyati and Sturzenegger (2002) also present cross-country econometric evidence that for developing countries, greater exchange rate flexibility is strongly associated with higher growth and less output volatility. Ghosh, Gulde, Ostry, and Wolf (1996) show that while on net terms per capita GDP growth was slightly faster and GDP variability higher under floating regimes compared with pegged regimes, growth was actually fastest and GDP variability lowest under intermediate regimes.

exchange rate adjustment in the aftermath of commodity price booms, and therefore help limit inefficient specialization in the nontradables sector.

### Box 1. Exchange Rate Regime Options

The selection of the exchange rate regime can be made from a wide spectrum ranging from firmly fixed to flexible exchange rates, with some overlap between managed flexibility, target bands, and crawling pegs. The main characteristics of the different regimes are briefly described below:

**Currency Board Arrangements (CBA):** Under a CBA, the value of the domestic currency against a selected foreign currency or a basket of currencies is fixed at a certain level, with explicit legislative support that precludes the adjustment to this fixed level and commits to cover a given portion of the domestic monetary base with foreign exchange reserves at the predetermined exchange rate (for example, the Lithuanian litas against the U.S. dollar from April 1994 to February 2002). The reserve cover of monetary base could be full or partial, and depending on the rigidity of the arrangement, the scope for independent monetary policy is fully or partially eliminated. Under a CBA with full reserve cover of the monetary base, the fluctuations of the monetary base match those in the balance of payments, which could prove rather volatile in commodity exporting countries.

**Fixed-but-Adjustable (Soft) Pegs:** Like CBAs, soft pegs imply the subordination of monetary policy toward maintaining the exchange rate peg. Greater openness to capital flows necessitates further monetary policy subordination, as attempts to back the monetary base with domestic assets over sustained periods of time could prove futile by leading to capital outflows (for example, Mexico in 1994). The degree of flexibility of the exchange rate path and, thus the degree of subordination of monetary policy, varies across alternative soft pegs as described below:

*Fixed peg against a single currency:* The value of the domestic currency is fixed at a certain level against a given foreign currency (for example, the Chinese renminbi against the U.S. dollar).

*Fixed peg against a basket:* The value of the currency is fixed at a certain level against a basket of currencies, usually of major trading partners, where the shares of the currencies in the basket are usually determined according to the shares of trade with those partners (for example, the Thai baht against an undisclosed basket until July 1997).

*Crawling peg:* The exchange rate against a single currency or a basket of currencies is periodically adjusted, either at a preannounced rate (for example, the Turkish lira against a U.S. dollar and euro basket from January 2000-March 2001) or in response to key indicators such as the inflation differential with major trading partners, as in a real exchange rate rule (for example, the Tunisian dinar during 1992-2000).

*Bands:* The exchange rate is only allowed to vary within either a horizontal band with fixed lower and upper limits (for example, the Danish krone against the euro since January 1999), or within a crawling band with limits that depreciate periodically (for example, the Hungarian forint against a currency basket from March 1995 to January 2000 and against the euro until end-September 2001).

**Floating Regimes:** Under an independently floating exchange regime, the exchange rate is freely determined in the foreign exchange market (for example, the Japanese yen). Any central bank intervention in the foreign exchange market is to prevent undue volatility in the exchange rate rather than to change the trend of the exchange rate. Deep and liquid foreign exchange markets, which are not dominated by a few agents that could influence the market clearing value of the exchange rate, are essential for the proper functioning of this system. Under managed floating regimes, interventions are more frequent, without any explicit commitment to a specific path of the exchange rate (for example, the Russian ruble since August 1998).



15. Despite the potential advantages of flexible exchange rates in stabilizing output, explicit or de facto official exchange rate pegs are relatively common among small open economies, including commodity exporters, due to concerns over the pass-through of exchange rate movements into domestic prices, credibility issues, and the costs of exchange rate volatility for holders of unhedged foreign currency denominated liabilities (The appendix lists the prevailing exchange rate regimes in selected oil-exporting economies). Such concerns are particularly pervasive in developing economies, as their underdeveloped financial markets rarely offer any instruments to hedge exchange rate risk, and their exchange rates are likely to display excessive volatility under floating regimes given their thin foreign exchange markets.

16. Ultimately, the choice of the degree of flexibility of the exchange rate regime depends on the objective function of the authorities, as regards the trade-off between the desire to dampen exchange rate volatility and to control inflation by using the exchange rate as a nominal anchor, and to reduce fluctuations in output by allowing the nominal exchange rate to absorb shocks. The discussion of the suitability of different exchange rate regimes for Iran will be organized around this trade-off. The following section reviews the aspects of the Iranian economy that are relevant for the exchange rate regime choice; the nature of output fluctuations, inflation, and the characteristics of financial markets.

### **III. MAIN CHARACTERISTICS OF THE IRANIAN ECONOMY**

#### **A. Nature of Output Fluctuations**

17. The Iranian economy is heavily dependent on oil revenues, with about 15 percent of nominal GDP originating in the oil sector during the period 1996/97–2000/01. Moreover, approximately 50 percent of government revenues and 70–75 percent of exports are derived from the oil sector. As the share of oil production in GDP has increased over the recent years, the correlation between the real value of oil income and the output growth of non-oil and non-agricultural sectors, such as manufacturing, construction, and services, appears to have become stronger (Figures 1 and 2). While the output growth of the manufacturing sector is likely to be correlated with oil production partly because crude oil is the main intermediate input to the petrochemicals industry, the output of services and construction industries, as well as a big portion of the output of the manufacturing industry, are destined to the domestic market and therefore have become increasingly dependent on oil-derived income.

18. The propagation of oil price fluctuations to the Iranian economy takes place mainly through its effects on the fiscal stance. Given that the production of crude oil is relatively fixed in the short term, Iran's crude oil export revenues, which accrue to the government, are highly correlated with the oil price (Figure 3). As political pressures to spend out of oil income are high, budgetary expenditures are rather procyclical with oil prices, and domestic demand booms induced by fiscal expansions in periods of high oil prices generate pressures for real exchange

rate appreciation (Figures 4 and 5).<sup>7</sup> With further trade liberalization and increased anchoring of domestic tradables prices with foreign prices, the adjustment to potential oil price and fiscal expenditure booms in the future is likely to entail booms in nontradables prices. This may hamper a much needed diversification of Iran's production and export bases by attracting excessive investment to the nontradable sector during oil booms.

19. Against a background of volatile oil revenues, the attainment of a growth path with a balanced industry structure would require the implementation of a prudent fiscal policy strategy that smoothes government expenditure over time, with the aim to minimize fluctuations in domestic absorption. In this regard, the adoption of fiscal rules to ensure that government savings are accumulated at the OSF in periods of strong oil revenues would be essential.<sup>8</sup>

20. Given the possibility that fiscal policy remains procyclical in the short term, the vulnerability of the Iranian income, output, and real exchange rate to oil price shocks underscores the importance of adopting an exchange rate regime which facilitates increased nominal exchange rate flexibility. The latter, by allowing for negative oil price shocks to be met by relatively rapid real exchange rate depreciations, would be expected to attenuate the negative effects of oil price downturns by increasing foreign and domestic demand for Iran's non-oil output.<sup>9</sup> On the other hand, booms in oil prices are likely to lead to nominal and real exchange rate appreciations that potentially harm non-oil export competitiveness, which underscores the importance of complementing exchange rate flexibility with policies that promote labor market flexibility and productivity growth.

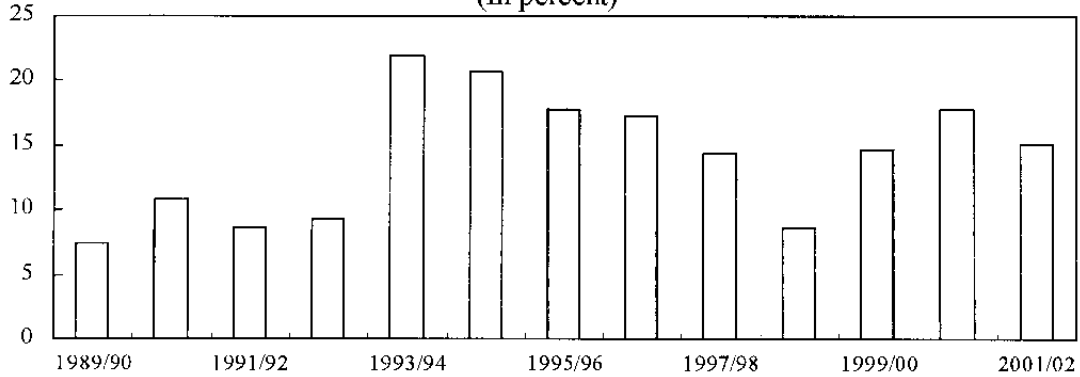
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<sup>7</sup> The fact that Iran had multiple exchange rates during the past decade complicates the interpretation of real exchange rate movements and their relation with other economic variables. Figure 5 charts the evolution of the Iranian crude oil price and the U.S.-Iran CPI based bilateral real exchange rate, based on the parallel market exchange rate, to capture the direction of change of a market based measure of the real exchange rate against changes in real government expenditure. This measure of the real exchange rate is used due to the availability of the required data for a long time period, and since it gives a good indication of how the real exchange rate would have behaved had there been a single, floating exchange rate, as proxied by the parallel market exchange rate.

<sup>8</sup> See Davis, Ossowski, Daniel, and Barnett (2001) on the use of stabilization funds in dealing with the economic consequences of natural resource booms.

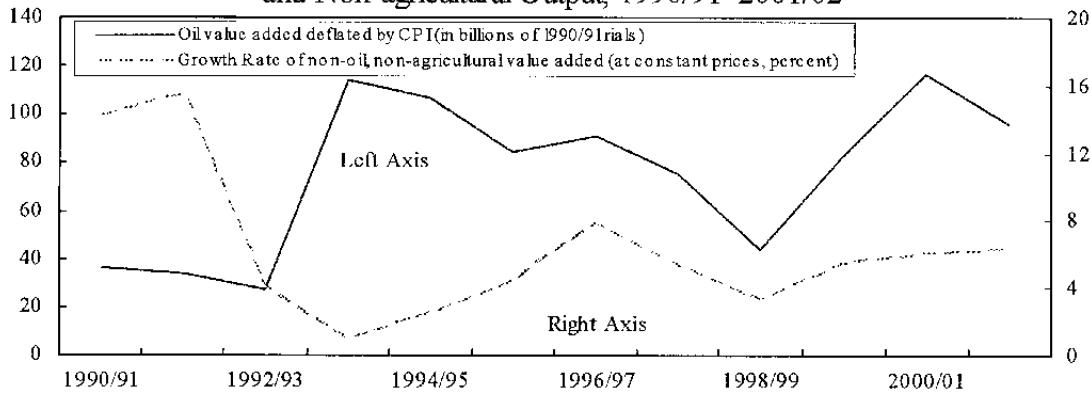
<sup>9</sup> The prediction that nominal exchange rate fluctuations could effectively bring about the desired alterations in the real exchange rate is based on the premise that real wages are reasonably flexible in Iran, as evidenced by the sizable fluctuations in real wages over the past decade, as well as the lack of any independent labor organizations and labor unions.

Figure 1. Islamic Republic of Iran: Share of the Oil Sector in GDP,  
1989/90–2001/02  
(In percent)



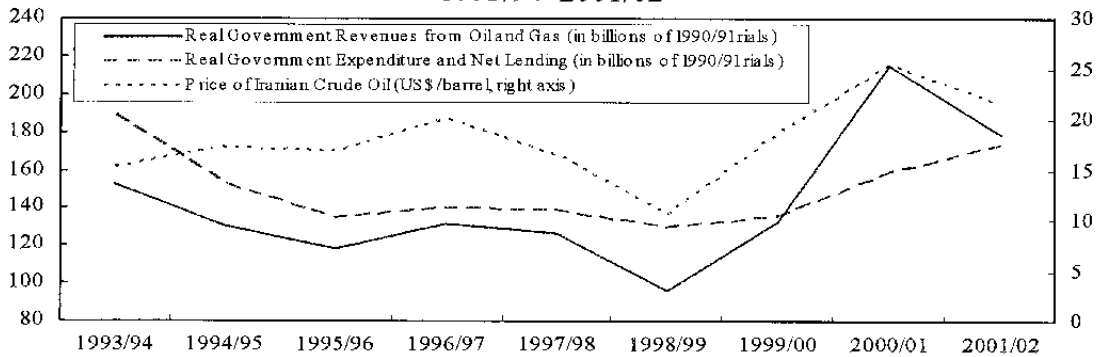
Sources: Iranian authorities; and IMF staff estimates.

Figure 2. Islamic Republic of Iran: Oil Income and Growth of Non-oil  
and Non-agricultural Output, 1990/91–2001/02



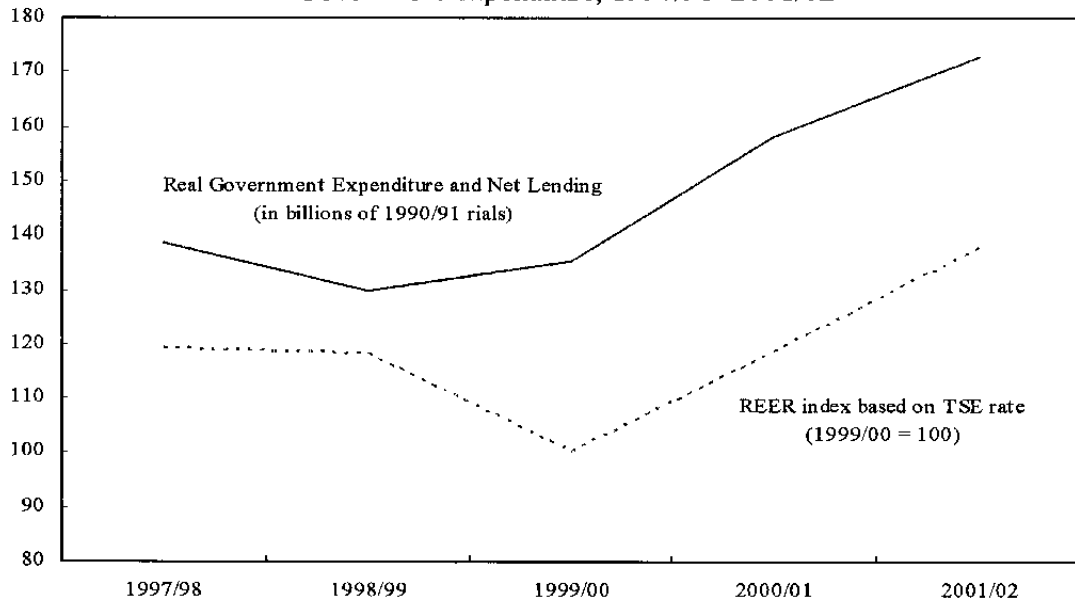
Sources: Iranian authorities; and IMF staff estimates.

Figure 3. Islamic Republic of Iran: Oil Prices and Fiscal Accounts,  
1993/94–2001/02



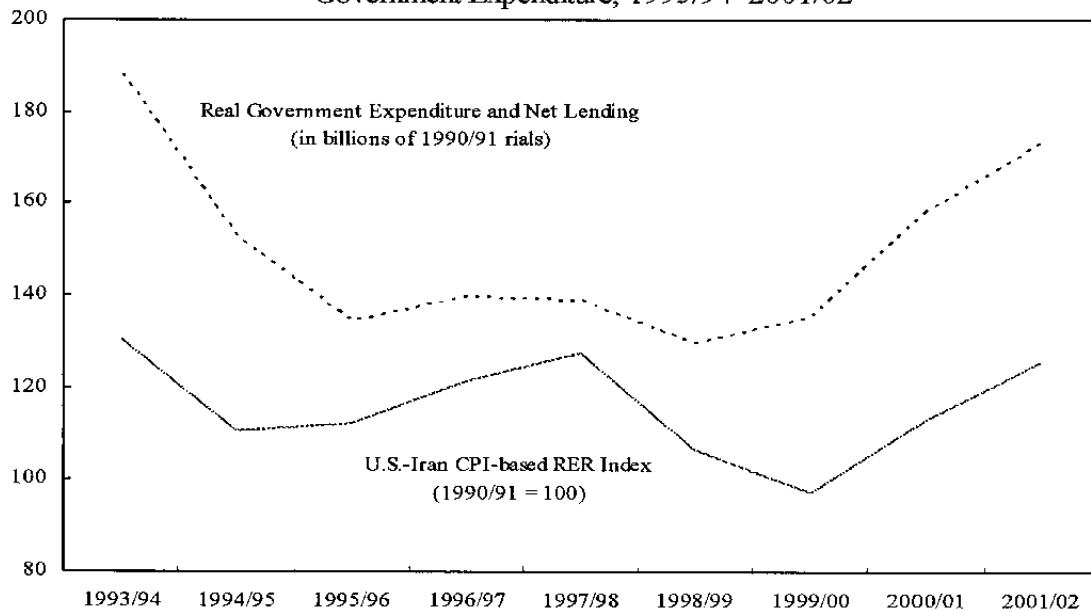
Sources: Iranian authorities; and IMF staff estimates.

Figure 4: Islamic Republic of Iran: TSE-based REER and Real Government Expenditure, 1997/98–2001/02



Sources: Iranian authorities; and IMF staff estimates.

Figure 5: Islamic Republic of Iran: Real Exchange Rate and Real Government Expenditure, 1993/94–2001/02



Sources: Iranian authorities; and IMF staff estimates.

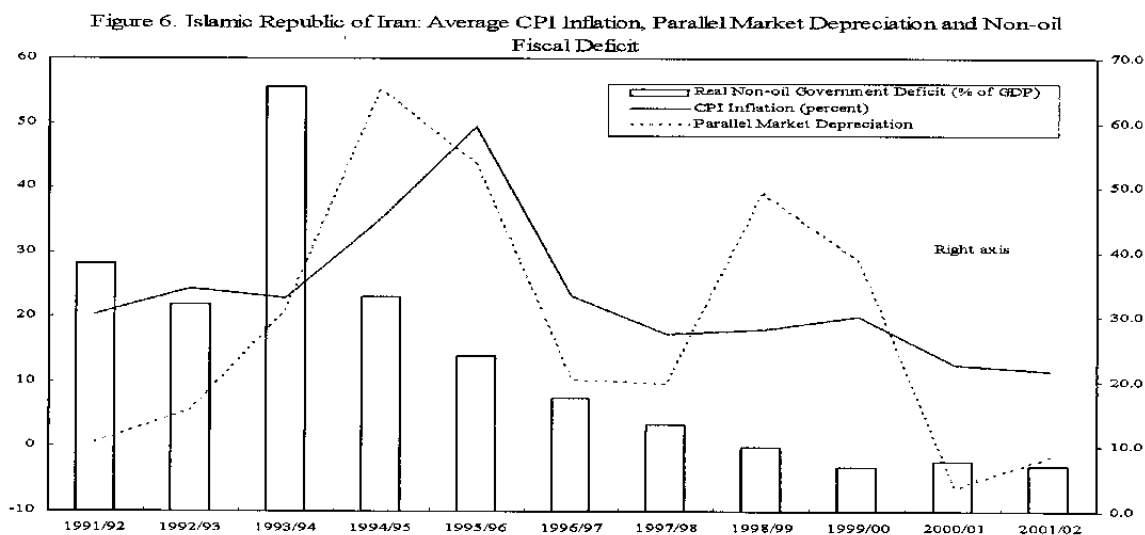
## B. Inflation control

21. Iran has experienced double digit inflation since the 1970s (Figure 6), with inflation being on a declining path since 1999/2000. The main driving force behind high inflation in the long run has been credit expansion to finance public sector deficits. However, econometric research for the period 1990/91–2001/02 (Celasun and Goswami, forthcoming) shows that the rate of nominal depreciation at the parallel market also has had a direct short-term positive impact on inflation. This is most likely due to the importance of the depreciation of the exchange rate in the formation of inflationary expectations, as well as its indirect impact by lowering the demand for domestic monetary balances, since the parallel market depreciation represents the opportunity cost of holding Iranian currency vis-à-vis foreign currency obtained through the parallel market as a hedge against inflation (Celasun and Goswami, forthcoming).<sup>10</sup> Moreover, the liberalization of trade in recent years has tightened the relationship between the exchange rate and the domestic prices of tradable goods, due to increased competition from imports. In the past two years, for example, the stability of the TSE rate has contributed to a drop in the inflation of tradables to single digit levels, despite strong growth in monetary aggregates. Looking ahead, with further trade liberalization and import penetration, the pass-through of the movements of the unified exchange rate into domestic inflation may increase over time, particularly if the inflation rate remains high.<sup>11</sup>

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<sup>10</sup> The stability of the TSE and parallel market exchange rates made possible by the abundance of oil revenues since 2000/01, the high rates of return on domestic financial instruments such as the Central Bank Participation Papers (CPPs) and the reduction in inflation in the recent years may have reduced the extent of currency substitution and the importance of the parallel market rate in the formation of inflationary expectations. However, no statistically significant break was detected for the relationship between inflation and its determinants from 1990/91–2001/02, including the parallel market depreciation, suggesting that a potential reduction in supply to the foreign currency market and a parallel market depreciation can rapidly increase inflation.

<sup>11</sup> Choudri and Hakura (2001) present empirical evidence that the pass-through of exchange rate movements into inflation is more rapid and larger in high inflation environments.



Sources: Iranian authorities; and IMF staff estimates.

22. While an exchange regime involving a commitment to a certain rate, such as a fixed or crawling peg, may serve the purpose of stabilizing inflation well in the short run, its sustainability would necessitate a buildup of large foreign currency reserves, and the strict implementation of a conservative fiscal policy which aims to delink government expenditure from oil price fluctuations. Without meeting these preconditions, either forced exchange rate adjustments during oil price declines would likely wipe out any short-term gains in inflation reduction, or if the exchange rate peg is sustained, any real exchange rate depreciation that is called for by an oil price decline would have to be met by a costly domestic deflation. In the case of the adoption of a flexible exchange rate regime, inflation control would rely mainly on the targeting of monetary aggregates, the success of which would depend on the removal of fiscal dominance over central bank operations and the adoption of effective instruments of liquidity management. Additionally, given that the pass-through of exchange rate movements into inflation is more rapid and larger in high inflation environments, the sustenance of disinflation efforts would be key for achieving greater inflation stability in a flexible exchange rate system.

### C. Structure of financial and foreign exchange markets

23. Iran's financial system is guided by the principles of Islamic finance, operates under heavy government control, and is relatively underdeveloped. This does not provide an environment where holders of foreign-currency-denominated debt, most notably importers, could effectively hedge themselves against exchange rate risk. This, in turn, would likely present the BMJII with strong incentives to manage the official exchange rate around a smooth

and predictable path in the near future, to minimize the costs associated with exchange rate volatility.<sup>12</sup> On the other hand, the heavy management of the exchange rate would likely have the effect of reducing incentives to hedge, which might hamper the development of the financial markets.

24. Given that the majority of Iranian crude oil export revenues accrue to the government and are supplied to the foreign exchange market by the BMJII, and given the limited degree of capital account convertibility, the BMJII has absolute and relative dominance in the foreign exchange market. Therefore, the technical conditions of the foreign exchange market are unlikely to be suitable for the adoption of a free float of the exchange rate in the near future.

#### IV. DISCUSSION AND CONCLUSION

25. The review of the criteria for exchange rate regime choice in the context of the Iranian economy highlights the relative merits of an intermediate regime compared to a strong commitment to a peg or a free float. The significant impact of oil price movements on the Iranian economy suggests that an exchange rate regime which allows for the nominal exchange rate to fluctuate in response to oil price shocks would be beneficial in terms of dampening economic fluctuations and promoting growth. On the other hand, a freely floating exchange rate would neither be desirable because of the potential adverse effects of excessive exchange rate volatility on inflation and balance sheets that are not hedged against exchange rate risk, nor practical in the near term given the supply dominance of the BMJII in the foreign exchange market.

26. The options among intermediate regimes can be broadly categorized and ordered into three regimes which offer an increasing degree of discretion in exchange rate management but a decreasing degree of inflation control through exchange rate policy: the fixed-but-adjustable exchange rate regime, a crawling peg or a band, and a managed float.

27. Under a fixed-but-adjustable rate regime, the nominal exchange rate would be kept constant unless there is a significant external shock, such as an oil price shock, in which case the level of the exchange rate would be adjusted. While this regime would help stabilize inflation in the interim periods of exchange rate fixity, the discrete exchange rate adjustments would be disruptive for inflation performance and balance sheets in the case of depreciations and for non-oil exporters in the case of appreciations. Moreover, if inflation remains high, inducing strong real exchange rate appreciations, the occasional adjustments and their detrimental effects might be larger. Finally, given the volatile behavior of oil prices, the timing and size of the needed adjustment would be subject to considerable uncertainty.

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<sup>12</sup> As noted by McKinnon (2000), incomplete financial markets make it difficult and expensive for importers to hedge foreign exchange rate risk in most developing countries.

28. Under a crawling peg or a band, the exchange rate or its fluctuation margins would be periodically adjusted at a fixed rate or in response to changes in selected quantitative indicators, such as inflation differentials with trading partners. The exchange rate would serve as a nominal anchor as long as its path is smooth and predictable, which would contribute to a relatively stable inflation rate. As the choice of the rate of crawl and the width of the band would be predetermined, this exchange rate policy framework might not offer a sufficient degree of flexibility in the event of a large oil price shock, unless the band is sufficiently large.

29. Under a managed floating regime, there would be no official commitment to any exchange rate path, which would endow exchange rate policy with greater flexibility in the case of unforeseen changes in fundamentals, including oil price changes. In the event of any large shock, the central bank could use its discretion to target a smooth transition to the exchange rate level warranted by the fundamentals without reneging on any precommitments regarding the exchange rate path. In the absence of significant shocks to the economy, a relatively smooth path of the exchange rate could be targeted to stabilize inflation and to minimize the costs of exchange rate volatility for holders of foreign currency denominated liabilities.

30. The Iranian authorities announced their adoption of a managed floating exchange rate regime at the time of the exchange rate unification in March 2002, but kept the exchange rate against the U.S. dollar stable from March 2002–July 2002. Given the beneficial role that the exchange rate can play in the adjustment to oil price shocks, it is important that the authorities allow the exchange rate to increasingly reflect market forces and to prevent the building up of expectations of a de facto pegged exchange rate. This would give economic agents incentives to develop means to cope with increased exchange rate volatility in the future.

31. The most important precondition for the well-functioning of any exchange rate policy in Iran would be the implementation of a prudent fiscal policy that eliminates the procyclicality of fiscal spending with oil prices, in order to prevent undue swings in the real exchange rate which could harm the development of the non-oil export sectors of the economy. Also, the elimination of any fiscal dominance over monetary management is a key precondition for the proper coordination of monetary and exchange rate policies to attain favorable inflation outcomes.



**Exchange Rate Arrangements of Selected Oil-based Economies, 2002**

	Share of Oil and Gas Exports in GDP, 1995-2000 (average, in percent)	Exchange Arrangement 1/
Algeria	27.2	Managed floating with no pre-announced path for the exchange rate
Kuwait	43.0	Pegged to an undisclosed basket of currencies
Nigeria	20.7	Managed floating with no pre-announced path for the exchange rate
Norway	14.3	Independently floating
Qatar	32.9	Pegged to the U.S. dollar
República Bolivariana De Venezuela	19.1	Independently floating
Saudi Arabia	31.4	Pegged to the SDR
Socialist People's Libyan Arab Jamahiriya	25.4	Pegged to the SDR
United Arab Emirates	27.9	Pegged to the SDR

Sources: IFS, IMF staff estimates.

1/ As classified in the *Annual Report on Exchange Arrangements and Exchange Restrictions*, IMF, 2002.

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