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Islamic Republic of Iran: Selected Issues and Statistical Appendix

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ISLAMIC REPUBLIC OF IRAN

Selected Issues and Statistical Appendix

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September 4, 2002

Contents Page

Text Boxes

Tables

Figures

Statistical Appendix Tables

I. Overview

1. The Iranian authorities are implementing a number of reforms aimed at promoting market forces in resource allocation, opening up the economy to trade and foreign direct investment, promoting the role of the private sector in economic activity, and strengthening coordination between monetary and fiscal policies. These reforms raise a number of analytical issues which need to be discussed to shed light on the various policy options. This Selected Issues Paper presents five essays examining issues related to the choice of the exchange regime, the competitiveness of the non-oil economy, the monetary policy stance and inflation, fiscal sustainability, and the labor market. While each essay focuses on its core issue, links to other areas of economic policymaking are highlighted in the analysis.

2. Chapter II deals with the analytical considerations relating to the choice of the exchange regime. This issue came to prominence with the exchange rate unification of March 2002, which was a landmark reform that dramatically changed the economic policy framework. Chapter II concludes that a degree of flexibility in the exchange rate is needed at this juncture, given Iran's exposure to oil price shocks, its gradualism in fiscal adjustment and trade reforms, and the desire of the authorities to promote the development of non-oil activities. In this regard, the authorities' choice of a managed float exchange regime appears justified.

3. Chapter III examines the evolution of the competitiveness of the non-oil export sectors of the Iranian economy during the past 10 years. The analysis is made difficult by scant statistical data and distortive effects of various controls and the prevalence of explicit and implicit subsidization. The tentative result of this chapter is that competitiveness problems of non-oil activities are primarily due to structural impediments, but the problem could be compounded by a sustained real effective exchange rate appreciation.

4. Chapter IV analyzes money demand and inflation dynamics. Estimated money demand and inflation equations indicate that the stabilization of the foreign exchange market on account of strong oil revenues in 2000/01 and 2001/02 buoyed the demand for domestic money and contributed to the decline in inflation. Tests of model stability do not point to a structural shift in the inflation equation during the period of analysis. Chapter IV concludes that given that the scope for further money demand growth appears limited, continued strong money growth might lead to a disequilibrium in the money market in the near future and ultimately to an increase in inflation.

5. Chapter V provides a forward-looking analysis of long-term fiscal issues related to the allocation of oil wealth. Based on estimates of total oil wealth and permanent income in Iran, the section highlights the need to reduce government consumption out of oil and gas resources and to invest a large portion of government savings in financial

assets abroad as well as in domestic assets. The latter, however, would call for a careful examination of the expected rate of return, the absorptive capacity of the non-oil economy, and the need for macroeconomic policy to smooth out the effects of oil price shocks.

6. Labor market issues are presented in Chapter VI. As mentioned in the preceding chapters, the pace of labor market reforms is an important consideration in the choice of the exchange regime, competitiveness, the transmission mechanisms of monetary policy, and the speed of fiscal adjustment. Chapter VI adds demographic, social, and structural dimensions to the analysis of high unemployment in Iran. It also examines the authorities' current policy response and discusses alternative options to ease the pressing unemployment problem.

II. Exchange Rate Regime Considerations for the Islamic Republic of Iran[1]

This chapter provides a brief overview of the evolution of exchange rate policy in Iran from 1993 to 2002 and reviews the basic criteria for the choice of the exchange rate regime in the medium term. The significance of oil price fluctuations for Iranian business cycles suggests that an exchange rate regime that allows for nominal exchange rate flexibility would be beneficial in terms of dampening output volatility. On the other hand, the underdeveloped nature of foreign exchange and financial markets and the significant effect of exchange rate movements on inflation imply that short-term exchange rate volatility would be costly. 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.

A. Introduction

7. 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 chapter discusses issues related to the choice of the exchange rate regime in the medium term.

8. 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 C gives a brief overview of the criteria for exchange rate regime choice. Section D 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 E concludes the analysis.

B. The 1993 Unification and the Foreign Exchange System from 1993–2002

9. 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.[2] The basic official rate was applied to oil

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[1] Prepared by Oya Celasun (MED).

[2] 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.

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 Joumhouri 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 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 II-1).

Table II-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

Source: WEO database, Iranian authorities, and IMF staff estimates.

10. 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.

11. 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.

12. 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.

13. 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.

14. 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.

15. 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.[3] 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

[3] Imports of necessities include pharmaceutical products, medical appliances, certain services, fertilizers, defense items, scholarships, and capital goods for the state-owned enterprises.

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.

16. 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.

C. Criteria for Exchange Rate Regime Choice

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

18. 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.

Box II-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, 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, Tunisian dinar from 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 the euro since April 2000).

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, Russian ruble since August 1998).

19. 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.[4] 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).[5]

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

21. Despite the potential advantages of flexible exchange rates in stabilizing output, explicit or de facto official exchange rate pegs are 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. 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.

22. 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.

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[4] See for example Hausman and Gavin (1996).

[5] 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.

D. Main Characteristics of the Iranian Economy

Nature of Output Fluctuations

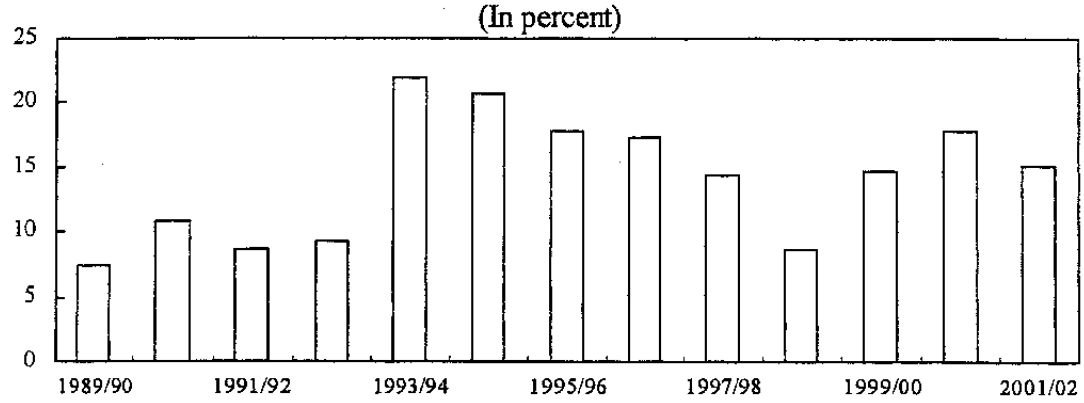
23. The Iranian economy is heavily dependent on oil revenues, with about 15 percent of nominal GDP originating in the oil sector during the period 1996/97–2000/01. Moreover, approximately 50 percent of government revenues and 70–75 percent of exports are derived from the oil sector. As the share of oil 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 II-1 and II-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.

24. 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 II-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 II-4 and II-5).[6] 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.

25. 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

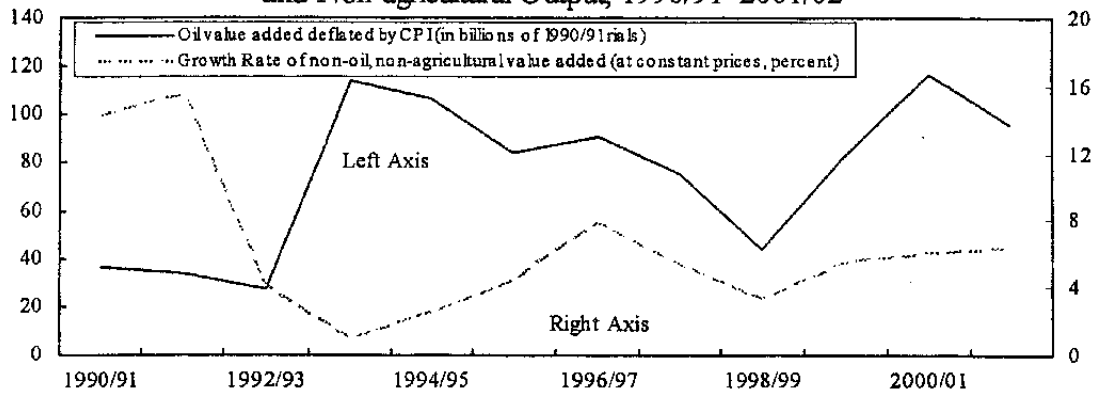
[6] The fact that Iran had multiple exchange rates during the past decade complicates the interpretation of real exchange rate movements and their relation with other economic variables. Figure I-5 charts the evolution of the Iranian crude oil price and the U.S.-Iran CPI based bilateral real exchange 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.

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



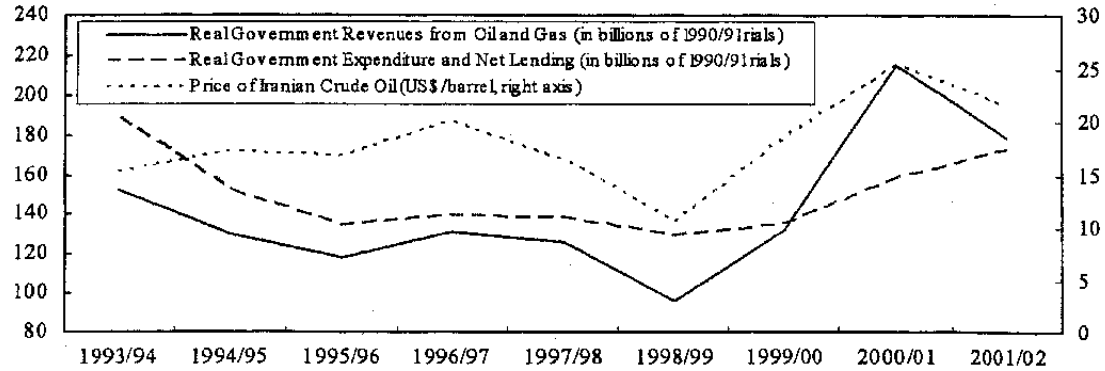
Sources: Iranian authorities; and IMF staff estimates.

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



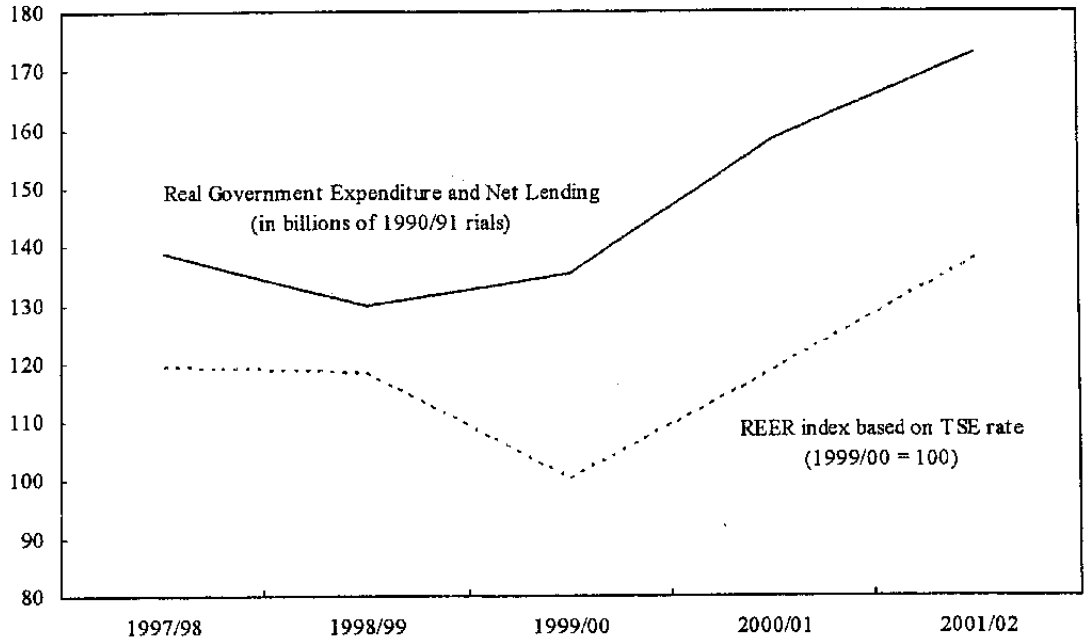
Sources: Iranian authorities; and IMF staff estimates.

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



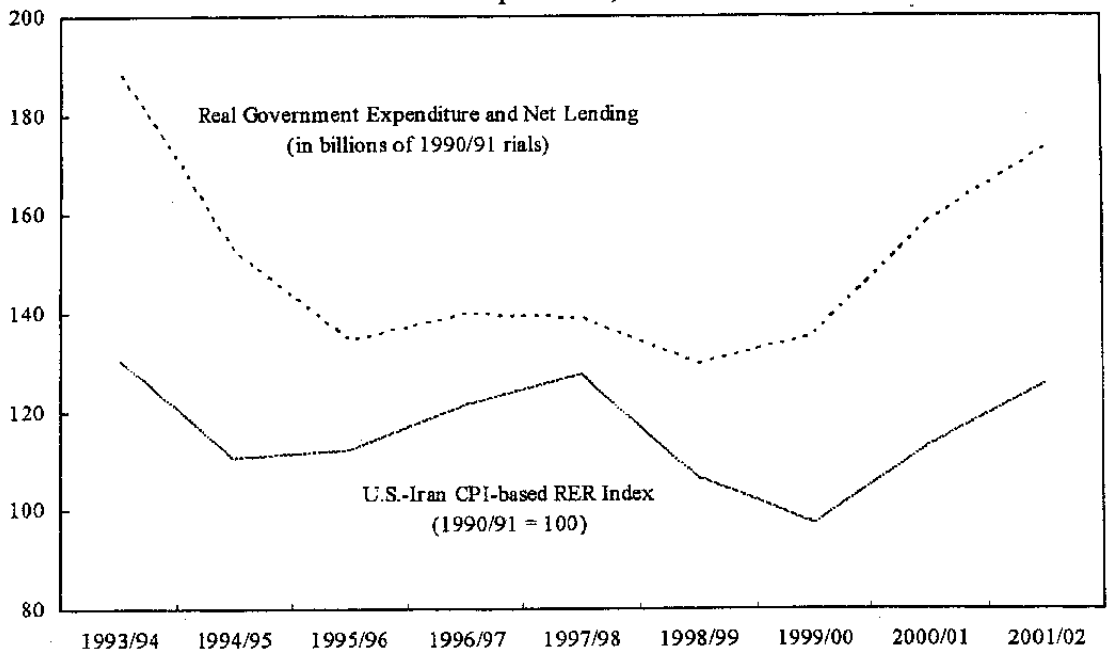
Sources: Iranian authorities; and IMF staff estimates.

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



Sources: Iranian authorities; and IMF staff estimates.

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



Sources: Iranian authorities; and IMF staff estimate

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.[7]

26. 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.[8] 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.

Inflation control

27. Iran has experienced double digit inflation since the 1970s (Table II-1), 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 (Chapter IV) 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 (Chapter IV).[9] Moreover, the liberalization of trade in recent years has tightened the relationship between the exchange rate and the

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[7] See Davis, Ossowski, Daniel, and Barnett (2001) on the use of stabilization funds in dealing with the economic consequences of natural resource booms.

[8] 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.

[9] 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.

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.[10]

28. 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 build-up 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.

Structure of financial and foreign exchange markets

29. Iran's financial system is guided by the principles of Islamic finance, operates under heavy government control, and is relatively under developed. 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.[11]

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[10] 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.

[11] 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.

30. 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.

E. Discussion and Conclusion

31. 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.

32. 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.

33. 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.

34. 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.

35. 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 precommittments 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.

36. The Iranian authorities have announced their adoption of a managed floating exchange rate regime at the time of the exchange rate unification in March 2002, but have 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.

37. 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.

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III. Competitiveness of the Non-oil Economy in Iran[12]

This chapter assesses various indicators of competitiveness of the non-oil tradable sector in Iran and examines some of its determinants, including the real exchange rate and structural factors. The note is organized as follows. Section A assesses the recent performance of the tradable non-oil sector. Section B reviews developments in the real exchange rate using various measures and examines their relation to competitiveness. Section C discusses the structural factors affecting competitiveness.

A. The Recent Performance of the Non-oil Tradable Sector

38. After the difficult years of 1995–97, non-oil exports have been growing since 1998 at an average annual rate of 10 percent in dollar terms (Box III-1). This performance was comparable to those of other countries in the region and countries with similar per capita incomes (Figures III-1). As a result, Iran managed to preserve its world-wide market share during 1996–2001, with a loss of positions on the European markets being offset by increased penetration in Asia and the Gulf countries (Figure III-2). However, the growth in non-oil exports somewhat decelerated over the last two years, resulting in a decline in the worldwide market share.

39. The petrochemicals sector was the main source of non-oil growth over the last few years. Having remained marginal until 1999, exports of petrochemicals took off as a result of recent joint ventures with foreign investors, and today account for more than 10 percent of total non-oil exports. Excluding petrochemicals, growth of other non-oil exports from 1999 to 2002 was only 2 percent per year on average (Figure III-1).

40. Import-substituting activities have performed strongly over the last several years. Indeed, manufacturing output, largely representing import substitution, has been increasing by about 9 percent annually over the last three years. However, while car manufacturing, metal industries, and chemicals have enjoyed rapid growth, the output of other industries such as textiles, food and paper manufacturing has been on a declining trend in recent years (Figure III-2).

[12] Prepared by Patrick Megarbane (MED).

Box III-1. Factors Affecting Non-oil Exports in Iran in the 1990s

Iran's non-oil export performance over the last decade has been mixed. Despite the low ratio of non-oil exports to GDP (which amounted to less than 5 percent in 2000), non-oil export performance in Iran during the 1990s was weaker than in middle-income countries. Non-oil exports grew in dollar terms by an average of 5.1 percent per year in Iran compared to 9.4 percent in the middle-income countries. Overall, non-oil export growth in Iran has been lower than the world average, though somewhat higher than in other poor performers in the region (Figure III-1).

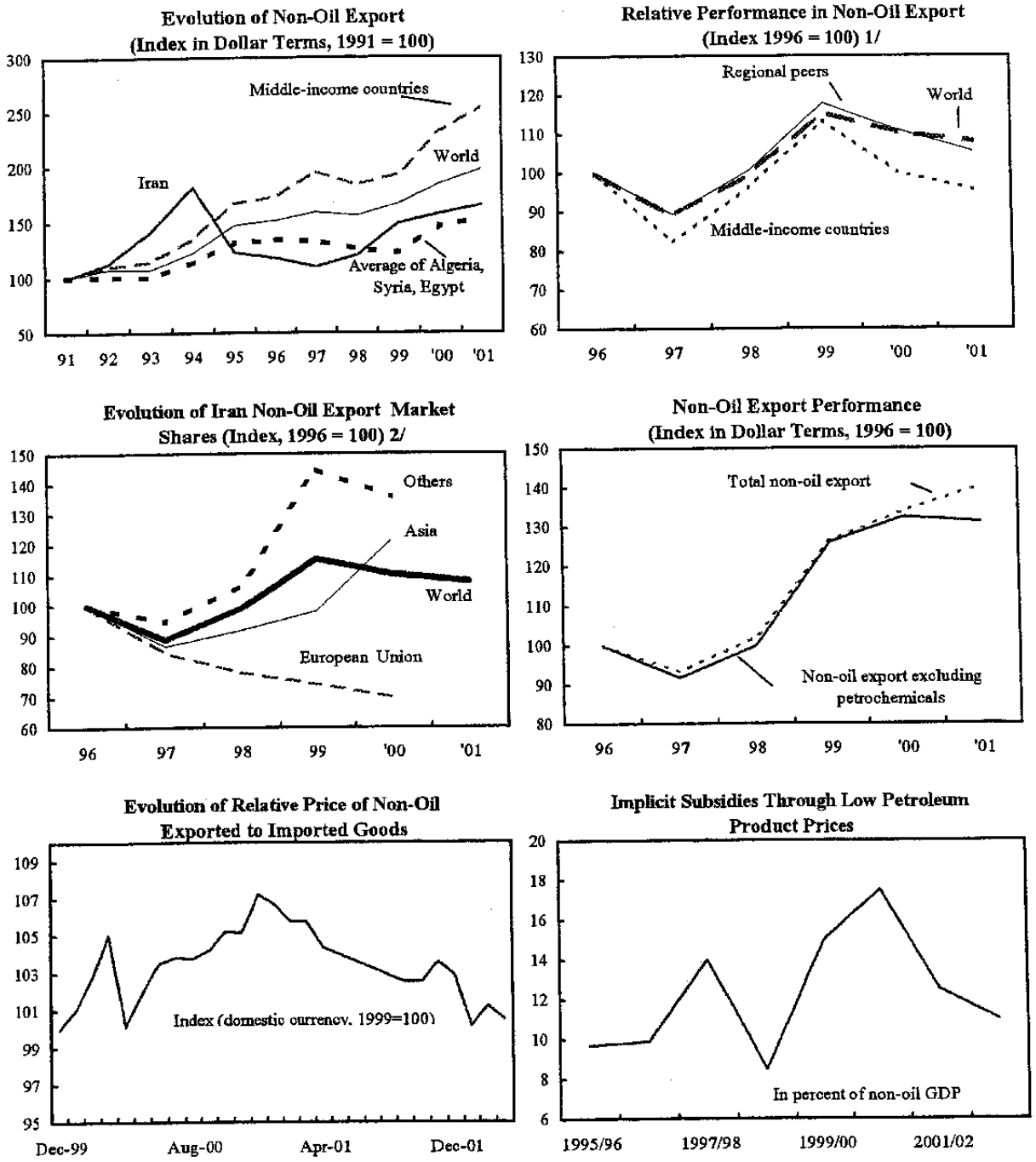
The export performance of the non-oil tradable sector in the 1990s largely reflected the structural and macroeconomic policies of Iran. During the early part of the decade, the government pursued expansionary fiscal policy in support of a large infrastructure reconstruction program and an ambitious social agenda. At the same time, the government initiated a program of economic policy reform, decontrolling domestic prices, removing many trade restrictions, liberalizing the exchange system, and encouraging private sector activity. As a result, GDP growth accelerated and macroeconomic indicators improved. Benefiting from the opening-up of the economy, non-oil exports surged, placing Iran in the ranks of the best performers in its income category and in the region. However, the government's expansionary policies resulted in large macroeconomic imbalances.

The years from 1995 to 1997 were characterized by a series of policy reversals and a sharp deterioration of economic performance. Under the pressures of a fall in oil prices, the U.S. embargo on trade and investment, and a tight debt repayment schedule, the expansionary government policies became unsustainable, which together with the impact of adverse external factors resulted in stagnation and inflation, and culminated in a debt crisis. In this context, the non-oil export sector was particularly constrained by (a) the excessive compression of imports (reaching up to 50 percent reduction in some years) needed to make room for external debt repayments as Iran's access to external financing was severely limited, (b) the extension of U.S. financial and economic sanctions that restricted market access to Iranian exports, and (c) the tightening of exchange controls, including the reinstitution of multiple exchange rates and the imposition of export repatriation and surrender requirements in an attempt to contain the unfolding foreign exchange crisis. As a result, non-oil exports fell to their level of the early 1990s.

Since 1997–98, Iran has initiated a series of reforms, with the recovery of oil prices since 2000 helping in stabilizing the economy and significantly easing the debt problem. Some progress has been achieved in reforming the areas relevant to the export sector: the various exchange rates have been progressively unified, exporters have been granted easier access to inputs at world prices, most export barriers have been removed, and a large number of nontariff barriers have been replaced by tariffs. As a result, non-oil exports recovered.

The composition and destination of Iranian exports has changed markedly since the early 1990s. Traditional exports (carpets and agricultural products) which in the early 1990s used to represent about 70 percent of non-oil exports, account today for less than 40 percent. Also, exports of home appliances, which accounted for 6 percent of non-oil exports, have become negligible. In contrast, exports of chemicals and hydrocarbons, which were marginal in the early 1990s, now account for 12 percent of non-oil exports. Similarly, the share of other exports have substantially increased. Concomitantly, the destination of Iranian exports has evolved noticeably, with the share of EU markets declining from 45 percent of non-oil exports in 1992–93 to less than 25 percent today, while the importance of Asia and the Gulf has increased substantially

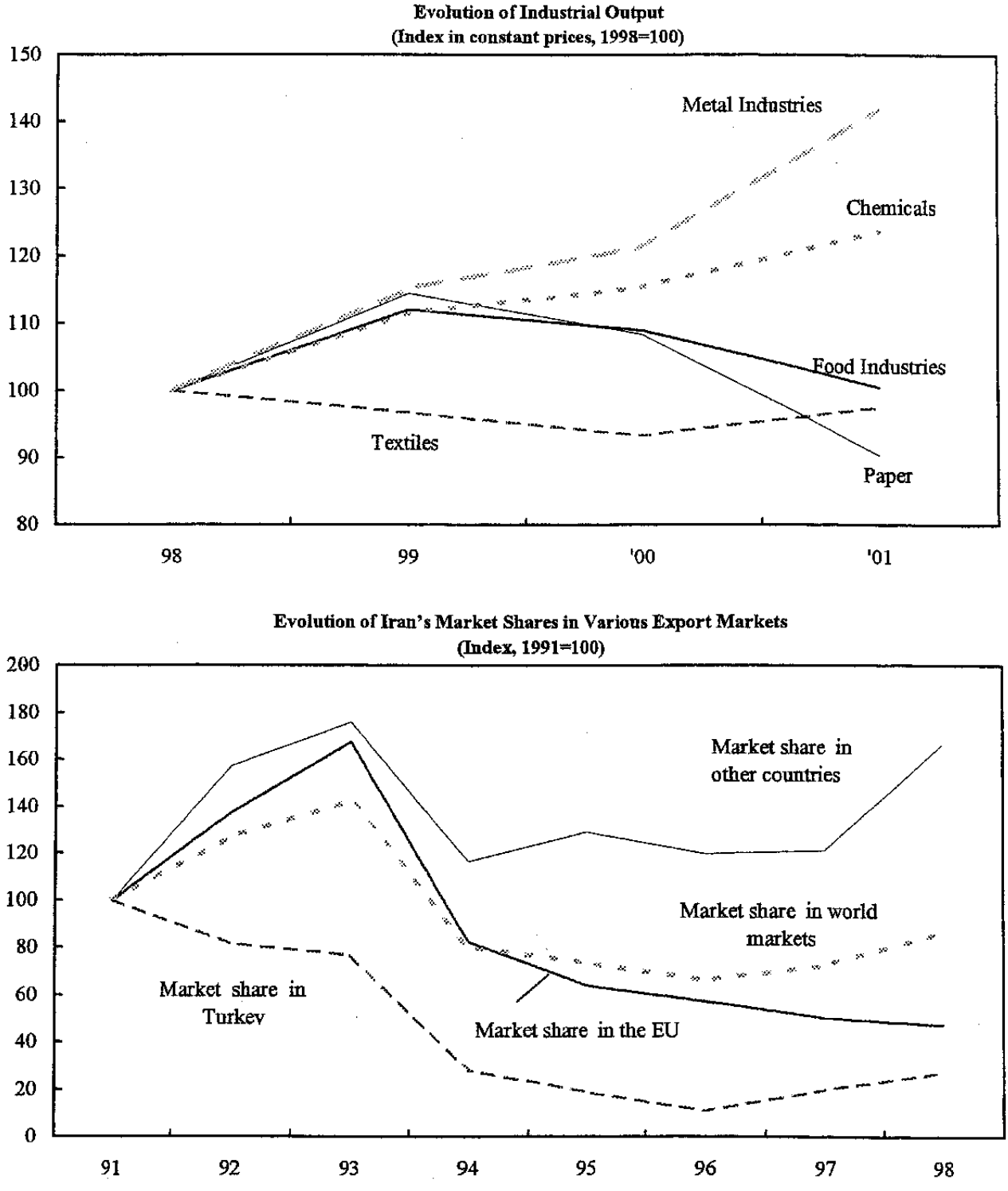
Figure III-1. Iran: Non-Oil Sector Indicators, 1991/92–2001/02



Source: Iranian authorities, and IMF staff estimations

1/ Ratios between Iran non-oil exports and the country grouping non-oil exports, valued in dollar terms and expressed in index. Regional Peers include Algeria, Egypt, Jordan, India, Indonesia, Malaysia, Pakistan, Syria, Tunisia, Turkey, Morocco.
2/ Market shares are ratios between Iran non-oil exports and the country grouping non-oil imports, valued in dollar terms and expressed in index.

Figure III-2. Iran: Industrial And Market Share Indicators, 1991–2001



Source: Iranian authorities, and IMF staff estimations

B. Movements in the Real Exchange Rate

41. The CPI-based real effective exchange rate (REER)[13] has been volatile over the last five years, with an appreciating trend emerging since end-1999. After appreciating through early-1998, the CPI-based REER, using the weighted average of nominal exchange rates,[14]depreciated during the period 1998–99, reflecting the variations in international oil prices, the inflation differential with Iran's trading partners, and the gradual devaluation of several official rates since 1998.[15] Since end-1999, the REER has appreciated by about 40 percent to about 20 percent above its average level of the last five years.[16] The most recent appreciation reflects a strengthening of the nominal effective exchange rate, as well as higher inflation differential with Iran's major trading partners. The real exchange rate now exceeds the previous peak level reached at end-1998 (Figures III-3).

42. The recent appreciation of the REER reflects an increase in the relative price of non-tradable to tradable goods (Figure III-3). After a decline following the sharp depreciation of the TSE exchange rate in the third quarter of 1998, the real exchange rate, as measured by the relative price of non-tradable to tradable goods, started appreciating since end-1999 to reach a cumulative real appreciation of 34 percent between end-1999 and end-2001.

43. The recent evolution of the REER in Iran contrasts with developments in comparable countries, where the real exchange rate has remained broadly stable (Figure III-3). The differences in trends appear to have been substantial and emerged over a relatively short period of time, indicating that the competitive position of the Iranian tradable sector might have deteriorated over the last few years only.

44. The appreciation of the REER is unlikely to have been fully justified by productivity gains. Recent studies have found that despite strong advances in education, the gains in overall productivity in Iran, as measured by the growth in total factor productivity (TFP), were very low throughout the 1990s and even negative during some years (Table III-1).

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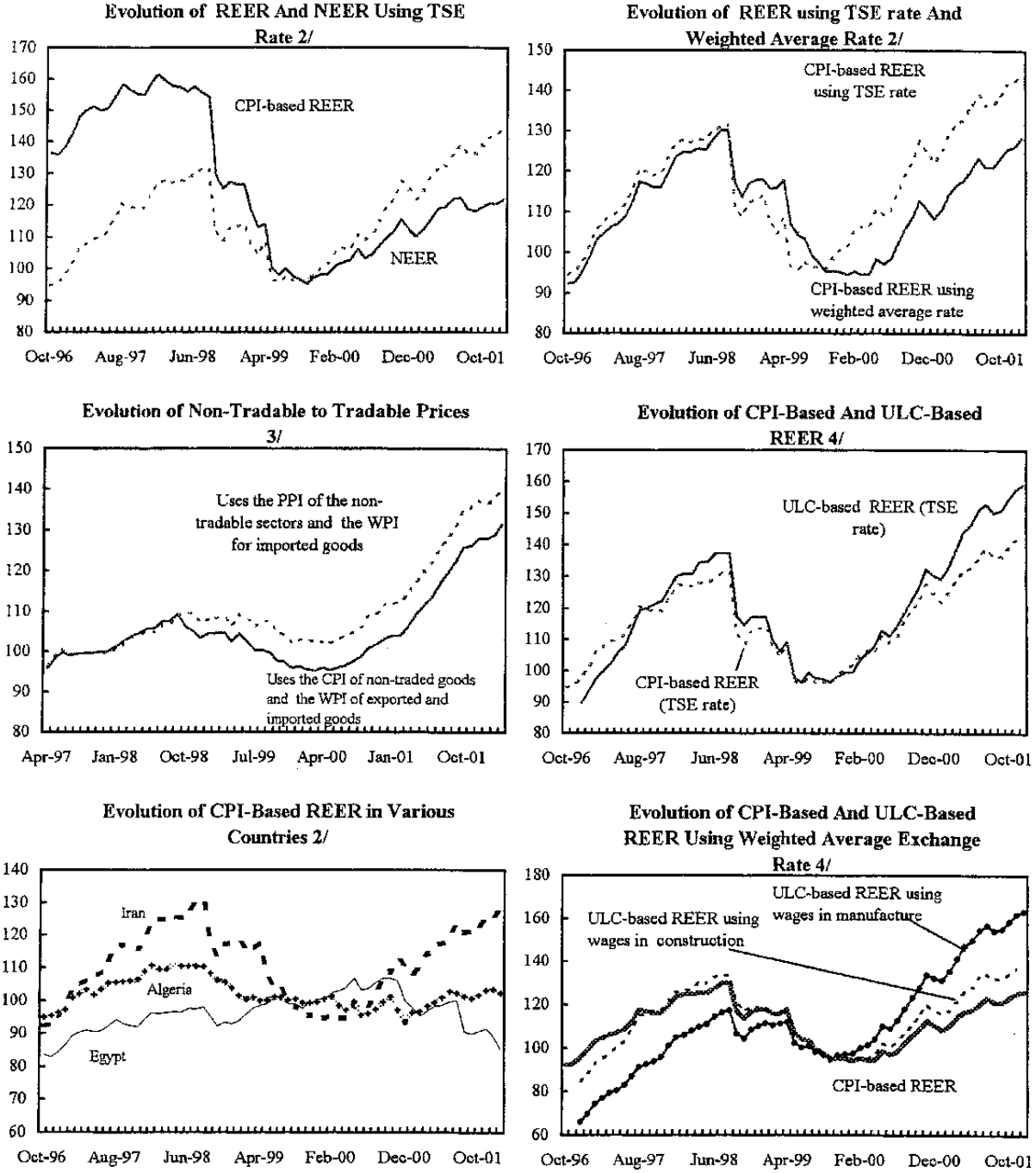
[13] The caveat regarding the use of CPI –based REER in assessing competitiveness is the existence of distortions from price controls and the fact that non-traded goods are included in the CPI basket while intermediate goods are not.

[14] The weights assigned to the Tehran Stock Exchange (TSE) and official exchange rates varied depending on the composition of transactions.

[15] For further indications on the underlying factors affecting the real exchange rate, see Chapter II.

[16] More specifically, the real appreciation amounted to 44 percent between Dec. 1999 and Dec. 2001 when using the TSE rate and to 35 percent when using the weighted average rate (Figure III-1).

Figure III-3. Iran: REER and NEER Developments, 1996/97–2001/02 1/



Sources: Iranian authorities, and IMF staff estimations

1/ Data presented as indices, 1990 = 100.
2/ Last observation: January 2002.
3/ Last observation: March 2002.
4/ Last observation: December 2001.

Table III-1. Islamic Republic of Iran: Evolution of Total Factor Productivity, 1991–99

	1991–95	1995–99
Average growth rate		
CBI research 1/	3.0	1.9
APO 2/	-0.3	-0.6
MPO 3/	-2.4	-0.2

1/ Growth determinants in Iran 1996–99, Massomeh Hajilee, CBI.
2/ Productivity Analysis, Asian Productivity Organization, 2001.
3/ Management and Planning Organization of Iran.

Notwithstanding the likely impact of the recent trade liberalization and other reforms, there is as yet no conclusive evidence that this trend has changed over the recent past. Accordingly, it is unlikely that the equilibrium real exchange rate in Iran has appreciated because of higher growth in productivity relative to trading partners.[17]

45. Also, the relative evolution of unit labor costs (ULC) has not offset the real appreciation of the exchange rate. In fact, wages in both the private and the public sectors have been increasing rapidly and, as a result, the ULC-based REER has appreciated by 45 percent since end-1999 (Figure III-3).[18]

46. Pro-cyclical fiscal policies in periods of high international oil prices have contributed to the appreciation of the real exchange rate. Until recently, fiscal policy had not smoothed out expenditure in the face of sharp increases in oil prices, thereby transmitting the terms-of-trade shocks to domestic demand. While excess demand in traded goods caused the decline

[17] Similarly, the relative non-oil terms of trade have remained stable over the last couple of years and thus are unlikely to have caused an appreciation of the equilibrium real exchange rate.

[18] This measure may be the most appropriate as a competitiveness indicator since it proxies production costs when combined with productivity and is an important factor in determining profitability. However, the measure misses some components of actual costs, such as capital and energy. The measurement of productivity, which underlies the ULC-based measure is difficult to assess in practice. As a proxy for productivity growth in manufacturing, we used the growth in the value-added per employee in the industrial sector. Two available series for wages were used: wages in the construction sector and wages in large manufacturing companies.

of the non-oil external balance, excess demand for non-traded goods resulted in increases in their price to preserve home-market equilibrium. In addition, the concomitant boom in construction since 1999 might have further exacerbated what could be seen as an episode of "Dutch Disease" (Table III-2).

Table III-2. Islamic Republic of Iran: Indicators of Dutch Disease, 1998/99–2000/01

	Average Levels in Index	
	1998/99	2000/01
Oil price (in dollars)	100.0	161.2
Real domestic demand	100.0	107.7
Budgetary expenditure in constant prices	100.0	120.6
Construction value-added in constant prices	100.0	119.4
Real effective exchange rate	100.0	123.8

Source: Fund staff estimates.

47. A number of offsetting factors have contributed to preserve the profitability and external competitiveness of the non-oil tradable sector and could explain why non-oil exports and import-competing industries have continued to grow under the combination of an appreciating REER and slow productivity growth. These factors include:

- **Utilization of excess capacity.** A large number of enterprises in the tradable sector operate with excess capacity, estimated in large manufacturing companies at about 40 percent in 1999/2000. In this context, rising domestic demand—underpinned by higher government spending—has mainly benefited domestic producers, in particular since a large share of the increased demand is directed to domestic suppliers. In this regard, the recent boom in construction has been a major factor behind the increase in output in some industries, including the metal and construction material industries. In presence of fixed costs of production, higher sales improve the financial position of the enterprises, offsetting to some extent the negative impact of the real appreciation.

- **Trade Protection.** The effects of recent trade liberalization might not have affected all sectors of the economy because of prevailing monopolistic practices and other market restrictions. Consequently, the reform process might have resulted so far in a net improvement of the environment for most companies in the exportable sector while still sheltering large segments of the import-competing industries. In this regard, industries that have enjoyed high effective protection (such as the heavy industry and the car industry) have performed strongly over the last few years. In

contrast, industries for which protection has been less effective due to smuggling (for instance, textiles), have registered lower and, in some cases, negative growth rates.

- **Increased subsidies.** In particular, the low domestic prices of petroleum products, which have not been raised in line with international prices, have given rise to a sizable increase in implicit subsidization. However, the implicit energy subsidy has been declining since 2001, implying that the offsetting effect of energy prices might be tapering off. Other policy measures, including tax exemptions might have also contributed to preserve the profitability of the tradable sector.

- **Cost reductions on imported inputs.** An appreciated currency, by reducing the relative cost of imported capital and inputs, could provide a net subsidy to some capital-intensive industries that sell their output domestically and enjoy high tariff protection from competing imports. Moreover, given the outdated capital stock in many sectors in Iran and the lack of an indigenous capital good sector, an appreciated currency might have stimulated investment which might have resulted in productivity gains and further offset the effects of the real appreciation. On the other hand, the effects of the real appreciation are likely to be largely negative on labor-intensive industries.

48. The impact of the above offsetting cost reductions may be diminishing, however, as trade liberalization proceeds, energy prices are raised, and excess capacity is utilized. Under these conditions, a further real appreciation might exacerbate the difficulties of the non-oil tradable sector through further deterioration of profitability, which, if sustained, could undermine the development of the non-oil tradable sector.

C. The Structural Impediments to Competitiveness

49. Iran's problems of competitiveness have been, and still remain to an important extent, of a structural nature.[19] Disentangling the various structural factors that hinder competitiveness in Iran may be difficult, but a number of factors are at the core of the problem, including public sector dominance of the economy, restrictive trade policies, and the lack of a competitive business environment.

- The far-reaching system of subsidies and protection provided to the public sector has raised entry barriers for private investors, deterred competition and encouraged monopolistic practices that tend to foster inefficiencies. In the absence of hard-budget constraints, state enterprises have generally had little incentive to restructure, reduce

[19] Competitiveness is determined by structural factors that extend far beyond the level of the real exchange rate. In particular, factors such as good governance, openness, adequate infrastructure, sound financial sector, flexible labor markets, and developed market institutions, in addition to technology, are important determinants of competitiveness (see Zinnes, 2001).

costs, and improve efficiency. Moreover, public enterprises tended to operate with excess labor and continue to suffer from an obsolete capital stock. As a result, despite significant budget transfers and implicit subsidies, a sizable number of state enterprises are loss-making (Table III-3).

Table III-3. Islamic Republic of Iran: Financial Position of Selected State Enterprises, 1994–99

	Annual Average 1994–99	
	In percent of GDP	In percent of revenue
Revenue	5.4	100.0
Opening expenditure	5.2	96.3
Operating balance	0.2	3.7
Current transfer from budget	0.0	0.1
Capital expenditure	2.9	54.9
Overall balance	-2.7	-51.1
Capital transfer from budget	1.3	24.8
Bank financing	0.2	3.1
Other sources	1.2	23.1

Source: Bank Markazi Jomhouri Islami Iran.

- The import restrictions that were in effect until last year—when most nontariff barriers were eliminated and replaced with tariffs—and the high tariff protection provided to import-competing industries have reinforced monopolistic practices in many sectors. Anti-competitive practices and monopolistic positions can take different forms, including tax exemptions, entry and foreign direct investment restrictions, and limited access to bank credit. Such an environment has not been conducive to efficiency, transfer of technology, and productivity gains. With the more recent advances in trade and exchange reform, however, coupled with efforts to attract foreign direct investment, gains in productivity could be achieved in the period ahead.

50. An acceleration of structural reforms over the medium-term would enhance competitiveness. In particular, further efforts to open up the economy, enhance domestic competition and increase the flexibility of the labor market could help the tradable sector adjust to the real exchange rate appreciation. On the other hand, in the absence of reforms that would eliminate the structural impediments to competitiveness, an active exchange rate policy leading to a significant depreciation of the exchange rate might not be sufficient to bring about a lasting improvement in the competitiveness of the non-oil sector.

Reference

Zinnes Eliat, and J. Sachs, 2001, "Benchmarking Competitiveness in transition Economies, Economics of Transitions," EBRO, Vol. 9(2), pp. 315–53.

IV. An Analysis of Money Demand and Inflation in the Islamic Republic of Iran: 1990–2001[20]

This study examines money demand and inflation dynamics in the Islamic Republic of Iran using a quarterly data set for the period 1990/91–2001/02, and tests whether the disinflationary trend from 2000/01–2001/02 against a backdrop of strong growth in monetary aggregates represents a structural break in the data. A long-run money market equilibrium condition is identified in the form of a cointegrating vector among real M1 balances, output, CPI inflation and the rate of depreciation of the Iranian rial in the parallel foreign exchange market. The short-run behavior of the change in the inflation of the non-administered component of CPI is modeled conditional on the disequilibria in the money market and the other variables that potentially impact inflation. The estimated money demand and inflation equations indicate that the stabilization of the foreign exchange market and the exchange rate on account of strong oil revenues from 2000/01–2001/02 buoyed the demand for domestic money and contributed to the decline in inflation. Tests of model stability do not point to a structural shift in the inflation equation during the period of analysis. Given that the scope for further money demand growth appears limited, however, continued strong money supply growth might lead to disequilibrium in the money market and an increase in inflation in the near future.

A. Introduction

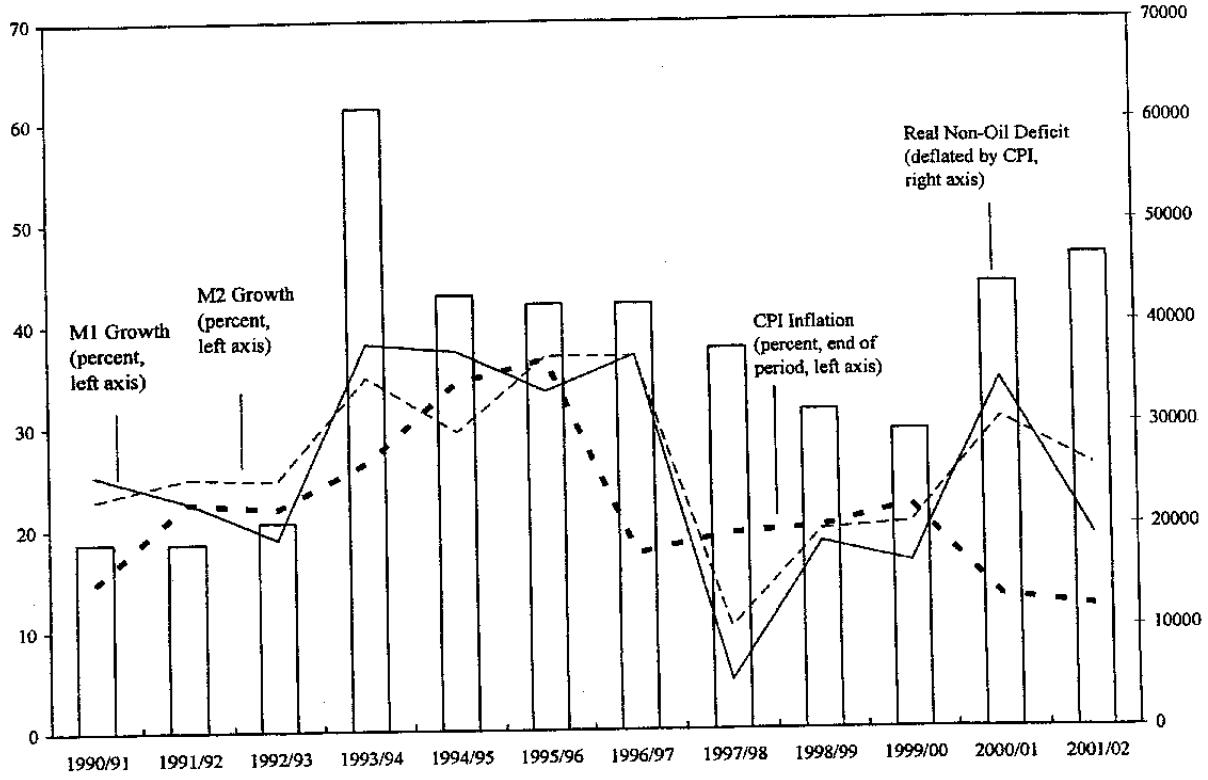
51. Inflation in the Islamic Republic of Iran has historically been moderately high, and the main source of inflation in the long run has been the financing of large government deficits by monetary expansion.[21] Year-on-year CPI inflation was in the double digits throughout the 1990s, registering an average of 25 percent from 1990/91–1999/2000. However, despite sustained high growth of money supply, the period from 2000/01–2001/02 witnessed a significant decline in inflation, to an average of about 12 percent (Figure IV-1).

52. The marked disinflationary trend has prompted some Iranian policymakers to ponder whether there has been a structural break in inflation dynamics, and whether low inflation can be sustained despite high growth in the monetary aggregates, for instance by restricting the producer price inflation of the goods and services provided by public sector enterprises. An understanding of the nature of the decline in inflation is crucial to guide monetary policymaking, especially given the increased importance of the latter under the unified exchange rate system. The purpose of this study is to examine money demand and inflation

[20] Prepared by Oya Celasun and Mangal Goswami (all MED).

[21] Liu and Adedeji (2000) present an econometric analysis of money demand and inflation for the period from 1989/90–1998/99, and conclude that inflation was mainly a monetary phenomenon.

Figure IV-1. Islamic Republic of Iran: Real Non-oil Fiscal Deficit, Monetary Developments and Inflation, 1990/91–2001/02



Sources: Iranian authorities; and IMF Staff estimates.

dynamics in Iran based on a quarterly data set for 1990/91–2001/02, and to test the hypothesis of whether the recent disinflationary process has been associated with a structural break in the estimated relationships.

53. The study estimates a long-run money market equilibrium condition and analyzes the impact of disequilibria in the money market on changes in the inflation of consumer prices that are not controlled by the public sector. A long-run money market equilibrium condition is identified in the form of a cointegrating vector among real M1 balances, output, CPI inflation, and the rate of depreciation of the Iranian rial in the parallel foreign exchange market. The short-run behavior of the change in the inflation of the non-administered component of CPI is modeled conditional on the disequilibria in the money market and the other variables that potentially impact inflation. The stability of the estimated inflation equation is analyzed in view of the decline of inflation despite the sustained increase in the money stock during the period from 2000/01–2001/02. The results of statistical tests do not point to a structural shift in the equation that governs inflation dynamics.

B. Theoretical Framework and Cointegration Analysis

54. The supply of money is assumed to be exogenous. The demand for real monetary balances, *m1p*, is assumed to depend on real GDP (as a proxy for real expenditure), *y*, and a vector comprised of measures of the opportunity cost of holding money.[22] For the case of narrow money, two such proxies are the rate of inflation, *dcpi*, and the rate of depreciation of the rial against the U.S. dollar in the parallel market, *dpar*.[23] [24] The money market equilibrium can be stated as:

$$m1p = f(y, dcpi, dpar). \tag{1}$$

The disequilibrium in the money market in period *t* is:

$$ECMM_t = m1p_t - f(y_t, dcpi_t, dpar_t). \tag{2}$$

---

[22] All the variables are in logarithms.

[23] The levels of nominal interest rates are not used as they are administered and fairly constant over much of the sample period.

[24] The parallel market for foreign exchange is an amalgam of several closely linked and integrated markets, and throughout the sample period, the only foreign exchange market where Iranian agents could obtain foreign currency for most capital account activities, including the purchase of foreign currency as a financial instrument that provides some hedge against domestic inflation.

55. The long-run relationship between *m1p, y, dcpi* and *dpar* from 1990:Q3–2001:Q4 is estimated in the form of a cointegrating vector (Appendix A), as unit-root tests indicate that all the variables in the relationship are integrated of order one. (The results of the unit-root tests are summarized in Appendix B). The Johansen (1988) trace statistic is used to determine the number of cointegrating vectors among the variables. The trace statistic indicates that there is at most one cointegrating vector (at 1 percent confidence). The estimated long-run money demand equation takes the form:

$$m1p = 0.78 + 0.57\, y - 0.60\, dcpi - 1.36 dpar\,. \qquad (3)$$

56. A coefficient smaller than unity on output in the long-run money market equilibrium relationship indicates a declining rate of velocity in the long run, which is consistent with the Iranian experience from 1990–2001.[25] The demand for real money is estimated to be very sensitive to the rate of exchange rate depreciation and the rate of inflation. The model predicts that the reversal of the trend of depreciation at the parallel market from the third quarter of 1999 onwards has boosted real M1 demand, indicating that the growth in real M1 from 1999:Q3–2000:Q4 has in fact been exceeded by an increase in the demand for real M1 balances (Figure IV-2).

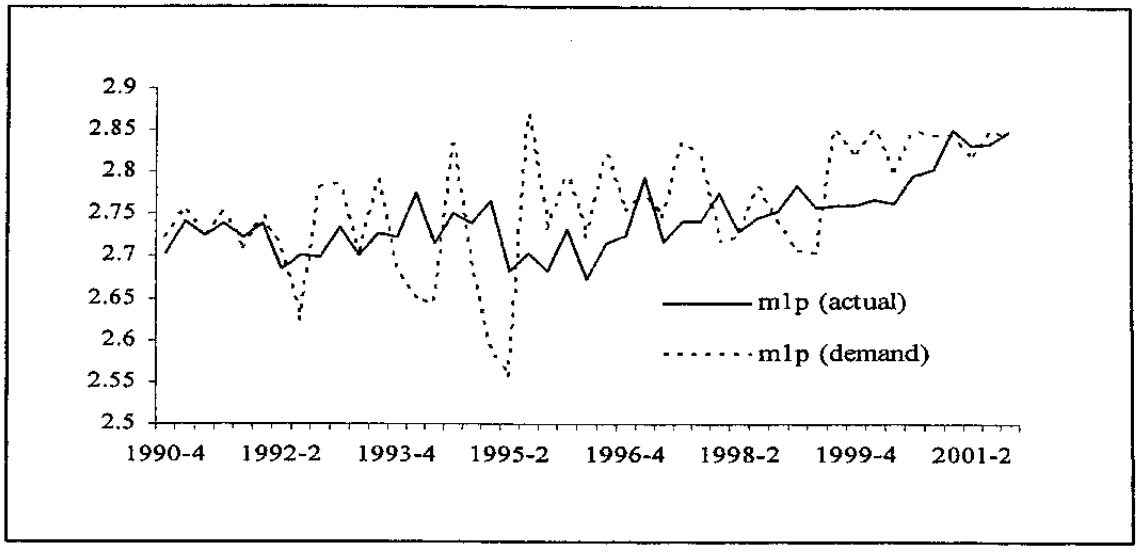
57. Tests of weak stationarity indicate that *y, m1p*, and *dpar* are weakly exogenous to this co-integrating relationship, implying that the inflation rate, *dcpi*, is the variable in the system which adjusts to the disequilibrium in the money market.[26] [27] This is supported also by graphical evidence. Figure IV-3 shows the close relationship between the disequilibria in the money market (as captured by the residuals of the money demand equation, ECMM) and the changes in the CPI inflation rate. The changes in the inflation rate impacts the equilibrium in the money market through two channels. First, an increase in the price level decreases the real value of a given level of the outstanding money stock, reducing the excess of supply over demand for nominal monetary balances. Second, and working in the opposite direction, a higher inflation rate, implying a higher opportunity cost of holding domestic currency against goods, reduces the demand for real money, widening the gap between a given level of money

[25] Liu and Adedeji (2000) report an estimated output elasticity of real M2 of 0.63 for a sample from 1989/90–1998/99 and Pesaran (2000) reports an elasticity of 0.53 for 1979/80-1995/96, both of which are reasonably close to our estimate of 0.57.

[26] The concept of weak exogeneity is described in Johansen (1992).

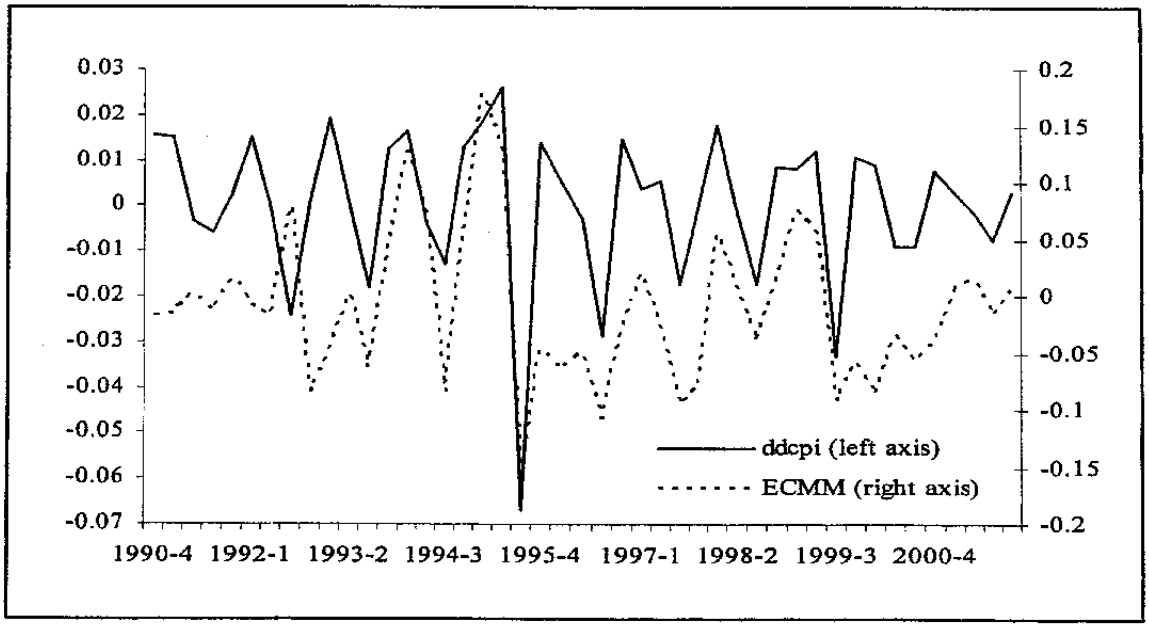
[27] The cointegration test was also carried out for real M2 balances, real output, inflation rate and the parallel market depreciation rate, and the Johansen trace statistic indicated the statistical significance of a single cointegrating vector. However, all variables except the level of real M2 balances were found to be weakly exogenous to the cointegration relationship. Given that inflation was found not to adjust in response to disequilibria in broad money, the level of real M1 balances was used as the relevant measure of money supply.

IV-2. Islamic Republic of Iran: Real M1 Demand and Actual Real M1, 1990:Q1–2001Q4



Sources: Iranian authorities; and IMF Staff estimates.

Figure IV-3. Islamic Republic of Iran: Excess Money Supply and the Change in CPI Inflation, 1990:Q4–2001:Q4



Source: IMF Staff estimates.

supply and demand. It can be shown, however, that given the estimated parameters of the money demand function, the net effect of inflation is always to reduce the excess real supply of money, as long as inflation remains above zero.[28]

58. Given that inflation is the only variable in the money market relationship which is not weakly exogenous to the cointegrating vector, its dynamics can be consistently analyzed by estimating a single error-correction equation. An important consideration in the analysis of Iranian CPI inflation dynamics is that the prices of a number of subsidized goods are administered by the government, and the level of price adjustments are guided mainly by political considerations. Since it is the non-administered component of CPI that adjusts to market forces including disequilibria in the money market, the dependent variable in the equation is taken to be the change in the non-administered component of CPI, while the change in the inflation of the component of CPI which is administered by the government is included as an exogenous variable.[29] [30] An error-correction equation for the first difference of non-administered CPI inflation ($ddcpni_t$) which includes as explanatory variables the current values and the four lags of the first difference of real money demand, output, the parallel market depreciation rate, the administered CPI inflation rate, the four lags of the non-administered CPI inflation rate, as well as the first lag of the error correction term, *ECMM*, is estimated by ordinary least squares. By removing the statistically insignificant variables from this general equation, the following specific inflation equation is obtained for the period 1990:Q4–2001:Q4:[31]

$$ddcpin_t = \underset{(0.001^{**})}{0.005} - \underset{(0.11^{**})}{0.51}\, ddcpin_{t-1} - \underset{(0.08^{**})}{0.28}\, ddcpin_{t-2} + \underset{(0.02^{**})}{0.07}\, dy_{t-1} + \underset{(0.02^{**})}{0.06}\, dy_{t-2} + \underset{(0.02^{*})}{0.03}\, dy_{t-3} + \underset{(0.04^{**})}{0.22}\, ddpar + \underset{(0.06^{**})}{0.15}\, dm1p_{t-2} + \underset{(0.03^{**})}{0.13}\, ECMM_{t-1} - \underset{(0.01^{**})}{0.02}\, Q3.$$

The coefficients in the equation have the expected sign and are highly significant.[32] The change in the administered component of CPI inflation is omitted from the equation as it does

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[28] The condition for a given level of inflation to reduce real money supply more than it reduces real money demand is $-0.4dcpi_{t+1}<0.6dcpi_t$, which is always satisfied for nonnegative rates of inflation.

[29] The non-administered component of CPI excludes the prices of bread, sugar, vegetable oil, medicines, water, fuel, electricity, inter-urban bus transport and inter-city air transport, which comprise about 5 percent of the consumer price index basket.

[30] Taking the change in overall CPI as the dependent variable does not change any of the subsequent results, including those relating to the stability of the model.

[31] The exclusion restrictions were tested at each stage of the model reduction and only statistically insignificant restrictions were accepted.

[32] Standard errors are in parentheses. Asterisks * and ** denote statistical significance of the coefficients at the 1 and 5 percent levels respectively.

not impact non-administered inflation significantly, most likely because expenditures on subsidized goods and services constitute only a minor share of consumer and firm budgets given their very low prices, and therefore changes in these administered prices do not have significant cost-push effects. The first two lags of the change in inflation enter with large negative coefficients, reflecting the tendency for mean reversion in the change of inflation, which is a stationary variable. The seasonal dummy variable for summer months is significantly negative, indicating that inflation declines during the summer, most likely due to the increased supply of agricultural food products. The three lags of output growth enter the inflation equation with positive coefficients, suggesting that increased real income and aggregate demand have inflationary consequences in the short run. Lagged excess monetary balances, twice lagged real money and the contemporaneous rate of parallel market exchange rate depreciation have a positive impact on inflation.[33] The fitted and actual values of the rate of change of inflation are graphed in Figure IV-4.

59. The model appears to fit the data quite well, and the model residuals for the period 2000-01 do not appear to be excessive. To statistically test the stability of the equation over time, a number of recursive tests were carried out. First, the coefficients of the equation were estimated for the sample ranges from 1990:Q4–1995:Q4 to 1990:Q1–2001:Q1. The estimated coefficients for these samples are plotted against the sample end-point in Figure IV-5. Most of the coefficients and their standard error bands flatten out as the sample is extended, despite a slight instability in some parameters after 2000:Q1, suggesting no statistically significant change in parameters. One step residuals, where the residual in period *t* is obtained by estimating the model over the sample up to period *t* are plotted in Figure IV-6. There are no residuals outside the two standard error bands, implying no outliers, which supports the hypothesis of the constancy of the coefficients. However, the residuals in 2000–01 seem to be somewhat larger than the residuals in the previous periods.

60. Further, three types of Chow-forecast tests were carried out for the subsample 1995:Q4 to 2001:Q4. Intuitively, these procedures test model stability by comparing the within and post sample residual variances. The first test, the 1-Step Chow test compares the one-step ahead forecast error variance for all sample points after the given initialization period with the error variance within the sample. The Break-point Chow test and the Forecast Chow tests compare the out-of-sample forecast error variance for varying forecast horizons with the within sample error variance. The 1-Step Chow statistic test is plotted in the first panel of Figure IV-7. The Break-point and the Forecast Chow tests for regressions with the forecast horizon decreasing from 1995:Q1–2001:1 to 1995Q:1 and increasing from 1995:Q1 to 1995:Q1–2001:Q1 are

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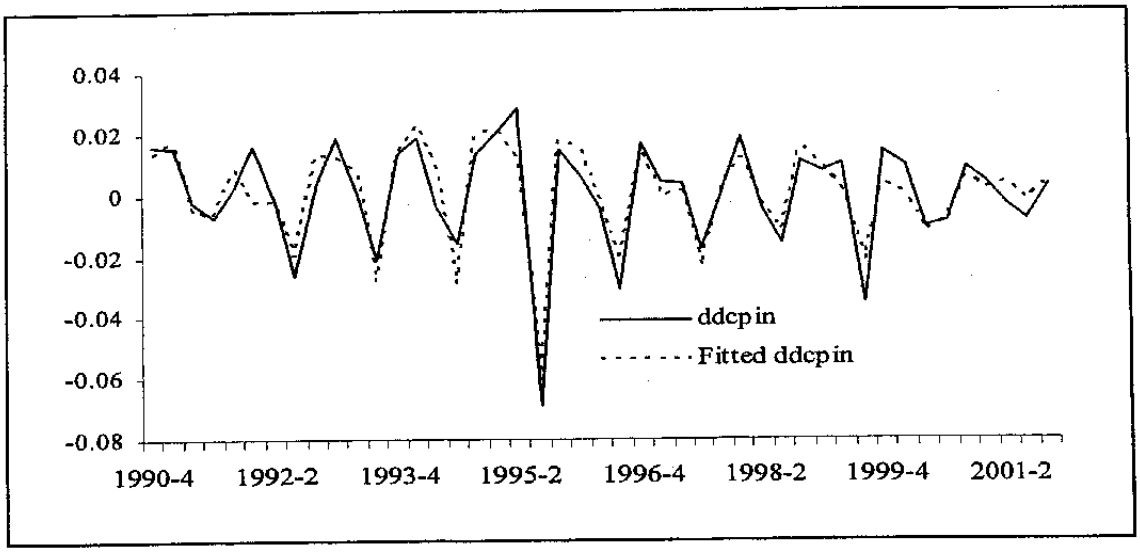
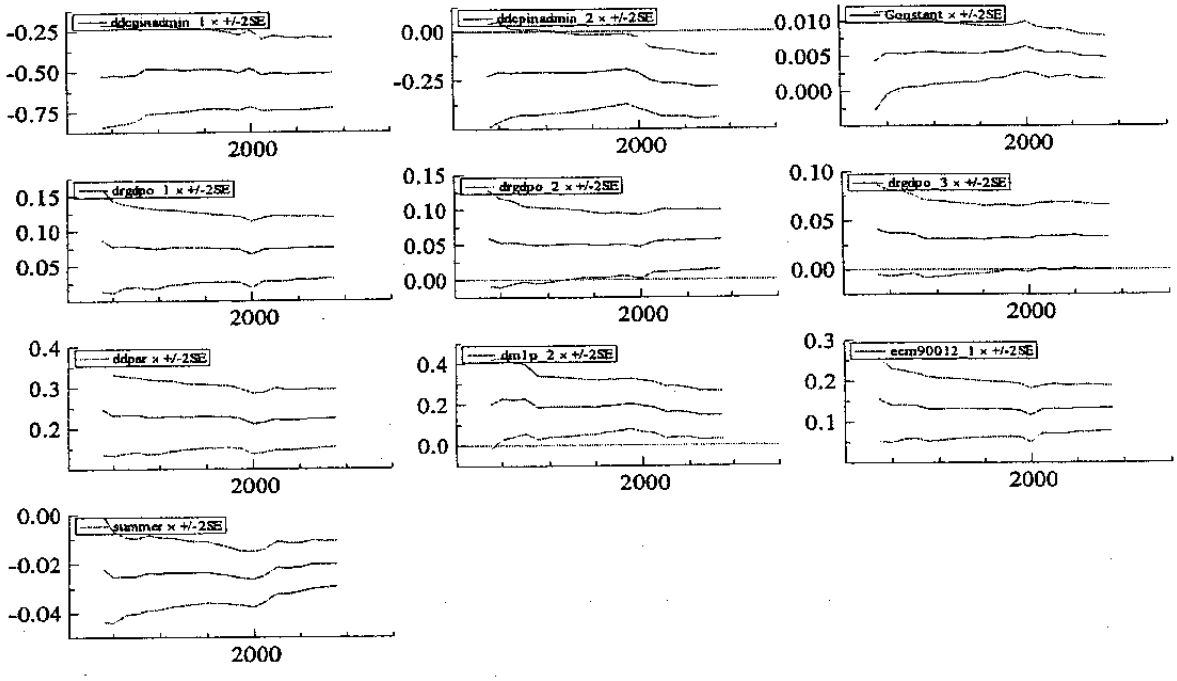
[33] The direct impact of the parallel market exchange rate depreciation on inflation is likely to be associated with two different channels. The first stems from the importance of the market determined exchange rate in the formation of inflationary expectations, as has been the case in many high inflation economies. Second, from early-2000 onwards, the parallel market exchange rate has tracked closely the Tehran Stock Exchange (TSE) rate, which has been the main determinant of imported goods prices—and therefore tradable prices—in the CPI.

Figure IV- 4. Islamic Republic of Iran: Actual and Fitted Changes in Non-administered CPI Inflation, 1990:Q4–2001:Q4



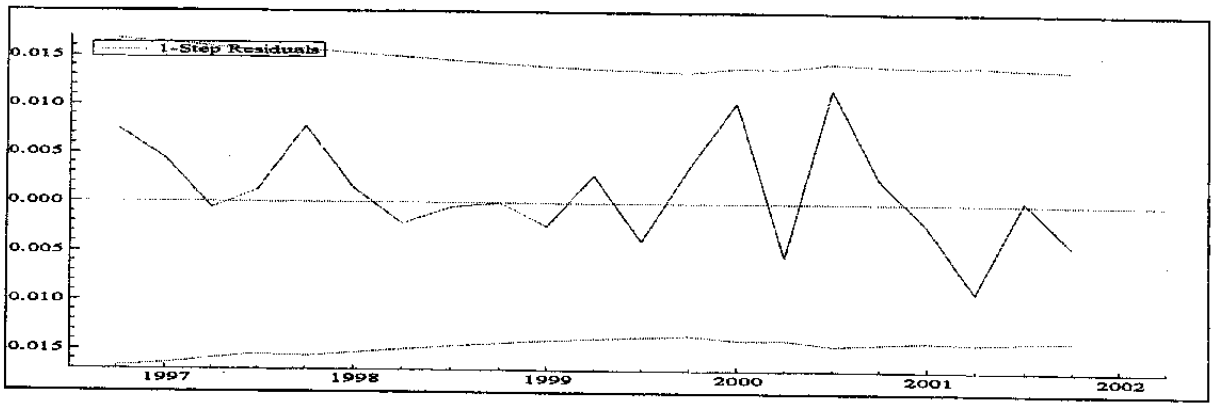
Source: IMF Staff estimates.

Figure IV-5. Islamic Republic of Iran: Recursive Estimates of the Estimated Coefficients, 1996:Q2–2001:Q4



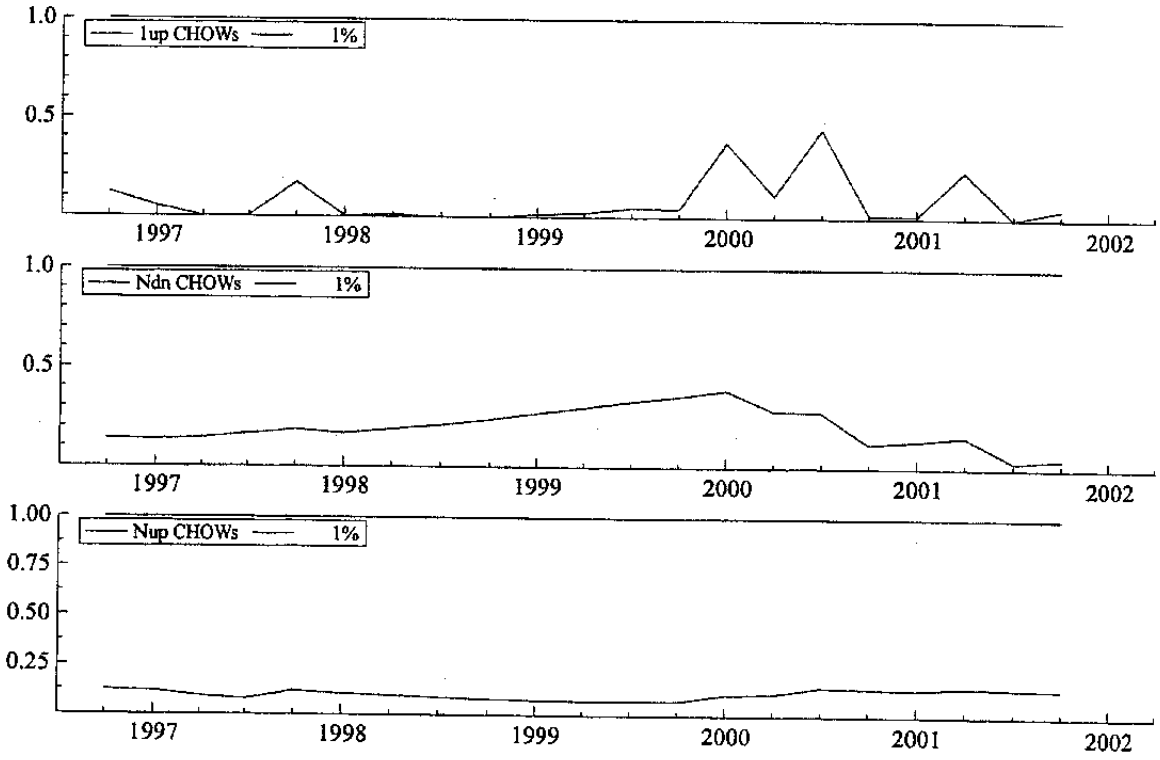
Source: IMF Staff estimates.

Figure IV-6. Islamic Republic of Iran: One Step Residuals, 1996:Q2–2001:Q4



Source: IMF Staff estimates.

Figure IV-7. Islamic Republic of Iran: Chow Test Statistics, 1996:Q2–2001:Q4



Source: IMF Staff estimates.

presented in the second and third panels of Figure IV-7, respectively. The 1 percent significant values of the test are normalized to one (as an adjustment to the varying degrees of freedom). The test statistics never exceed one, implying no rejection of the hypothesis of model constancy over the sample period.

C. Conclusion

61. This study presents a simple quarterly econometric model of long-run money demand and short-term inflation dynamics in Iran from 1990–2001, and analyzes whether the decline in inflation since early-2000 against a background of strong monetary growth represents a structural break in the modeled relationships. It is first established that real M1 balances have a long-run relationship with real output and a vector of opportunity cost variables proxied by the inflation rate and the rate of depreciation of the rial against the dollar in the parallel market. The estimated money demand equation indicates that the reversal of the trend of depreciation at the parallel market and high output growth have boosted the demand for real M1 after mid-1999, implying that the strong growth of the M1 stock from 2000–01 has not resulted in large excess liquidity supply and inflationary pressures. It is estimated that the inflation rate adjusts to money market disequilibrium in the short-run, and the estimated error-correction model for the inflation rate shows that lags of the first differences in inflation, output, depreciation of the parallel market rate and the money market disequilibrium term are all statistically significant determinants of the CPI inflation rate.

62. A battery of stability tests and break-point tests are carried out to gauge whether there was any structural change in inflation dynamics during the latter part of the sample. All tests point to the relative stability of the coefficients and stable forecast error variances, indicating a lack of statistical evidence towards a structural break in inflation dynamics. This implies that the behavior of inflation in 2000-01 has been consistent with the relationship of inflation with its determinants over the past decade.

63. The estimated model suggests that the disinflationary process from 2000-01 was mainly effected by the stable and slight appreciation trend of the parallel market exchange rate, which appears to have a strong influence on inflationary expectations. In addition to its role in curbing inflationary expectations in the short term, the appreciation trend of the parallel exchange rate has led to an increase in the relative real rates of return on domestic currency denominated assets, which, combined with strong output growth, is estimated to have buoyed the demand for domestic currency to the extent that the growth of money supply did not result in a significant money market disequilibrium, in effect reducing the inflationary impact of the growth in money supply.[34]

[34] In the period ahead, the empirical relevance of the parallel market exchange rate for inflation is likely to decrease and to be replaced by that of the official rate. The ongoing process of opening to international trade is likely to increase the direct effect of the official exchange rate on CPI inflation. Also, as foreign currency

(continued...)

64. A number of other factors that have not been captured in our model due to the lack of adequate data are also likely to have exerted downward pressures on CPI inflation. First, favorable weather conditions in 2000 and 2001 have led to strong agricultural output and reduced the inflation of agricultural food prices, which amounted to a total weight of 31 percent in the CPI. Second, the gradual easing of trade barriers and increased import penetration have relaxed supply constraints in the tradables sector, and the stability of the Iranian rial against the U.S. dollar in the official foreign exchange market and the strength of the U.S. dollar against other currencies have curbed the relative price of imports.[35] With increased competition from imports despite the remaining tariff protection, domestic producers of tradables appear to have had little scope to raise prices, bringing the inflation of tradable consumer goods to single digit levels in the fiscal year 2001/02.[36] Finally, the annual price increase limit applied to goods and services provided by public sector enterprises was reduced from 25 to 10 percent from March 2000 onwards. As supported by the lack of any statistically significant structural change in inflation dynamics during 2000, these price controls alone are unlikely to have been binding in significantly altering the inflation rate, but they might have had some restraining impact.

65. The results of the analysis indicate that a strong increase in the demand for real monetary balances on account of a marked increase in the relative rate of return on domestic currency assets appears to have alleviated the inflationary impact of the nominal money supply growth from 2000/01-2001/02. However, there seems to be little scope for much further growth in real money demand in the future, as it is unlikely that the relative rates of return on Iranian rial assets can increase any further. Given that the stock of real M1 appears to be close to the equilibrium rate at the end of our sample period, this implies that continued strong money supply growth can rapidly lead to disequilibrium in the money market and put upward pressure on inflation.

66. The estimated model indicates that the exchange rate is a significant determinant of inflation. In the period ahead, any portfolio reallocation away from domestic currency holdings prompted by a perceived unsustainability of the policy stance could increase the parallel market premium given the relatively closed capital account, and translate into higher

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transactions for capital account purposes are gradually liberalized and shifted to the official market, the relevance of the parallel market for asset substitution purposes might diminish.

[35] From mid-1999 until the March 2002 exchange rate unification, all imported goods excluding imports of subsidized goods were imported at the TSE exchange rate. Following March 2002, most imports were applied the official exchange rate prevailing at the interbank market for foreign exchange, but essential imports were subsidized. Both the TSE exchange rate during 2000–02 and the interbank rate after March 2002 were very stable.

[36] This effect is likely to have been partially captured by our model, as the stability of the TSE and interbank exchange rates during the period from 2000–02 was matched by the stability of the parallel rate, which is included as an explanatory variable in the model.

inflation. In this context, the building-up of disequilibria and misalignments relating to relative prices and the real exchange rate during periods of booming domestic demand would necessitate sharper exchange rate and inflation adjustments when external and domestic conditions become less favorable, underscoring the need to avoid imprudent fiscal and monetary policies even if their adverse effects are not immediately felt in the form of higher inflation.

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APPENDIX A

Islamic Republic of Iran: Data Description and Sources

Variable	Description	Source
M1	Narrow money	International Financial Statistics
CPI	Consumer Price Index	National Authorities
m1	Logarithm of M1	
Cpi	Logarithm of CPI	
m1p	Real M1demand, m1 – cpi	
dcpi	Inflation, first difference of cpi	
ddcpi	First difference of dcpi	
*dcpin**	Logarithm of the non-administered subcomponent of CPI	
ddcpin	First difference of dcpin	
dpar	First difference of the logarithm of the parallel market exchange rate	National authorities
ddpar	First difference of dpar	
y	Logarithm of real GDP	National authorities
dy	GDP growth rate, first difference of y	

* The non-administered subcomponent of CPI is obtained by subtracting the administered component from overall CPI. The administered component was made up of the following items and weights from 1997/98-2001/02: bread, 1.03 percent; sugar, 0.55 percent; vegetable oil, 0.9 percent; medicines, 1.1 percent; water, 0.35 percent; fuel, 0.81 percent; electricity, 0.47 percent; inter-urban bus transport, 0.27 percent; and inter-city air transport 0.13 percent. Slightly different weights were applied for the period from 1990/91-1996/97.

Appendix B. Time Series Properties: Tests of Stationarity

67. This study uses a cointegration approach to identify a long-run equilibrium relationship in the money market in Iran. A set of variables which are integrated of order one (I(1)) are said to be cointegrated with each other if there is at least one linear combination of these variables which is stationary (I(0)). The order of integration of the variables which enter the money market equilibrium relationship given in equation (3) (m1p, y, dcpi, dpar) was investigated using the Augmented Dickey-Fuller (1979) and Phillips-Perron (1988) tests.[37] For all the variables except y, the hypothesis of nonstationarity cannot be rejected at 5 percent confidence by at least one of the tests. The stationarity of y is rejected only at 10 percent confidence, but for samples ending before 2001:Q4, at higher levels of confidence. For the first differences of the same variables, the hypothesis of nonstationarity is rejected at least 10 percent confidence, suggesting that the variables are I(1). Table 1 presents a summary of the unit-root test results based on the Augmented Dickey-Fuller (1981) procedure.

Table 1. Unit Root Augmented Dickey-Fuller Test Statistics: 1990:Q3–2001:Q4

	Level		First Difference	
	Lag	Test statistic	Lag	Test statistic
m1p	6	-0.46	6	-4.48**
Y	5	-3.42*	5	-4.16**
Dcpi	6	-2.35	4	-3.65**
Dpar	5	-2.35	5	-3.26*
dcpin	6	-2.46	6	-3.66**

Notes: Variables are as defined in the text. The test statistic is the coefficient of the first lag of the variable in a regression of first difference of the variable on its lags and a constant term, divided by its standard error. The criteria for lag selection is a modified version of the Akaike information criterion, as described by Pantula et. al. (1994). The critical values of the tests are taken from MacKinnon (1994). The asterisks * and ** indicate that the test statistic is significant at the 5 percent and 10 percent levels respectively.

[37] Two versions of the tests were carried out, by allowing a constant, and a constant and a trend to enter the equations. The test results were not significantly different for the two versions, and only the tests including a constant term are reported in the paper.

V. Preserving Oil Wealth for Future Generations [38] [39]

This chapter discusses long-term fiscal issues related to the allocation of oil wealth. The fiscal outlook under current policies appears broadly in line with keeping oil wealth constant in real terms, while a significant fiscal adjustment would be required to maintain oil wealth in per capita terms as suggested by the permanent income theory. The chapter concludes with a discussion of various investment strategies which could be considered to preserve oil wealth in the long run, including the merits of building assets abroad.

68. The management of Iran's non-renewable natural resources wealth is of critical importance for the long-run sustainability of its fiscal policy and equitable intergenerational sharing of oil wealth. Iran has the third largest oil reserves in the world, ranking behind Saudi Arabia and Iraq, as well as the second largest endowment in natural gas, after Russia.

69. Despite a relatively diversified economy, the government relies on oil exports for more than half of its revenue. Based on proven reserves, the country's oil and gas resources are estimated to last for about 75 years, assuming that extraction of oil continues at the current pace and extraction of gas accelerates in the next decade. In this context, long-run sustainability and intergenerational equity considerations require that a portion of today's oil and gas revenue is saved.

70. This chapter determines the optimal amount of government savings out of oil revenues, drawing on the theory of permanent income. In the context of this theory, intergenerational equity considerations are given prominence, while fiscal sustainability issues are not explicitly examined, assuming that the government inter-temporal budget constraint is always met. The optimal saving rule determined by the permanent income theory requires that the government devotes to public consumption only the return on oil wealth adjusted for population growth.

71. In addition, another saving rule is widely used in studies on fiscal policy in oil producing countries. It recommends that the government save such a portion of oil revenues so as to maintain oil wealth constant in real terms. Although this rule is not based on any theoretical background, it is very intuitive and appealing from the political economy point of view, as it puts forward a concept of oil wealth preservation which for many countries is less constraining than the rule suggested by the permanent income theory.

72. Section A estimates the required savings out of oil revenue, permanent income, and the level of government's consumption consistent with the two above-mentioned rules. It also compares the obtained results with the current fiscal policy stance. Section B reviews

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[38] Prepared by Vincent Moissinac and Vitali Kramarenko.

[39] In this chapter, oil wealth is defined to include oil and gas resources.

economic considerations that could guide the allocation of the government's savings between different asset categories.

A. Permanent Income Theory and Current Policies

Analytical framework

73. One method to assess the sustainability of consumption out of oil wealth can be derived from the permanent income theory of consumption.[40] In theory, it is optimal for governments that care equally about current and future generations to restrain public consumption to a level that maintains their total per capita wealth[41] constant over time (Box V-1). This implies that in each period governments should consume at most the real return they receive on their total wealth, or the so-called permanent income, assuming no population growth. The permanent income rule ensures economic equity across generations because it enables governments to deliver to future generations the same level of per capita public services available to the current generation.

74. Iran's rapid population growth calls for consuming less than the real return on oil wealth. Iran's population is currently growing at about 1.6 percent per year and the rate is expected to decline gradually to about 1 percent of GDP by the end of this century. To keep per capita government expenditure constant over time, the government needs to further restrain public consumption in order to preserve wealth on a per capita basis and secure a constant income stream per capita (Box V-1). Assuming an initial population growth rate of 1.6 percent and a real rate of return of 3.5 percent over the long-term, government consumption out of oil wealth would need to be limited to 1.9 percent and the remaining 1.6 percentage points of permanent income should be saved (according to equation (5) in Box V-1). However, if the objective is to maintain a constant wealth in real terms, the government could consume the full permanent income equivalent to 3.5 percent of oil wealth.

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[40] Engel and Valdes (2000) provide an overview of the application of the permanent oil income model to the analysis of fiscal sustainability.

[41] From this perspective, the government's wealth comprises the oil wealth, i.e the present value of all future government oil revenues, and the initial net stock of the government's assets.

Box V-1. Permanent Oil Income Model

The purpose of this model is to determine an optimal rule on how to distribute oil wealth across generations. The optimal solution to the government's consumption level (1) which ensures intergenerational equity is defined as follows (Engel and Valdes, 2000):

$U = \sum \beta (1+n)^t C_{G,t}^{1-\rho}$

where:

U is utility function

β is a subjective discount factor

$C_{G,t}$ is government consumption at time t

$1/\rho$ denotes the elasticity of substitution of consumption at different moments in time

n is the population growth rate.

Equation (2) defines the net wealth $W_{G,0}$ as the starting net wealth $F_{G,0}$ and the present discounted value of future oil revenues:

$W_{G,0} = F_{G,0} + \sum R^{-s} Y_{G,s}$ (2)

where:

R is a real return expressed as 1 plus a real return as a fraction of 1

$Y_{G,s}$ is oil revenue in period s

Equations (3) and (4) define the optimal path of government current spending out of oil wealth:

$C_{G,0} = (1- \alpha) R W_{G,0}$ (3)

$C_{G,t+1} = [\beta R]^{1/\rho} C_{G,t}$ (4)

$\alpha = (1+n) [\beta R]^{1/\rho} / R$

where:

If $\beta R=1$, implying that the society is patient enough to have the subjective discount factor equal to the real rate of return, the right hand side of (3) is government's permanent income that is the highest per capita government consumption level that can be maintained indefinitely:

$C_{G,t} = (R-1-n) W_{G,0}$ (5)

75. The introduction of a distinction between investing in financial assets and undertaking capital expenditure does not affect the general conclusions of the permanent income theory under certain conditions. Sustained public investment in infrastructure and human capital financed by oil revenue can contribute to an increase in the long-run growth rate of the non-oil sector. Fiscal sustainability, however, requires public investment to be sufficiently productive to generate tax revenue higher than or equal to the prevailing return on financial assets of the equivalent amount.[42] Beside resource and financial wealth, government revenue generated by the non-oil economy can also contribute to maintaining a stable level of fiscal spending. To ensure intergenerational equity, additional non-oil revenue would have to result from economic growth (in excess of population growth) rather than from an increase in the tax burden. Assuming that this rule is observed, the following analysis does not make a distinction between investment in financial assets and physical assets.

76. As a share of oil revenue is saved and invested, the return on these investments becomes an important source of finance for the budget. Accordingly, the government's consumption out of oil wealth can be measured by the non-oil current deficit minus net interest and capital income.[43] From the perspective of maintaining stable oil wealth, this measure of the non-oil deficit should be less than or equal to the permanent income.

77. Estimates of the permanent income are subject to large uncertainties. They are highly sensitive to several factors, including long-run oil and gas prices, the volume of proven reserves, the extraction rate, future GDP growth rates, and the discount rate. Among the above assumptions, oil and gas prices are the most difficult to predict. In particular, some empirical research papers suggest that oil prices do not revert to a long-term average, while others find only a very slow reversion and high persistence of shocks.[44] Revisions to the oil revenue outlook may also stem from further discoveries of oil and gas reserves or the development of alternative energy sources. Thus, the issue of sustainability needs to be frequently revisited as new information may lead to large variations in permanent income estimates. Uncertainty also argues in favor of saving from oil revenue more than what the permanent income framework would advise, in order to smooth out consumption.

78. In the case of Iran, estimates of oil wealth and permanent income are also sensitive to assumptions on the valuation of domestic consumption of oil products and the pace of the phasing-out of implicit energy subsidies. The valuation of oil wealth using subsidized prices for domestic distribution is not strictly speaking consistent with the intergenerational equity because current generations would benefit from implicit subsidies that reduce the permanent

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[42] This principle is valid regardless of the presence of oil resources.

[43] In the rest of the chapter, the non-oil current deficit refers to this definition of the non-oil current balance including depreciation costs and excluding net interest income.

[44] Cashin, Liang, and McDermott (1999) and Engel and Valdes (2000).

income, while future generations would have to pay higher oil prices and benefit from a permanent income that is reduced by implicit subsidies. Based on this consideration, oil wealth is estimated, using international prices for domestic consumption, and implicit subsidies are recognized as current expenditure. [45]

Base-line scenario: Oil wealth valuation using projected international prices for domestic consumption

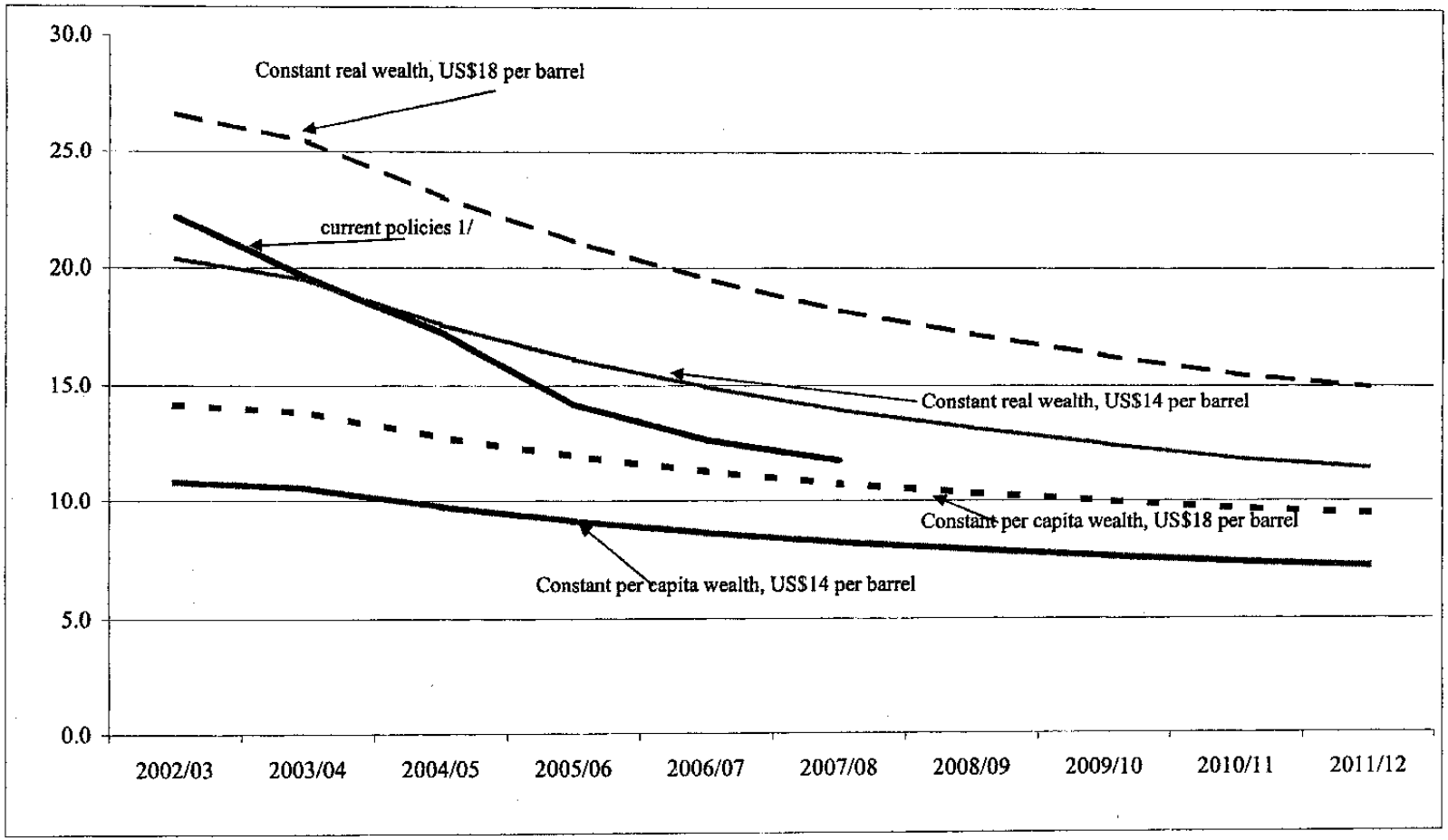
79. The present value of Iran's public wealth at the beginning of 2002/03 is estimated at about US$863 billion, equivalent to 787 percent of the projected 2002/03 GDP, taking into consideration oil and gas reserves, and reported government's net financial assets. This estimate hinges on several key assumptions (a) a real rate of return and a discount rate of 3.5 percent are assumed throughout the projection period; and (b) oil and gas extraction would proceed at a constant pace after a decade during which gas production expands more than twofold (a faster gas output growth would increase the present value of wealth allowing the government to sustain a higher level of consumption). On this basis, with proven oil-reserves of 97 billion barrels at the beginning of 2002/03, estimated to last about 75 years, and a long-run price of US$18 per barrel for both exports and domestic consumption, the present value of the oil wealth is estimated at 486 percent of 2002/03 GDP. Assuming gas-reserves of 20 trillion cubic meters, estimated to last for about 80 years, and a long-run price of US$65 per cubic meter[46], the present value of the gas wealth is estimated at 302 percent of 2002/03 GDP. Finally, the government's outstanding debt net of its deposits in the banking system, which amounted to US$5.9 billion in total, was subtracted from the oil an gas wealth to obtain an estimate of Iran's net public wealth.

80. Benchmark values of Iran's consumption out of oil wealth over the medium term are estimated using two criteria (Figure V-1): (a) maintaining per capita oil wealth constant in real terms and (b) maintaining constant oil wealth in real terms. The base-line scenario reveals a strong bias in favor of current generations under current policies. The non-oil current fiscal deficit for 2002/03 is about 8 percentage points of GDP above the benchmark prescribed by the permanent income theory. In contrast, the current policies are still

[45] The simple model used in this chapter accounts only for those subsidies that are driven by differences between domestic and export prices of crude oil and natural gas, which can be estimated at 7 percent of GDP in 2002/03. Under current policies, domestic prices of oil and gas would be increased every year by 10 percent in U.S. dollar terms. At this rate of increase, they will be in line with long-term export prices in 15 years.

[46] Current gas prices are currently well below that level. It is assumed that they will converge to that level in the next 15 years.

Figure V-1. Islamic Republic of Iran: Current Fiscal Deficit Excluding Net Interest Income, 2002/03–2011/12
(In percent of GDP)



Source: Fund staff estimates and projections.
1/ Consistent with the slow reform scenario of Appendix V, SM/02/279

consistent with the preservation of oil wealth in real terms (Figure V-1), [47] which, however, means that the government would not save enough resource revenue to maintain its ability to provide the same per capita levels of public services in the long-run—the main sustainability criterion. Nor do the current policies ensure that oil wealth remains constant in real terms in the face of possible future oil and gas price shocks commensurate with the relatively recent history.

Lower international prices scenario

81. The results of the base-line scenario are highly sensitive to the assumptions on oil and gas prices. Under lower long-run oil (US$14 per barrel) and gas (US$51 dollar per thousand of cubic meters) prices, the fiscal stance under current policies fails to meet either criterion on oil wealth preservation (Figure V-1); although the deviation of the current policies fiscal stance from the benchmark for maintaining oil wealth constant in real terms is not large. Moreover, the reliance on future gas revenue needs to be considered with caution because it has not generated substantial revenue flows to the budget so far and export prices observed in 2001/02 were below world prices.

B. Investing for Future Generations

82. While the previous section determined the amount of saving and consumption out of oil revenues, this section deals with possible investment strategies. Savings can be invested in foreign and domestic assets, with the latter in the form of physical capital (e.g. infrastructure) and financial assets. This allocation can be guided by simple principles of portfolio management, as well as by considerations of the potential impact of these investments on the economy. The experience of oil-producing countries with investment through oil funds offers a variety of strategies that are guided by country specific choices and practical considerations, including the absorptive capacity of the economy, the risk-adjusted return of foreign and domestic financial assets, the liquidity of financial assets to deal with short-term fluctuations in oil revenue, and the need to insulate the economy from oil price shocks.[48] While a number of countries have invested a sizable share of their oil surplus in foreign assets that provide a stream of income and offer a cushion against oil price fluctuations, others have also used oil revenue to help diversify the domestic economy thereby promoting employment and helping broaden the tax base.

83. The above short-term and long-term considerations are also relevant for Iran. From the short-term perspective, the volatility of international prices of oil and gas would argue in favor of an investment strategy relying mainly on foreign assets, a substantial portion of

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[47] In addition to consistency with various criteria for oil preservation, fiscal policy should also support short-run macroeconomic policies. The analysis of the latter is beyond the scope of this paper.

[48] See Davis, Ossowski, Daniel, and Barnett (2001).

which could be of short-term maturity. Concerns of this nature were reflected in the design of Iran's OSF (Box V-2),[49] which has been set as a revenue-contingent fund. Moreover, investing a large share of government savings from the oil wealth abroad would help isolate the domestic economy from oil price shocks by sterilizing a large portion of oil revenue and smoothing out government expenditure. Finally, from an asset management point of view, investing a substantial portion of the government's savings abroad could be essential to ensure an adequate diversification of risks.

84. From a longer-term perspective, the Iranian authorities could consider the merits of broadening the objectives of the OSF to include a build-up of long-term savings to ensure the preservation of oil wealth for future generations. Should the authorities decide to build up long-term savings, they will need to estimate the medium-term path of fiscal adjustment consistent with their long-term savings objectives in line with the illustrative scenarios presented above. A realistic approach for the next five years would be to adjust the non-oil current deficit to such an extent so as to decelerate the depletion of per capita oil wealth.

85. As mentioned above, oil wealth could be preserved through investment in financial assets and capital spending of the budget. The latter aspect is of particular relevance for Iran. The domestic economy is in need of substantial investments in physical and human infrastructure that cannot be provided by the private sector. Such investments would help promote private sector activity and reduce unemployment. As such, investing a significant portion of the oil savings in the domestic economy could be attractive, provided that the related investments generate high economic and social returns, that investment decisions are carried out in a transparent manner, and that a broad-based tax system is in place to ensure that the government captures back some of the returns on public investments. Finally, from a macroeconomic point of view, total public domestic investment should be kept within the absorptive capacity of the economy, and should not be procyclical. An overly rapid expansion in public investment could fuel inflation and aggravate the Dutch disease problems.

86. In the short run, however, conditions for expanding domestic public investment in Iran in a sustainable manner are not fully realized. Directed credits and budget on-lending are widely used; the tax system continues to suffer from numerous exemptions and is not expected to include a broad-based sales tax before 2004/05; the government's dominance in economic activity is significant; and pressure on the real exchange rate to appreciate is mainly emanating from government spending from increased oil revenue. These conditions would argue for using a large share of oil savings to build foreign rather than domestic assets.

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[49] Since this chapter is primarily focused on long-term sustainability issues, the analysis of the current set-up and stabilizing role of the OSF is not presented and should be the subject of future research.

Box V-2. The Oil Stabilization Fund

The Oil Stabilization Fund (OSF) was established in December 2000 with the objective of insulating the budget from fluctuations in oil prices. The OSF has been established as a foreign currency account at the BMJII and is managed by an Executive Committee comprised of the Minister of Finance, the head of the Management and Planning Organization, the Governor of the Central Bank, and two members selected by the President.

Transfer of crude oil export revenue. The 2002/03 budget established a ceiling on the oil export revenue that can be transferred to the budget, based on an oil price of US$17 per barrel. Additional transfers must be approved by the parliament and are typically included in a contingency budget. Oil revenues in excess of the budgeted amount are transferred to the OSF.

Drawing on resources from the OSF. If the realized crude oil export revenue is less than the budget figure by the end of the eleventh month of the fiscal year, the Central Bank draws from the OSF the amount required to compensate for the shortfall and transfers its equivalent in Iranian rials to the Treasury. The 2002/03 also envisaged a substantial one-time withdrawal from the OSF to compensate for the exchange rate unification cost.

Investment of OSF reserves. All OSF assets are held in a foreign deposit account at the Central Bank and at most 50 percent may be lent out domestically in foreign currency to the private sector. Based on Executive Committee's decisions, the Central Bank is responsible for announcing on a quarterly basis the amount available for loans and their terms.

Lending facility for the private sector. A firm may borrow from the OSF over a three-year period and is required to reimburse its loan from the fifth to the eight year of the project. Firms that are eligible for loans are those in the industrial, mining, agricultural, transportation, technical, and engineering services sectors. The loans are extended to investment projects based on feasibility studies demonstrating an expected rate of return at least equal to that charged on the loan. Although the currently announced lending rate is 7.5 percent, discounted rates are available for industry restructuring (less by 0.2 percentage points) and underdeveloped areas (less by 0.5 percentage points). The penalty for delayed repayment is 1 percent per annum. The required collateral for the loan may be land, machinery, equipment and corporate bonds.

OSF financial position. The total reserves of the OSF at the end of 2001/02 are estimated at US$7.4 billion.

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VI. Labor Market in Iran[50]

Like many other countries in the Middle East and North Africa (MENA) region, Iran is faced with high and rising unemployment stemming from a rapid population growth and slow employment creation. Providing increased job opportunities to a labor force that is growing by more than a half million persons per year has become the most acute single issue facing the Iranian authorities. This note reviews the main features of the labor market in Iran and discusses some policy options. The first section analyzes the dynamics at work in the labor market on both the supply and demand sides. The second section examines the current policy response and discusses alternative options to ease the pressing unemployment problem.

A. Key Features and Trends of the Labor Market in Iran

Labor force dynamics and unemployment

87. During the 1970s and 1980s, Iran recorded very high rates of population growth averaging 3–4 percent a year. This was attributable to high fertility rates (more than twice the world average), a drastic decline in infant mortality rates by a factor of 5 since 1970, and a rise in life expectancy by about 15 years since 1970 (Table VI-1). Although the population growth has decelerated to 1.6 percent a year on average since 1993, the population bulge created by the higher growth of the past decades has continued to put upward pressure on labor supply.

88. The participation rate of the working age population[51] in Iran has declined over the last decade, somewhat mitigating the effects of the high population increase on the growth of the labor force. Indeed, the increased female participation (from 11.5 percent in 1990 to 13.6 percent in 2000) has been more than offset by a sharp decline in the male participation (from 90.6 percent in 1990 to 81.4 percent in 2000).[52]

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[50] Prepared by Patrick Megarbane (MED).

[51] The participation rate of the working age population is defined as the ratio between total labor force and working age population.

[52] The decline in male participation reflects mostly the higher rates of secondary and tertiary school enrollment. However, the response of labor participation to the lack of job opportunities is another likely factor behind the drop in participation rates.

Table VI-1. Islamic Republic of Iran: Selected Social Indicators, 1970–99

	Iran			Middle East and North Africa 1/	Lower-middle-income 2/
	1970–75	1980–85	1993–99	Peer group 1993–99	
GNI per capita (US$)	...	3,520	1,810	2,060	1,200
Population					
Total population, mid-year (millions)	33.2	47.1	63.0	290.3	2,093.0
Growth rate (average annual percentage change)	3.1	3.7	1.6	2.0	1.1
Urban population (percent of population)	45.8	53.4	61.1	58.2	42.9
Total fertility rate (births per woman)	6.5	6.1	2.7	3.5	2.1
		(In percent of schooling age group)			
Net primary school enrollment rate					
Total	60	81	90	87	99
Male	..	88	91	90	100
Female	..	74	88	83	99
			(In years)		
Life expectancy at birth					
Total	57	63	71	68	69
Male	57	62	70	67	67
Female	58	65	72	69	72
Mortality					
Infant (per 1,000 live births)	109	63	26	44	32
Under 5 (per 1,000 live births)	208	126	33	56	40
Adult (15–59)					
Male (per 1,000 population)	204	221	156	183	191
Female (per 1,000 population)	219	190	139	151	133

Sources: 2001 World Development Indicators CD-ROM; and World Bank.

1/ Corresponds to the WEO country grouping.
2/ Includes countries in which 1999 GNI per capita was between US$755 and US$2,995.

89. Nevertheless, the labor force grew rapidly over the last decade, with a noticeable acceleration in the second half of the 1990s', reflecting to a large extent the arrival into the labor market of the baby-boom generation of the early 1980s (Table VI-2).[53]

Table VI-2. Islamic Republic of Iran: Selected Employment Indicators, 1990–2000

	1990–95	1995–2000
Working age population		
Total, period mid-year averages (in millions)	29.4	34.9
Female	14.5	17.5
Male	14.9	17.3
Growth rate, annual average (in percent)	2.9	4.2
Female	3.4	4.0
Male	2.5	4.4
Participation rate		
Total, period mid-year averages (in percent)	51.0	48.1
Female	11.7	12.5
Male	89.4	84.1
Labor force		
Total, period mid-year averages (in millions)	15.0	16.8
Female	1.7	2.2
Male	13.3	14.6
Growth rate, annual average (in percent)	1.9	3.5
Female	4.3	6.5
Male	1.6	3.0
Employed workforce		
Total, period mid-year averages (in millions)	13.4	14.7
Female	1.3	1.9
Male	12.1	12.8
Growth rate, annual average (in percent)	2.2	2.2
Female	6.6	6.3
Male	1.7	1.7

Sources: Bank Markazi Jomhouri Islami Iran; World Bank; and Fund staff estimates.

[53] The pace of population growth increased from 2.7 percent in 1976/77 to 3.9 percent in 1987/88 after adjusting for refugees inflows. This rise mainly results from changes in fertility and reflects to some extent the pro-natalist policies during the early years of the Islamic Revolution.

90. During the first half of the 1990s, the growth of employment slightly outpaced the growth of the labor force resulting in a decline in unemployment. However, this trend was reversed in the second half of the decade as growth of the labor force accelerated but job creation remained stable. As a result, after declining in the period 1990–95, unemployment has been increasing since the mid-1990s (Figures VI-1, VI-2, and VI-3). In fact, with the growth of employment broadly stable during the 1990s, the increase in unemployment in the second half of the decade can be entirely explained by the acceleration of the growth of the labor force (Table VI-3).

Table VI-3. Islamic Republic of Iran: Contribution to Unemployment, 1990–2000

(In percent)

	Total		Female		Male	
	1990–95	1995–2000	1990–95	1995–2000	1990–95	1995–2000
Changes in 000's, annual average						
Unemployment	3	255	-15	30	18	226
Employment	287	331	89	116	198	215
Labor force	290	586	74	145	216	441
Of which due to:						
Active working age population	391	743	57	85	334	658
Participation	-101	-157	17	60	-117	-217

Sources: Bank Markazi Jomhouri Islami Iran; World Bank; and Fund staff estimates.

The social categories of the unemployed

91. Labor surplus in the rural areas has contributed to urban unemployment. The demographic boom in the rural areas has led to a continuous rural emigration, which has fueled the growth of the labor force in the cities.[54] As a result unemployment rates in the rural areas have remained only slightly higher than in urban areas.[55]

[54] Rural-urban migration causes an additional 1–1½ percentage growth annually in the urban labor force.

[55] Unemployment rates in 1996-97 amounted to 8.9 percent in the urban areas and 9.4 percent in the rural areas.

Figure VI-1. Islamic Republic of Iran: Evolution of Unemployment Rates, 1990–2000
(In percent)

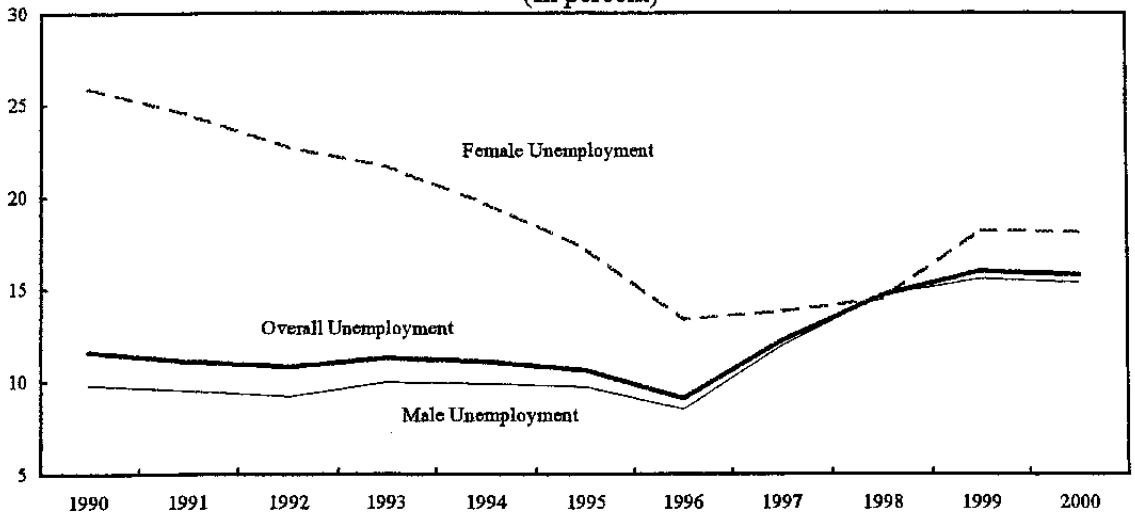


Figure VI-2. Islamic Republic of Iran: Unemployment Rate by Age Group, 1997
(In percent)

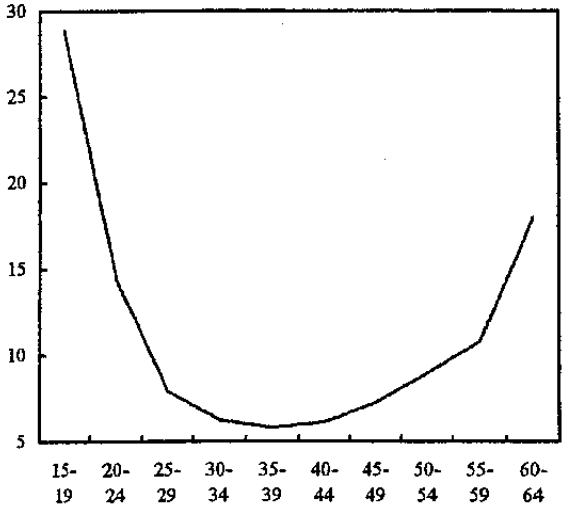
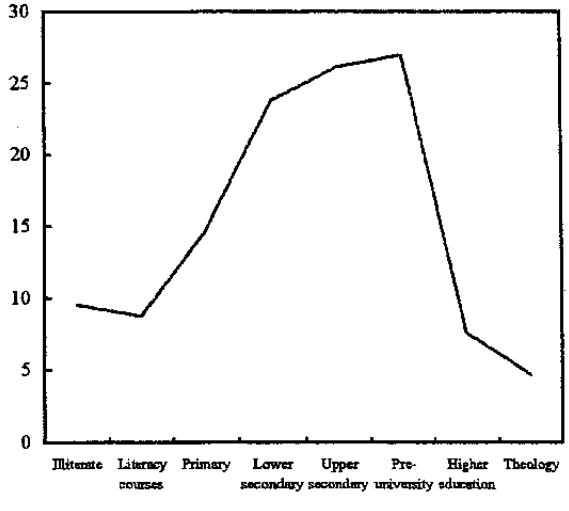


Figure VI-3. Islamic Republic of Iran: Unemployment Rate by Education Level, 1997
(In percent)



Source: Bank Markazi Jomhouri Islami Iran.

92. The youth are the most severely affected, with first-time job seekers experiencing long delays in finding stable employment. Unemployment for the 15–30 age group appears to be as high as 26–27 percent, with the peak unemployment rate for teenagers in the 15–19 group (Figure VI-2).

93. The employment dynamics have been more favorable to women, with female employment growing by 6–7 percent annually over the 1990s compared to 1½-2 percent for male employment. This has gradually brought the initially high unemployment rate of women in line with the overall trend (Figure VI-1).

94. Also, unemployment is higher among workers with secondary and pre-university education levels. Low-skilled labor, including the illiterate, as well as high-educated workers enjoy higher rates of employment.

Employment creation

95. During the decade of the 1990s, job creation in Iran was slower than in many countries in the region. While real GDP growth was comparable to the performance of peer countries, the change in employment in response to non-oil output growth—that is the employment elasticity to growth—was relatively low in Iran (averaging 0.5 during the 1990s as compared with regional averages of 0.8 for non-GCC[56] countries and 1.4 in the GCC countries). Also, in contrast to Iran, employment creation increased in most countries in the region in line with labor force growth mainly due to higher elasticity of employment to growth (Table VI-4).

96. Under-employment was partly responsible for the low employment content of growth, especially in agriculture and large manufacturing.

- Rural areas suffer from extensive under-employment.[57] In this context, output growth in agriculture occurred with almost no job creation and the share of agriculture in total employment declined, a pattern that is common to other countries with comparable income level and economic structure.

- Employment elasticity to growth in the manufacturing sector has been low compared to more competitive and opened economies (Tables VI-5 and VI-6). This may be explained by the fact that the manufacturing sector in Iran, which is dominated by state-owned enterprises, operates with excess capacity (estimated at about 40 percent

[56] Gulf Cooperation Council.

[57] A recent paper (Saltani, 1994) finds that, on average, 53 percent of agricultural labor is under-employed, with labor supply in excess of labor requirement throughout the year in 10 of the 14 regions studied.

on average in 1999/2000) and excess labor. Under these conditions, growth in the large manufacturing companies occurred with little employment creation.

Table VI-4. Islamic Republic of Iran: Employment Elasticity 1990–2000 1/
(Average annual percentage change; unless otherwise indicated)

	Employment growth	Labor force growth	Non-oil GDP growth	Employment elasticity to non-oil GDP	Employment elasticity to labor force
Algeria	2.8	3.9	1.7	1.7	0.7
Egypt	1.5	1.4	4.0	0.4	1.1
Iran	2.2	2.7	4.3	0.5	0.8
Jordan	4.2	3.9	4.8	0.9	1.1
Morocco	4.0	3.4	3.6	1.1	1.2
Pakistan	2.7	2.7	3.9	0.7	1.0
Tunisia	1.8	1.8	4.7	0.4	1.0
Turkey	0.6	0.5	3.6	0.2	1.2
GCC countries	...	...	...	1.4	...
MENA (excl. GCC)	...	...	...	0.8	...
Latin Central America	...	...	...	1.0	...
Sub-Saharan Africa	...	...	...	0.6	...

Sources: Bank Markazi Jomhouri Islami Iran; World Bank; WEO; and Fund staff estimates.

1/ Elasticity is defined as the change in employment with respect to the change in non-oil real GDP relative to the labor force.

Table VI-5. Islamic Republic of Iran: Employment Elasticity in Manufacturing, 1986–2000

	Elasticity	Period
Iran	0.0	1990–00
China	0.5	1987–96
India	0.4	1987-94
Indonesia	0.7	1988–96
Malaysia	0.9	1988–95
Philippines	0.0	1988–97
South Korea	0.2	1981–95
Thailand	0.8	1986–94

Source: International Labor Organization.

Table VI-6. Islamic Republic of Iran: Employment Creation by Sector, 1990–2000

	Share in total employment		Average growth in value-added	Average growth in employment	Elasticity 1/
	1990	2000	1990–2000	1990–2000	1990–2000
Total	100	100	4.3	2.2	0.5
Agriculture	26	22	3.8	0.4	0.1
Services	47	49	5.0	2.7	0.5
Industry					
Of which:	27	29	3.8	2.9	0.8
Manufactures	12	11	6.1	0.0	0.0
Construction	7	10	5.9	6.8	1.1
Other	9	8	1.6	4.0	1.1

Sources: Bank Markazi Jomhouri Islami Iran; and Fund staff estimates.

1/ Defined as the change in sector's employment with respect to the change in sector's value-added.

- In contrast, growth in the construction sector has been highly labor intensive. As a result, the share of the construction sector in total employment approached steadily that of the manufacturing sector. Also, reflecting the linkages with other sectors, about two-thirds of the employment creation in the industrial sector originated from the construction sector.[58]

- The employment content of growth in the service sector was on average low but increased over the decade.

97. During the 1970s and 1980s, a large share of employment took place in the public sector, resulting in many cases in overstaffing of government services and public enterprises.[59] While this policy might have helped contain unemployment in periods of

[58] The high employment content of the growth in the construction sector is highlighted in the recent Housing Sector Strategy paper of the World Bank. In particular, the analysis of input-output tables indicates that growth in the housing sector, in addition to being labor intensive, is likely to generate employment in other sectors because of extensive backward and forward linkages.

[59] Public sector employment increased from 19 percent of the employed population in 1976 to 31.4 percent in 1986.

adverse external conditions, over time, it exacerbated inefficiency and limited future employment growth. During the 1990s, however, most of the job creation took place in the private sector, which accounted for about 85 percent of net employment growth (Table VI-7). This pattern reflects a combination of factors. First, the principal source of demand for labor seems to have occurred primarily in the sectors of the economy in which the private sector plays a leading role, such as services (trade, retail, and transportation) and construction. Second, with the easing of foreign exchange constraints and the gradual phasing-out of trade and exchange restrictions in recent years, the private sector seems to have been able to generate growth and employment that are higher than those generated by the public sector, in which growth occurred mainly through higher capacity utilization.

98. Discounting for under-employment, it appears that the relatively low employment growth results primarily from insufficient output growth. However, the fact that the employment elasticities are well below regional averages across a wide range of sectors, including in activities with high private sector participation, also indicates that other factors, such as labor market rigidities and the business environment, might have adversely affected the labor intensity of growth. Low employment creation in Iran can therefore be traced to a dual problem of insufficient output growth and low labor intensity of growth.

Table VI-7. Islamic Republic of Iran: Employment Creation in the Public and Private Sectors, 1992–96

(In percent; unless otherwise indicated)

	Average share in total employment	Average annual growth in employment	Average annual job creation (in 000s)
	1992–96	1992–96	1992–96
Total	100	2.2	301
Private	66	2.8	257
Public	31	-0.4	-17
Cooperative sector	3	16.8	60

Sources: Bank Markazi Jomhouri Islami Iran; and Fund staff estimates.

Reasons behind the weak output growth

99. Delineating the reasons behind the weak growth performance in Iran is beyond the scope of this note. However, a number of factors are likely to have contributed to the insufficient output growth, including the public sector dominance of economic activities,

restrictive exchange rate and trade policies that were prevalent throughout the 1990s, and the lack of a competitive business environment. In particular, the various restrictions on market access and the pervasive rigidities entailed by the administrative allocation of resources and distorted price signals have restrained opportunities to expand the non-oil sector and increased the economy's dependence on capital intensive activities in oil and petrochemicals. While state enterprises have generally had little incentive to improve efficiency, the extensive system of subsidies and protection has raised entry barriers for private investors, deterred competition, and encouraged monopolistic practices. As a result, the economy grew below its potential and employment creation remained modest.

Factors affecting the labor intensity of growth

Wages

100. Wages have been more flexible in some sectors (such as the construction sector and, more generally, the informal economy) than in the large public enterprises. While wage moderation in some sectors (for instance, construction) has been conducive to employment creation, real wage increases in the public enterprises have usually been in line with the increase in output per worker and do not seem to be the primary cause for the low employment intensity of growth either. It can be argued, however, that, since the increase in output per worker is likely to reflect capacity utilization rather than sustainable gains in productivity, the increases in real wages in the manufacturing sector might have been higher than desirable, which might have negatively affected employment growth. Moreover, while wage increases varied widely across subsectors, the lack of downward flexibility in real wages, including in subsectors that faced a decline in output, indicates that wage flexibility may not have been sufficient in large manufacturing companies (Table VI-8).

Subsidies

101. The high amounts of subsidies provided to imported capital and energy may have promoted capital labor-substitution in some industries. The large implicit subsidies provided through the energy sector and the multiple exchange rate system—averaging about 15 percent of GDP per annum from 1995–2000—may have induced a bias in favor of capital and energy-intensive production processes.

Labor market rigidities

102. Restrictive labor market regulations, including rigidities in hiring and firing may have deterred firms to hire, given the difficulty to dismiss labor even in the private sector. In some instances, private firms have tried to circumvent the restrictions by using temporary contracts or operating in the informal economy. But anecdotal evidence suggests that labor regulations have been overly protective of incumbent employees and have penalized job creation.

VI-8. Islamic Republic of Iran: Growth in Employment and Real Wages, 1990–2000

(Average percentage change)

	Annual growth in output 1990-2000	Annual growth in employment 1990-2000	Annual growth in productivity 1990-2000	Average employment elasticity 1990-2000	Annual growth in real wages 1990-2000
Wood and wood products	-3.5	-3.4	-0.1	1.0	0.6
Textiles, clothing, and leather products	0.5	-1.2	1.8	-2.4	0.8
Paper and paper products	2.0	0.8	1.2	0.4	6.5
Nonmetallic mining products	6.3	2.0	4.2	0.3	6.6
Food, beverages, and tobacco	6.5	1.5	4.9	0.2	5.5
Chemical, basic materials, and products	9.0	3.5	5.3	0.4	6.6
Fabricated metal products, machinery	9.5	3.0	6.3	0.3	7.8
Basic metals	10.2	-0.2	10.4	0.0	5.1
Manufactures	7.4	1.5	5.9	0.2	5.6
Construction	6.6	7.3	-0.6	1.1	-2.9

Sources: Bank Markazi Jomhouri Islami Iran; and Fund staff estimates.

103. Other rigidities in the labor market are likely to have contributed to structural unemployment in Iran. The government's intervention in the functioning of the labor market seems to be excessive. Well-functioning labor markets require independent institutions representing the workers and the employers that play an important role in shaping labor regulations and wage settlements. In Iran, there are no independent labor organizations and no federation of employers. The absence of such institutions might have prevented the emergence of more balanced regulations and wage compensation.

104. Even though Iran has substantially improved its human capital over the past two decades, some mismatches in labor skills remain.[60] The educational system does not seem to have been responsive to the needs of the private sector, a factor that contributed to some shortages in technical and managerial skills remain.[61]

[60] The enrollment rate in primary and secondary schools is about 100 percent and 70 percent, respectively (compared with 87 percent and 42 percent in 1980). The adult literacy ratio increased from 50 percent in the mid-1980s to about 80 percent a decade later. The number of university graduates has more than doubled since the early 1990s.

[61] Statistics indicate that 38 percent of the graduates from Iranian universities completed studies related to Humanities or Islamic studies, 10 percent in medicine and health, but only 10 percent in business administration, commerce, and social sciences.

105. Insufficient labor mobility might have also added to the structural unemployment. Unemployment rates vary widely across regions, ranging between 6.4 percent in Yazd to 25 percent in Kermanshah. Notwithstanding rural emigration, labor mobility remains low, probably because familial and other community relations provide a safety net to the unemployed making mobility less attractive.

106. Finally, imperfect information prevents a rapid matching of labor supply and demand. The absence of up-to-date and complete information on job seekers and potential employers in the private sector leads private sector employers to rely mostly on informal information networks. As a result, searching and matching processes are inefficient.

B. Labor Market Policies

The unemployment challenge

107. Looking ahead, unemployment will continue to be an acute problem for Iran and a difficult challenge for policymakers for several reasons. The labor force will continue to increase for some time at a rapid pace. It is estimated that the growth of the labor force will average 3.3 percent per year in the period 2002–2007. Moreover, the important pool of under employed workers, especially in the rural areas, is likely to fuel the growth of labor supply and could maintain an imbalance between supply and demand for labor, regardless of the rate of employment creation. Finally, in the early phases of the transition to a more open and efficiently managed economy, some reforms needed to unlock the growth potential of the economy could result in some loss of employment in the short run, further complicating the employment situation.

108. In such a context, it will be very difficult to curb unemployment. In fact, on current trends, unemployment could reach 21 percent in 2007.[62] Moreover, an acceleration of growth would not likely suffice to reverse the rising unemployment trend. For instance, achieving an annual growth rate of 6 percent per year over the coming five years without improving the employment content of growth would still result in an increase of unemployment to about 17.2 percent by 2007. A decline in unemployment will therefore necessitate faster growth and a higher employment elasticity of growth.[63]

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[62] Assuming a growth rate of 3.3 percent for the labor force, 4.0 percent for real GDP and an employment elasticity of growth of 0.5.

[63] In comparison, the Third Five Year Development Plan (for the period 2000/01-2004/05) targeted real GDP growth averaging 6 percent and an implicit employment elasticity of 0.75 as a means for reducing unemployment to 11.5 percent by 2004/05 from 15 percent in 2000/01.

109. Addressing the unemployment problem, while avoiding significant social and macroeconomic instability, would therefore require a well-coordinated, carefully sequenced, and broad-based approach.

Current Policy Response

110. The authorities rightly recognize that containing unemployment requires higher growth that in turn can be facilitated by steadfast implementation of economic reforms. They also acknowledge that the policy response must be formulated within a broader framework, which fosters greater efficiency through private sector initiative and increased competition. In particular, the structural rigidities in the labor market would need to be addressed. In this regard, a tripartite Committee consisting of representatives of the government, labor organizations, and employers is examining possible improvements to the Labor Law.

111. Notwithstanding these efforts, the emphasis of labor market strategies has been so far primarily focused on active labor market policies. The policy response has been articulated around three main pillars:

- **Vocational training**. In addition to the agencies managed by the Ministry of Labor, a number of private institutions have been licensed by the government to provide vocational training. Every year, more than one million workers benefit, with financial support of the government, from training that typically lasts one to three months.

- **Information bank on job seekers**. The Ministry of Labor has already initiated through its regional Employment Service Centers (ESC) the development of a national databank that would contain up-to-date and complete information on job seekers and potential employers. One million unemployed, or about one-third of the total, have already registered in the databank. In 2001/02, more than 100,000 jobs were matched through the information bank.

- **Government subsidies**. An array of schemes have been introduced to encourage job creation through: tax exemptions for new employees, subsidized credits to small enterprises and private firms that create employment, and direct support to priority sectors, vulnerable segments, and less-developed areas. The main schemes include:

  - Enterprises that employ new labor through the ESC would be exempted for a period of three years from the 23 percent tax for Social Security and the 3 percent tax for social insurance charged on the salary of the newly employed workers.

  - Newly employed wage earners are exempted from income tax for a period of three years. In fact, most new salaried workers fall below the taxable income threshold.

- A total amount of Rls 9 trillion (1.1 percent of GDP) has been allocated by the central bank to selected commercial banks to be extended in the form of credit to small-scale enterprises of less than five employees that hire an unemployed worker registered at the ESC. The credit will not exceed Rls 30 million per company and will be extended over five years with a subsidized interest rate of 4 percent. The enterprise will commit to maintain the employment over the duration of the loan, with the possibility to dismiss the initial recruit and hire a new employee if needed.

- Similarly, to encourage self-employment, credit facilities (with loans limited to Rls 30 million per individual at 4 percent interest rate) are made available to individuals who present a viable project that show that they could successfully become self-employed.

- Lending in foreign exchange from the Oil Stabilization Fund (OSF) has been made available to private companies that generate non-oil exports and create jobs. The amount made available is determined annually. The allocation for 2001/02 amounted to US$1 billion.

- Additional funds from the OSF have been allocated to the manufacturing and mining sectors with the aim of increasing investment in these sectors to maintain existing employment.

- Three percent of the banks' required reserves with the Central Bank are entrusted to the Agricultural Bank, the Housing Bank, and the Industry and Mining Bank to finance projects in non-public employment-generating projects.

- Part of the oil revenue in excess of the budgeted amount is allocated to job creation in less-developed areas. In 2001/02, an amount of Rls 2.4 trillion was extended to provinces with high unemployment, and an additional Rls 2.1 trillion to special projects in the Teheran province.

- The banking system is required to extend a minimum of 70 percent of the interest-free Gharzol-Hassanah saving accounts[64] (after deducting the required and prudential reserves) to individual borrowers in the form of interest-free micro-credit to help them acquire tools and equipment for their work.

[64] Gharzol-Hassonoh is a free interest sight deposit.

Other Labor Market Policy Options

112. Formulating detailed policy recommendations for a comprehensive labor market reform in Iran is beyond the scope of this note. The following thoughts, however, could serve as general guidance for such a reform, which would need to be integrated with other reforms that are under way or planned.

113. As noted earlier, public sector dominance of the economy is not conducive to bringing about the high growth rates necessary to provide employment to the rapidly growing labor force. With mounting unemployment pressures, it becomes tempting to resort to public sector employment, or to subsidize higher employment creation by the private sector. While such policies might help contain unemployment in the short run, they could have adverse fiscal implications and would run counter the long-term objective of empowering the private sector as the principal source of growth and employment creation.

114. An effective labor market policy would therefore need to rely on a long-term strategy to foster growth and put emphasis on:

(i) **Promoting the private sector as the main engine of growth and employment creation.** A sustained increase in employment opportunities should emanate from an increase in private sector investment in a more hospitable and enabling environment. Thus, the growth strategy must aim to create a competitive environment, unlock the potential of the private sector and reduce the role of the government in activities that can be carried out more efficiently by the private sector. Such policies must go hand in hand with efforts to preserve macroeconomic stability.

(ii) **Removing existing rigidities in the labor market.** Rigidities in the hiring and retrenchment of workers would need to be minimized in order to enhance the flexibility of the labor market and increase the employment content of growth. Liberalizing the labor regime would also ensure an orderly reallocation from the reforming state enterprise sector to private sector activities. In addition, the authorities should encourage the emergence of independent organizations representing the employers and the workers.

(iii) **Strengthening and restructuring the educational and vocational training systems.** In addition to expanding education opportunities for all citizens, Iran would need to reorient its education system. The educational system needs to shift its emphasis toward the acquisition of critical thinking and problem solving skills and take into account market needs. Moreover, training programs require closer coordination between the government and the employers in the private sector, with respect to the goals, management, and the financing of vocational training.

115. Considerations could also be given to specific sectoral policies to encourage job creation, in particular in labor-intensive sectors like construction or services. Such policies would need to rely primarily on supply-side policies, including deregulation and

privatization. For instance, the construction sector has a strong potential for job creation, because of its high labor intensity, high potential for growth and extensive backward and forward linkages. As much as 30 percent of the total jobs created in the period of the Third Five Year Development Plan could come from the construction sector. Similarly, services (in particular tourism and new technologies) are likely to generate a large number of jobs provided that a favorable environment is created to private sector participation.

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Table 1. Islamic Republic of Iran: Key Economic Indicators, 1997/98–2001/02 1/

	1997/98	1998/99	1999/2000	2000/01	Prel. Est. 2001/02
			(In percentage change)		
Output and prices					
Nominal GDP at factor cost	18.2	13.8	32.0	32.5	16.7
Domestic demand (nominal)	...	20.0	22.7	29.6	23.0
Domestic demand (constant prices)	...	3.0	-2.3	4.7	8.1
Real GDP at factor cost	5.0	1.8	3.6	5.7	4.8
Real oil GDP	-5.2	2.2	-6.0	8.4	-8.4
Real non-oil GDP	6.1	1.7	4.5	5.5	6.0
Inflation rate					
CPI yearly (average)	17.3	18.1	20.1	12.6	11.4
GDP deflator at factor cost	12.6	11.8	27.4	25.4	11.3
Non-oil GDP deflator at factor cost	15.6	19.2	18.0	21.0	13.7
Unemployment rate 2/	12.2	14.7	16.0	15.8	16.2
Crude oil production (millions of barrels per day)	3.6	3.7	3.4	3.7	3.4
Average oil export price (in U.S. dollar per barrel)	16.4	10.5	18.6	25.3	21.5
			(In percent of GDP)		
Investment and savings					
Total fixed investment	29.7	30.4	30.7	30.3	31.1
Public	10.6	9.5	9.9	8.2	6.7
Private	19.1	20.9	20.7	22.1	24.4
Gross national savings	31.2	28.1	37.1	43.7	35.9
Public	8.0	2.0	9.4	17.0	7.6
Private	23.2	26.1	27.7	26.6	28.3
Savings/investment balance	1.5	-2.3	6.4	13.4	4.8
Budgetary operations					
Budgetary revenue	24.9	19.9	24.3	33.5	26.7
Budgetary expenditure and net lending	27.5	27.4	24.8	24.6	25.8
Budgetary balance (including OSF)	-2.6	-7.5	-0.6	8.8	0.9
Budgetary balance (excluding OSF)	-2.6	-7.5	-0.6	0.6	-0.9
			(Annual percentage change)		
Monetary sector 3/					
Net foreign assets	...	-90.2	619.4	182.9	38.4
Net domestic assets	...	27.8	16.8	25.9	28.7
Of which: credit to private sector	...	31.1	31.0	27.3	30.6
Broad money	...	19.6	20.2	30.5	25.8
Velocity of broad money	...	2.2	2.2	2.0	2.0
			(In billions of U.S. dollar)		
External sector					
Exports of goods and services	20.0	15.1	22.4	29.9	26.0
Imports of goods and services	-18.2	-17.8	-16.4	-17.9	-21.6
Current account balance	2.2	-2.1	6.6	12.6	5.4
External public- and publicly-guaranteed debt	14.7	14.1	10.8	8.0	7.2
Of which: short-term debt	5.1	4.5	4.0	3.7	2.7
Memorandum items:					
Nominal GDP (in billions of Iranian rials)	285,127	324,357	428,298	567,591	662,514
Nominal effective exchange rate 3/	...	163.2	118.9	130.1	143.4
Real effective exchange rate 3/	...	118.3	100.0	118.5	139.1
Average exchange rate (Iranian rials per U.S. dollar)	...	5,404.0	7,908.0	8,078.0	7,921.0

Sources: Data provided by the Iranian authorities; and Fund staff estimates.

1/ Iranian fiscal years ending March 20.
2/ Based on central bank data.
3/ Using TSE rate and 1999/2000=100.

Table 2. Islamic Republic of Iran: Aggregate Output and Expenditure Trends, 1997/98–2001/02 1/

	1997/98	1998/99	1999/2000	2000/01	Prel. 2001/02 2/
	(Annual percentage changes)				
Oil GDP 3/	-5.2	2.2	-6.0	8.4	-8.4
Non-oil GDP	6.1	1.7	4.5	5.5	6.0
Agriculture	9.1	-4.3	0.5	2.8	4.7
Industry	5.4	-0.1	10.6	7.4	10.4
Services	5.3	4.5	3.8	5.6	4.8
GDP at factor cost	5.0	1.8	3.6	5.7	4.8
Gross domestic expenditure	4.9	3.0	-2.3	4.7	7.1
Consumption expenditure	4.5	6.6	0.6	4.3	3.5
Gross domestic investment	6.0	-5.5	-10.2	5.9	18.0
	(In percent of GDP)				
Oil GDP 2/ 4/	8.5	8.5	7.7	7.9	6.9
Non-oil GDP 4/	91.5	91.5	92.3	92.1	93.1
Agriculture	19.1	17.9	17.4	16.9	16.9
Industry	18.8	18.4	19.7	20.0	21.1
Services	53.7	55.2	55.2	55.2	55.2
Gross domestic expenditure 5/	95.7	96.8	91.2	90.4	92.2
Consumption expenditure	67.3	70.4	68.4	67.5	66.5
Gross domestic investment	28.4	26.3	22.8	22.9	25.7

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian years ending March 20.

2/ Data provided by the authorities may differ from numbers in Table 1 and the SM/02/279, which are based on staff estimates.

3/ Includes oil and gas production, refining, and distribution.

4/ In percent of GDP at factor cost, current prices.

5/ In percent of GDP at current market prices.

Table 3. Islamic Republic of Iran: Central Government Fiscal Operations, 1997/1998–2001/02 (Continued) 1/

	1997/98	1998/99	1999/2000	2000/01	Est. 2001/02
	(In billions of Iranian rials)				
Revenue	70,012	62,881	103,891	189,989	176,860
Revenue from oil and gas exports	37,493	22,530	44,487	128,205	101,522
Of which: earmarked revenue for Oil Stabilization Fund (OSF)	...	...	...	n.a.	14,636
Tax and nontax revenue	32,519	40,351	59,404	61,784	75,337
Tax revenue	17,345	18,686	38,757	33,298	38,797
Nontax revenue	8,777	12,734	9,072	12,004	13,824
Of which: revenue income on OSF 2/	...	...	...	n.a.	1,240
Earmarked revenue 3/	6,397	8,931	11,575	16,481	22,717
Expenditure and net lending	76,842	84,843	106,301	139,893	170,861
Current expenditure	44,498	53,632	67,987	88,068	112,551
Of which: wages and salaries	28,699	35,713	n.a.	n.a.	44,000
Of which: subsidies	7,548	7,263	7,651	8,118	11,784
Capital expenditure	19,061	17,655	24,942	30,115	27,359
Coverage of contingent liabilities (LCs)			...	...	...
Earmarked expenditure 4/	6,397	8,931	11,575	16,481	22,717
Foreign exchange losses 5/	7,216	5,077	1,993	2,028	0
Net lending	-330	-187	-196	3,201	4,370
Of which: net lending from the OSF	...	...	...	399	3,961
Extrabudgetary expenditure	...	...	...	...	3,863
Overall balance (deficit (-))	-6,830	-21,962	-2,410	50,096	5,999
Excluding OSF	...	...	...	3,472	-5,917
Overall non-oil balance (deficit (-))	-44,323	-44,492	-46,897	-78,110	-95,523
Financing	6,830	21,962	2,410	-50,096	-5,999
Net domestic	7,065	16,895	2,290	-43,221	-1,370
Banking system (net)	4,891	12,056	-390	-45,265	-3,205
Financing by BMJII 5/	6,806	5,077	1,813	...	-2,348
OSF (net)	...	...	...	-46,625	-11,853
Other bank financing	...	...	...	...	16,036
Nonbank	2,174	4,839	2,680	2,044	1,835
Net external	-3	5,539	120	-6,875	-4,629

Table 3. Islamic Republic of Iran: Central Government Fiscal Operations, 1997/1998–2001/02 (Concluded) 1/

	1997/98	1998/99	1999/2000	2000/01	Est. 2001/02
	(In percent of GDP)				
Revenue	24.9	19.9	24.3	33.5	26.7
Revenue from oil and gas exports	13.3	7.1	10.4	22.6	15.3
Of which: earmarked revenue for OSF	...	...	...	n.a.	2.2
Tax and nontax revenue	11.6	12.7	13.9	10.9	11.4
Tax revenue	6.2	5.9	9.0	5.9	5.9
Nontax revenue	...	...	2.1	2.1	2.1
Earmarked revenue 3/	...	...	2.7	2.9	3.4
Expenditure and net lending	27.4	26.8	24.8	24.6	25.8
Current expenditure	15.8	16.9	15.9	15.5	17.0
Of which: wages and salaries	10.2	11.3	n.a.	n.a.	6.6
Of which: subsidies	2.7	2.3	1.8	1.4	1.8
Capital expenditure	6.8	5.6	5.8	5.3	4.1
Coverage of contingent liabilities (LCs)	0.0	0.0	...	...	...
Earmarked expenditure 4/	2.3	2.8	2.7	2.9	3.4
Foreign exchange losses 5/	2.6	1.6	0.5	0.4	0.0
Net lending	-0.1	-0.1	0.0	0.6	0.7
Extrabudgetary expenditure	...	...	...	...	0.6
Overall balance (deficit (-))	-2.4	-6.9	-0.6	8.8	0.9
Excluding OSF	...	...	...	0.6	-0.9
Overall non-oil balance (deficit (-))	-15.8	-14.1	-10.9	-13.8	-14.4
Financing	2.4	6.9	0.6	-8.8	-0.9
Net domestic	2.5	5.3	0.5	-7.6	-0.2
Banking system (net)	1.7	3.8	-0.1	-8.0	-0.5
Nonbank	0.8	1.5	0.6	0.4	0.3
Net external	0.0	1.7	0.0	-1.2	-0.7
Memorandum item:					
Nominal GDP (in billions of Iranian rials)	280,908	316,646	428,298	567,591	662,514

Sources: Bank Markazi Jomhouri Islami Iran; Plan and Budget Organization; and Fund staff estimates and projections.

1/ Iranian fiscal years ending March 20.
2/ Includes OSF domestic lending facility.
3/ Mostly revenue of the Social Security Organization and medical services provided by universities.
4/ Counterpart of earmarked revenue.
5/ Budget outlays to cover the foreign exchange losses of the central bank, inclusive of contingent liabilities due to exchange rate unification.

Table 4. Islamic Republic of Iran: Balance of Payments, 1997/98–2001/02 (Continued) 1/

(In millions of U.S. dollars; unless otherwise indicated)

	1997/98	1998/99	1999/2000	2000/01	Prel. 2001/02
Current account	2,213	-2,140	6,589	12,634	5,432
(In percent of GDP)	1.5	-2.2	6.4	13.4	4.8
Trade balance	4,258	-1,168	7,597	13,375	5,578
Exports	18,381	13,118	21,030	28,461	23,716
Oil and gas	15,471	9,933	17,089	24,280	19,339
Crude oil export	14,009	8,586	14,718	21,490	17,029
Exports of petroleum products and gas	1,462	1,347	2,371	2,790	2,310
Refined product	1,257	1,137	2,151	2,497	2,133
Gas exports and others	205	210	220	293	177
Non-oil	2,910	3,185	3,941	4,181	4,377
Imports	-14,123	-14,286	-13,433	-15,086	-18,138
Services account	-2,438	-1,469	-1,533	-1,351	-1,144
Credits	1,658	2,023	1,396	1,416	2,304
Freight and insurance	323	298	310	450	657
Interest income	466	230	181	215	456
Other	869	1,495	905	751	1,191
Debits	-4,096	-3,492	-2,929	-2,767	-3,448
Freight and insurance	-1,550	-1,711	-1,240	-1,347	-1,569
Interest payments	-725	-731	-473	-370	-231
Other	-1,821	-1,050	-1,216	-1,050	-1,648
Transfers	393	497	525	610	998
Capital and financial account	37	840	-4,811	-4,897	-552
Medium-term and long-term capital	-2,823	-251	-2,944	-2,555	288
Bilateral project financing	966	598	-1,159	-473	168
Disbursements	1,774	1,521	829	653	959
Repayments	-808	-923	-1,988	-1,126	-791
Repayments of rescheduled debt	-3,896	-2,928	-1,581	-884	-327
Other official financing and debt portfolio investment 2/	107	68	81	10	-35
Borrowing by MoF (collateral by securities)	...	448	-448	0	0
Oil prefinancing	...	1,563	163	-1,208	482
Short-term capital	465	-544	-330	-326	-1,026
LC-related borrowing 3/	851	489	-330	-326	-1,026
Other capital 4/	2,395	1,285	-1,937	-2,416	-1,899
Commercial banks	2,395	985	-1,637	-2,416	-1,899
Deferred payments to creditors by commercial banks	...	300	-300	0	0
Foreign direct investment and portfolio equity	0	350	400	400	2,085
Of which: buy-backs	...	...	365	360	2,000
Errors and omission	-6,254	-227	308	-857	61
Overall balance	-4,004	-1,527	2,086	6,880	4,941
Financing	4,004	1,527	-2,086	-6,880	-4,941
Change in NFA (increase -)	4,170	1,533	-1,917	-6,880	-4,941

Table 4. Islamic Republic of Iran: Balance of Payments, 1997/98–2001/02 (Concluded) 1/

(In millions of U.S. dollars; unless otherwise indicated)

	1997/98	1998/99	1999/2000	2000/01	Prel. 2001/02
Memorandum items:					
Gross official reserves (in millions of U.S. dollars)	5,263	3,730	5,647	12,527	17,468
Of which: Oil Stabilization Fund 5/	...	...	...	5,900	7,440
(In months of imports of G&S)	3.5	2.5	4.1	8.4	9.7
External debt service (as percent of exports of G&S) 6/	27.8	33.5	23.8	12.5	7.8
Oil exports (million barrel per day)	2.4	2.3	2.1	2.3	2.1
Oil exports average price (U.S. dollar per barrel)	16.4	10.5	18.6	25.3	21.5
Exports volume growth	-1.1	0.4	0.4	8.6	-6.3
Oil	0.2	-1.8	-5.7	9.5	-10.0
Non-oil	-6.7	9.5	23.7	6.1	4.7
Imports volume growth	4.6	1.2	-4.3	13.1	24.5

Source: Data provided by the Iranian authorities; and Fund staff estimates.

1/ Iranian fiscal years ending March 20.
2/ Includes World Bank lending.
3/ Some letters of credit (LC) have maturities in excess of one year.
4/ Reflecting borrowing of the Bank Markazi from the commercial banks and some deferred trade payments of banks.
5/ Represents the part of OSF that will be kept in foreign exchange.
6/ Excluding short-term debt.

Table 5. Islamic Republic of Iran: Monetary Survey, 1997/98–2001/02 1/

(In billions of Iranian rials; unless otherwise indicated)

	1997/98	1998/99	1999/2000	2000/01	2001/02	2001/02 2/
Net foreign assets	9,586	938	6,747	19,090	26,429	119,684
Foreign assets of BMJII	11,373	8,358	12,095	22,631	30,837	139,648
Foreign assets of banks	4,148	2,424	5,290	9,266	12,588	57,007
Foreign liabilities of BMJII	4,040	4,319	4,227	2,946	4,310	19,517
Foreign liabilities of banks	1,895	5,525	6,410	9,862	12,687	57,454
Net domestic assets	128,102	163,688	191,193	240,655	309,759	222,036
Net domestic credit	141,242	185,758	227,559	261,239	329,765	286,495
Net credit to govenrment	33,000	43,898	41,739	24,637	20,659	-22,611
Claims on the government	45,249	62,646	65,519	63,364	68,582	74,774
Deposits	12,249	18,748	23,781	38,727	47,922	97,385
Claims on NFPEs	32,502	43,640	47,907	55,731	66,564	66,564
Claims on the private sector	75,740	98,220	137,913	180,871	242,542	242,542
Other items, net, excluding CPPs	-13,140	-22,071	-36,366	-20,584	-20,006	-64,459
Broad money (M3)	137,688	164,625	197,940	259,745	336,190	341,719
M2	137,688	164,625	197,940	258,274	325,023	325,023
Cash	15,380	18,773	22,119	25,158	29,189	29,189
Deposits	122,308	145,852	175,821	233,116	295,834	295,834
Demand deposits	51,325	60,235	69,882	98,425	117,833	117,833
Time deposits	70,983	85,617	105,938	134,690	178,001	178,001
CPPs held by nonbanks	0	0	0	0	9,600	9,600
Foreign exchange deposits 3/	...	0	0	1,471	1,567	7,096
In millions of U.S. dollars	...	0	0	841	895	895
Accounting exchange rate,						
Iranian Rls per U.S. dollar	1,750	1,750	1,750	1,750	1,750	7,925
Memorandum items:						
M1	66,705	79,008	92,002	123,584	147,022	147,022
M2, excluding foreign currency deposits and CPP	137,688	164,625	197,940	258,274	325,023	325,023
Multiplier (base money/M2)	2.45	2.47	2.55	2.73	3.14	3.05
Income velocity of M2	0.00	1.97	2.16	2.20	2.04	2.04
GDP	...	324,357	428,298	567,591	662,514	662,514
Annual percentage changes:						
NFA	...	-90.2	619.4	182.9	38.4	...
NDA	...	27.8	16.8	25.9	28.7	...
Base money	...	18.3	16.5	22.3	9.3	...
M2, excluding foreign currency deposits and CPP	...	19.6	20.2	30.5	25.8	...
M3	...	19.6	20.2	31.2	29.4	...
Credit to the private sector and NFPEs	...	31.1	31.0	27.3	30.6	...
Credit to the private sector	...	29.7	40.4	31.1	34.1	...

Sources: Bank Markazai Jomhouri Islami Iran; and Fund staff estimates and projections.

1/ Iranian fiscal years ending March 20.
2/ End-2001/02 were revalued at the unified exchange rate of March 23, 2002.
3/ Data on foreign currency deposits before 2000/01 are reported under foreign liabilities.

Table 6. Islamic Republic of Iran: Gross Domestic Product by Industrial Origin at Constant Prices, 1997/98–2001/02 1/

	1997/98	1998/99	1999/2000	2000/01	Prel. 2001/02
	(In billions of Iranian rials at 1990/91 prices)				
GDP at factor cost	47,132	47,968	49,704	52,529	55,070
Oil 2/	3,984	4,073	3,829	4,149	3,799
Non-Oil	43,149	43,895	45,875	48,380	51,271
Agriculture	8,979	8,593	8,636	8,878	9,295
Industry	8,856	8,843	9,783	10,508	11,596
Mining	401	411	499	523	573
Manufacturing	5,677	5,732	6,240	6,737	7,411
Construction	2,269	2,157	2,457	2,628	2,952
Water and power	509	545	587	619	660
Services	25,313	26,459	27,456	28,994	30,380
Transport and communication	4,798	5,147	5,606	6,414	6,924
Banking and insurance	520	594	615	655	700
Trade	7,218	7,589	7,628	8,243	8,792
Ownership and dwellings	8,174	8,463	9,032	9,105	9,442
Public services	4,111	4,100	3,950	3,882	3,811
Private services	920	942	1,042	1,101	1,154
Less: imputed bank service charge	427	376	416	406	443
	(Annual percentage change)				
GDP at factor cost	5.0	1.8	3.6	5.7	4.8
Oil 2/	-5.2	2.2	-6.0	8.4	-8.4
Non-Oil	6.1	1.7	4.5	5.5	6.0
Agriculture	9.1	-4.3	0.5	2.8	4.7
Industry	5.4	-0.1	10.6	7.4	10.4
Mining	-0.9	2.4	21.5	4.8	9.6
Manufacturing	11.3	1.0	8.9	8.0	10.0
Construction	-6.2	-5.0	13.9	7.0	12.3
Water and power	6.0	7.0	7.8	5.5	6.6
Services	5.3	4.5	3.8	5.6	4.8
Transport and communication	3.8	7.3	8.9	14.4	7.9
Banking and insurance	7.2	14.2	3.6	6.5	6.8
Trade	5.1	5.1	0.5	8.1	6.7
Ownership and dwellings	6.8	3.5	6.7	0.8	3.7
Public services	7.5	-0.3	-3.7	-1.7	-1.8
Private services	-1.4	2.4	10.6	5.7	4.8
Less: imputed bank service charge	21.6	-12.0	10.3	-2.5	9.1

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.
2/ Includes oil and gas production, refining, and distribution.

Table 7. Islamic Republic of Iran: Gross Domestic Product by Industrial Origin at Current Prices, 1997/98–2001/02 1/

	1997/98	1998/99	1999/2000	2000/01	Prel. 2001/02
	(In billions of Iranian rials)				
GDP at factor cost	285,127	324,358	428,298	567,591	662,514
Oil 2/	40,725	27,952	62,839	101,055	100,262
Non-Oil	244,402	296,406	365,459	466,536	562,252
Agriculture	42,742	56,364	64,140	77,159	89,125
Industry	56,014	61,880	81,816	107,615	133,456
Mining	1,522	1,914	2,398	2,943	3,667
Manufacturing	38,951	43,960	57,924	75,758	94,773
Construction	12,708	12,606	17,301	21,695	26,424
Water and power	2,833	3,401	4,194	7,219	8,592
Services	145,645	178,161	219,503	281,762	339,670
Transport and communication	23,983	26,088	30,619	47,385	59,970
Banking and insurance	3,091	4,694	7,006	10,456	14,502
Trade	43,273	53,640	67,036	82,960	94,787
Ownership and dwellings	40,271	50,204	62,499	74,756	91,875
Public services	31,700	39,317	47,718	61,740	75,480
Private services	6,693	8,269	11,204	14,005	16,287
Less: imputed bank service charge	3,366	4,049	6,580	9,539	13,231
Net indirect taxes	166	438	441	607	2,266
GDP at market prices	285,293	324,796	428,739	568,197	664,779
	(In percent of GDP)				
GDP at factor cost	99.9	99.9	99.9	99.9	99.7
Oil 2/	14.3	8.6	14.7	17.8	15.1
Non-Oil	85.7	91.3	85.2	82.1	84.6
Agriculture	15.0	17.4	15.0	13.6	13.4
Industry	19.6	19.1	19.1	18.9	20.1
Mining	0.5	0.6	0.6	0.5	0.6
Manufacturing	13.7	13.5	13.5	13.3	14.3
Construction	4.5	3.9	4.0	3.8	4.0
Water and power	1.0	1.0	1.0	1.3	1.3
Services	51.1	54.9	51.2	49.6	51.1
Transport and communication	8.4	8.0	7.1	8.3	9.0
Banking and insurance	1.1	1.4	1.6	1.8	2.2
Trade	15.2	16.5	15.6	14.6	14.3
Ownership and dwellings	14.1	15.5	14.6	13.2	13.8
Public services	11.1	12.1	11.1	10.9	11.4
Private services	2.3	2.5	2.6	2.5	2.5
Less: imputed bank service charge	1.2	1.2	1.5	1.7	2.0
Net indirect taxes	0.1	0.1	0.1	0.1	0.3
GDP at market prices	100.0	100.0	100.0	100.0	100.0

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.
2/ Includes oil and gas production, refining, and distribution.

Table 8. Islamic Republic of Iran: Gross Domestic Expenditure at Current Prices, 1997/98--2001/02 1/

	1997/98	1998/99	1999/2000	2000/01	Prel. 2001/02
	(In billions of Iranian rials)				
Gross domestic expenditure	273,491	328,094	402,544	521,682	619,355
Consumption expenditure	180,057	230,493	280,415	339,777	399,484
Private sector	139,929	180,327	219,030	259,975	302,264
Public sector	40,128	50,166	61,385	79,802	97,219
Gross domestic investment	93,434	97,600	122,128	181,905	219,872
Gross fixed capital formation	84,611	98,711	131,417	172,089	197,834
Private sector	54,401	67,910	88,787	125,394	148,256
Public sector	30,210	30,801	42,629	46,696	49,578
Change in stocks 2/	14,168	2,011	-12,991	21,765	56,518
Net export of goods and nonfactor service	6,457	-6,420	29,898	34,567	10,913
Exports 3/	51,007	44,857	93,509	131,811	133,145
Imports 3/	44,550	51,277	63,611	97,244	122,232
GDP at market prices	285,293	324,796	428,739	568,197	664,779
Net factor income from abroad	-1,292	581	-427	-4,610	-3,412
GNP at market prices	284,001	325,376	428,312	563,588	661,367
Memorandom Item:					
Gross national income	278,656	322,254	432,015	551,639	626,856
Gross national saving	98,599	91,761	151,600	211,862	227,372
	(In percent of GDP)				
Gross domestic expenditure	95.9	101.0	93.9	91.8	93.2
Consumption expenditure	63.1	71.0	65.4	59.8	60.1
Private sector	49.0	55.5	51.1	45.8	45.5
Public sector	14.1	15.4	14.3	14.0	14.6
Gross domestic investment	32.8	30.0	28.5	32.0	33.1
Gross fixed capital formation	29.7	30.4	30.7	30.3	29.8
Private sector	19.1	20.9	20.7	22.1	22.3
Public sector	10.6	9.5	9.9	8.2	6.7
Change in Stocks 2/	5.0	0.6	-3.0	3.8	8.5
Memorandom item:					
Gross national saving	34.6	28.3	35.4	37.3	34.2

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

2/ Data provided by the authorities may differ from numbers in Table 1 and the SM/02/279, which are based on staff estimates.

3/ Includes statistical discrepancy. Numbers reported in this table may not match those of Table 1 because these are staff estimates.

4/ Fund staff estimates based on balance of payments data provided by the authorities, which have been converted into Iranian rials at the corresponding exchange rates for various current account transactions.

Table 9. Islamic Republic of Iran: Gross Domestic Expenditure at Constant Prices, 1997/98–2001/02 1/

	1997/98	1998/99	1999/2000	2000/01	Prel. 2001/02 2/
	(In billions of Iranian rials at 1990/91 prices)				
Gross domestic expenditure	45,120	46,479	45,402	47,534	50,929
Consumption expenditure	31,732	33,831	34,041	35,505	36,737
Private sector	26,236	28,026	28,341	29,696	31,006
Public sector	5,496	5,804	5,701	5,809	5,731
Gross domestic investment	13,388	12,648	11,361	12,029	14,192
Gross fixed capital formation	11,683	12,189	13,139	14,233	15,649
Private sector	7,555	8,386	8,626	9,860	11,343
Public sector	4,128	3,803	4,513	4,373	4,306
Change in stocks	3,161	476	-984	-277	543
Net export of goods and nonfactor service	584	1,539	3,560	3,124	2,329
Exports	6,302	7,251	8,853	8,772	9,037
Imports	5,718	5,712	5,294	5,647	6,708
GDP at market prices	47,160	48,034	49,755	52,585	55,258
Net factor income from abroad	470	562	151	-117	262
GNP at market prices	47,630	48,596	49,906	52,468	55,520
Memorandom Item:					
Terms of trade adjustment	228	-2,405	-868	-948	-1,656
Gross national income 3/	47,858	46,191	49,038	51,519	53,864
Gross national saving	14,671	12,345	14,204	14,088	15,126
	(Annual percentage changes)				
Gross domestic expenditure	4.9	3.0	-2.3	4.7	7.1
Consumption expenditure	4.5	6.6	0.6	4.3	3.5
Private sector	4.2	6.8	1.1	4.8	4.4
Public sector	5.7	5.6	-1.8	1.9	-1.3
Gross domestic investment	6.0	-5.5	-10.2	5.9	18.0
Gross fixed capital formation	8.9	4.3	7.8	8.3	9.9
Private sector	14.6	11.0	2.9	14.3	15.0
Public sector	-0.3	-7.9	18.7	-3.1	-1.5
Change in stocks	6.7	1.0	-2.0	-0.5	1.0
Memorandom item:					
Gross national saving	-1.6	-15.9	15.1	-0.8	7.4

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

2/ Data provided by the authorities may differ from numbers in Table 1 and the SM/02/279, which are based on staff estimates.

3/ Adjusted for changes in terms of trade.

Table 10. Islamic Republic of Iran: Production, Exports, and Domestic Consumption of Oil, 1997/98–2001/02 1/

(In thousands of barrels per day)

	1997/98	1998/99	1999/2000	2000/01	Est. 2001/02
Crude oil production	3,623	3,666	3,373	3,661	3,441
Crude oil exports	2,400	2,300	2,079	2,345	2,076
Net exports of refined products	56	113	197	147	168
Domestic consumption 2/	1,161	1,250	1,131	1,099	1,141
Gasoline	220	212	212	202	...
Kerosene	183	173	157	151	...
Gas oil	405	376	364	348	...
Fuel oil	230	310	225	231	...
Liquid petroleum gas	58	44	43	42	...
Other products 3/	65	135	130	125	...

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

2/ The discrepancy between domestic consumption and the amount obtained by subtracting net exports from production reflects changes in inventories, crude oil flowing in the pipelines, and refining wastage.

3/ Includes aviation fuel, tar, lubricants, solvents, and insecticides.

Table 11. Islamic Republic of Iran: Crude Oil Deliveries to Domestic Refineries, 1997/98–2001/02 1/

(In thousands of barrels per day)

	1997/98	1998/99	1999/2000	2000/01	Est. 2001/02
Abadan	349	340	312	310	...
Tehran (I and II)	207	200	210	200	...
Tabriz	95	100	100	100	...
Shiraz	38	44	40	40	...
Bakhtaran	19	24	23	22	...
Isfahan	312	280	280	253	...
Lavan Topping Plant	24	27	25	21	...
Arak	151	154	150	150	...
Bandar Abbas	86	220	220	220	...
Total	1,281	1,389	1,360	1,316	1,366

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

Table 12. Islamic Republic of Iran: Domestic Retail Prices of Petroleum Products and Electricity, 1997/98–2002/03 1/

(In Iranian rials per liter)

	1997/98	1998/99	1999/2000	2000/01	Est. 2001/02	Budget 2002/03
Gasoline						
High octane	220	280	420	500	600	665
Regular	160	200	350	385	450	500
Kerosene	40	60	100	110	120	130
Gas oil	40	60	100	110	120	130
Fuel oil	20	30	50	55	62	70
Electricity (average price per kWh)	50	67	80	88	97	112

Source: Bank Markazi Jomhuri Islami Iran.

1/ Iranian fiscal years ending March 20. Petroleum product prices are set at the beginning of the fiscal year.

Table 13. Islamic Republic of Iran: Natural Gas Production and Uses, 1997/98–2001/02 1/

(In billions of standard cubic meters)

	1997/98	1998/99	1999/2000	2000/01	Est. 2001/02
Gross production 2/	69.5	72.5	80.0	83.2	86.5
Domestic consumption	47.6	51.5	58.7	62.8	67.2
Exports	0.0	0.0	0.0	0.0	0.5
Flared	11.5	11.1	13.5	13.8	13.3
Local consumption and losses	10.4	9.9	7.8	6.6	5.5
Memorandum item:					
Gas reinjected	22.3	24.9	24.7	26.0	27.5

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian years ending March 20.
2/ Excludes gas reinjected.

Table 14. Islamic Republic of Iran: Domestic Prices for Major Agricultural Products and Fertilizers, 1997/98–2001/02 1/

(In Iranian rials per kilogram)

	1997/98	1998/99	1999/2000	2000/01	2001/02
Agricultural products 2/					
Cotton	...	...	1,990	2,428	2,820
Corn	430	534	598	775	890
Wheat	480	600	672	875	1,050
Rice	1,350	1,555	1,742	2,350	2,850
Sunflower	1,350	1,400	1,490	1,818	2,035
Barley	387	478	535	694	800
Sugar beets	125	157	175	225	252
Soybean	1,100	1,200	1,300	1,586	1,770
Green tea	820	950	1064	1360	1,540
Potatoes	210	262	293	380	437
Onions	180	225	252	327	337
Lentils	1,050	1,312	1,469	1,905	2,285
Peas	860	1,075	1,204	1,560	1,870
White beans	1,030	1,287	1,441	1,868	2,240
Red beans	950	1,187	1,330	1,723	2,065
Mixed beans	1,030	1,287	1,441	1,868	2,240
Fertilizers					
Urea	224	247	258	315	345
Potash	220	252	253	380	415
Diammonium phosphate	292	325	368	450	495

Sources: Ministry of Agriculture; and Consumer and Producer Protection Organization.

1/ Iranian years ending March 20.

2/ The domestic prices presented for the agricultural crops in this table are the guaranteed floor prices payable to the domestic farmers. For most crops, the actual market price is above the guaranteed floor price.

Table 15. Islamic Republic of Iran: Output, Cultivated Area, and Yield of Major Crops, 1997/98–2001/02 1/

(Output in thousands of tons, cultivated area in thousands of hectares, and yield in tons per hectare)

	1997/98	1998/99	1999/2000	2000/01	Est. 2001/02
Cotton					
Production	451	460	441	497	411
Area	238	229	216	246	199
Yield	1.9	2.0	2.0	2.0	2.1
Wheat					
Production	10,045	11,955	8,673	8,088	9,474
Area	6,299	6,189	4,739	5,101	5,547
Yield	1.6	1.9	1.8	1.6	1.7
Barley					
Production	2,499	3,301	1,999	1,686	2,408
Area	1,501	1,825	1,403	1,194	1,470
Yield	1.6	1.8	1.4	1.4	1.6
Rice					
Production	2,350	2,771	2,348	1,971	1,969
Area	563	615	587	534	510
Yield	4.2	4.5	4.0	3.7	3.9
Sugar beets					
Production	4,754	4,987	5,548	4,332	4,648
Area	191	185	186	163	172
Yield	24.9	27.0	29.8	26.6	27.0
Oil seeds					
Production	267	329	271	247	247
Area	233	259	237	208	197
Yield	1.2	1.3	1.1	1.2	1.3
Pistachio					
Production	112	314	131	304	...
Area	247	259	256	275	...
Yield	0.5	1.2	0.5	1.1	...
Green tea					...
Production	309	270	275	223	...
Area	35	35	34	31	...
Yield	8.8	7.7	8.1	7.2	...
Tobacco					
Production	24	23	22	21	20
Area	21	21	23	20	18
Yield	1.1	1.1	0.9	1.1	1.1
Onions					
Production	1,157	1,210	1,677	1,344	...
Area	46	48	56	44	...
Yield	25.1	25.2	29.9	30.5	...
Potatoes					
Production	3,284	3,430	3,433	3,658	...
Area	158	163	161	169	...
Yield	20.8	21.0	21.3	21.6	...

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

Table 16. Islamic Republic of Iran: Output Value of Major Crops, 1997/98–2001/02 1/

(In millions of Iranian rials at 1982/83 prices)

	1997/98	1998/99	1999/2000	2000/01	Est. 2001/02
Cotton	37,415	38,162	36,586	41,232	34,097
Wheat	352,580	419,621	304,423	283,889	332,538
Barley	104,208	137,652	83,358	70,306	100,414
Rice	317,485	374,362	317,215	266,282	266,012
Sugar beet	9,175	9,625	10,783	8,361	8,971
Oil seeds	28,596	35,236	29,024	26,454	26,454
Pistachio	32,266	90,460	83,834	87,579	...
Green tea	17,520	15,309	13,211	12,644	...
Tobacco	8,112	7,774	7,436	7,098	6,760
Onions	41,189	43,076	59,701	47,486	...
Potatoes	115,268	120,393	120,498	128,396	...
Total	1,063,814	1,291,670	1,066,069	980,087	775,245
Memorandum item:					
Annual percentage change	-8.04	21.42	-17.47	-4.13	-20.90

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

Table 17. Islamic Republic of Iran: Production Index for Large Manufacturing Establishments, 1997/98–2001/02 1/

	Weights	1997/98 2/	1998/99	1999/2000	2000/01	Prel. 2001/02	
						Q1	Q2
Manufacture of food products and beverages	10.6	100.0	98.6	109.4	110.1	103.4	104.2
Manufacture of tobacco products	0.9	100.0	121.4	150.0	99.8	45.6	59.2
Manufacture of textiles	8.7	100.0	98.5	96.3	92.0	73.8	96.1
Manufacture of wearing apparel; dressing and dyeing of fur	0.2	100.0	67.4	78.4	69.4	46.3	62.9
Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness, and footwear	0.5	100.0	81.2	58.6	71.5	72.9	78.9
Manufacture of wood and of products of wood and cork (except furniture)	1.1	100.0	89.1	94.6	89.9	80.8	101.8
Manufacture of paper and paper products	1.2	100.0	98.5	112.8	106.8	88.4	89.0
Manufacture of coke, refined petroleum products, and nuclear fuel	6.8	100.0	103.2	132.2	171.4	167.1	162.4
Manufacture of chemicals and chemical products	12.0	100.0	99.3	108.9	109.8	111.4	119.1
Manufacture of rubber and plastics products	3.9	100.0	90.1	106.3	118.4	97.9	122.9
Manufacture of other nonmetallic mineral products	8.9	100.0	100.0	115.3	121.4	120.2	141.8
Manufacture of basic metals	15.0	100.0	92.9	106.2	112.9	107.8	126.1
Manufacture of fabricated metal products (except machinery and equipment)	3.7	100.0	99.7	107.8	110.9	90.4	150.7
Manufacture of machinery and equipment N.E.C.	7.5	100.0	102.6	106.9	108.3	88.9	115.2
Manufacture of electrical machinery and apparatus N.E.C	2.9	100.0	107.7	129.0	143.7	117.0	160.8
Manufacture of radio, television, and communication equipment and apparatus	2.7	100.0	102.4	131.2	122.1	100.5	151.0
Manufacture of medical, precision and optical instruments, watches, and clocks	0.5	100.0	98.6	90.2	103.1	64.1	112.0
Manufacture of motor vehicles, trailers, and semi-trailers	11.6	100.0	119.7	137.3	153.2	138.0	185.8
Manufacture of other transport equipment	1.2	100.0	117.0	116.2	149.2	132.1	247.9
Manufacture of furniture; manufacturing N.E.C.	0.2	100.0	86.4	177.4	189.1	131.3	190.6
Overall production	100.0	100.0	101.2	113.8	120.6	109.9	132.7
Annual percentage change	...	...	1.2	12.5	6.0	4.7	6.6

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.
2/ Includes the establishments with more than 100 employees and are not comparable with the previous years' data.

Table 18. Islamic Republic of Iran: Employment Indices for Large Manufacturing Establishments, 1997/98–2001/02 1/

	1997/98 2/	1998/99	1999/2000	2000/01	Prel. Q1 2001/02	Prel. Q2 2001/02
Manufacture of food products and beverages	100.0	101.0	102.1	101.3	94.5	93.6
Manufacture of tobacco products	100.0	103.7	101.5	100.6	100.6	100.6
Manufacture of textiles	100.0	98.3	94.2	88.9	85.7	84.5
Manufacture of wearing apparel; dressing and dyeing of fur	100.0	89.8	66.9	46.4	47.3	46.9
Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness, and footwear	100.0	92.0	80.7	69.2	62.5	62.2
Manufacture of wood and of products of wood and cork (except furniture)	100.0	97.5	94.6	90.2	91.6	92.0
Manufacture of paper and paper products	100.0	97.3	94.0	90.9	89.2	92.4
Manufacture of coke, refined petroleum products, and nuclear fuel	100.0	102.8	106.3	105.6	94.7	101.9
Manufacture of chemicals and chemical products	100.0	111.6	113.4	114.9	114.8	115.2
Manufacture of rubber and plastics products	100.0	104.0	104.0	106.8	106.0	106.3
Manufacture of other nonmetallic mineral products	100.0	101.1	103.0	101.8	102.9	102.9
Manufacture of basic metals	100.0	101.1	101.2	103.2	105.6	105.4
Manufacture of fabricated metal products (except machinery and equipment)	100.0	101.9	109.4	111.5	109.9	111.4
Manufacture of machinery and equipment N.E.C.	100.0	101.8	102.8	103.5	104.7	104.0
Manufacture of electrical machinery and apparatus N.E.C	100.0	104.5	112.6	112.0	111.0	110.2
Manufacture of radio, television, and communication equipment and apparatus	100.0	101.0	96.2	96.5	94.9	91.2
Manufacture of medical, precision and optical instruments, watches, and clocks	100.0	101.2	98.6	99.7	106.5	109.2
Manufacture of motor vehicles, trailers, and semi-trailers	100.0	109.8	118.4	127.7	139.8	146.4
Manufacture of other transport equipment	100.0	103.5	107.3	112.7	123.0	126.5
Manufacture of furniture; manufacturing N.E.C.	100.0	94.0	139.5	137.6	183.9	186.5
Overall index of employment	100.0	101.7	102.1	101.4	100.8	100.9
Annual percentage change	...	1.7	0.4	-0.7	-0.9	-1.0

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.
2/ Includes the establishments with more than 100 employees and are not comparable with the previous years' data.

Table 19. Islamic Republic of Iran: Index of Wages, Salaries, and Fringe Benefits for Construction Workers in the Private Sector, 1997/98–2002/03 1/

(1997/98 = 100)

	1997/98	1998/99	1999/2000	2000/01	2001/02	Prel. 2002/03
April	93.9	106.9	121.9	134.9	147.8	164.7
May	95.4	108.6	124.2	136.9	149.9	...
June	96.9	110.0	125.8	138.0	152.0	...
July	97.8	111.3	125.8	139.1	153.6	...
August	99.1	112.2	127.3	140.5	155.0	...
September	100.2	113.5	128.6	141.8	156.7	...
October	101.5	114.5	129.9	145.0	157.9	...
November	102.2	115.1	130.5	145.6	158.8	...
December	102.4	116.0	130.9	146.0	159.4	...
January	102.9	116.1	131.3	146.6	159.9	...
February	103.7	117.2	132.2	146.3	160.4	...
March	104.1	118.1	133.4	146.6	162.2	...

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

Table 20. Islamic Republic of Iran: Population and Employment, 1997/98–2001/02 1/

	1997/98	1998/99	1999/2000	2000/01	Plan and Budget Est. 2001/02
			(In thousands)		
Population	60,994	61,842	62,817	63,862	64,907
Urban	37,755	38,681	39,718	40,791	41,863
Rural	23,239	23,161	23,099	23,071	23,044
Male	30,971	31,385	31,871	32,392	32,913
Female	30,023	30,457	30,946	31,470	31,994
0–14 years	23,287	22,668	22,037	21,472	20,907
15–54 years	32,308	33,750	35,243	36,714	38,184
55+ years	5,399	5,424	5,537	5,676	5,816
Active population	16,802	17,312	18,020	18,559	19,139
Urban	9,880	10,134	...	...	...
Rural	6,922	7,178	...	...	...
Male	14,572	15,020	...	...	...
Female	2,229	2,292	...	...	...
Employment	14,803	14,963	15,177	15,576	16,071
Urban	9,058	9,322	...	...	...
Rural	5,745	5,641	...	...	...
Male	...	...	...	...	...
Female	...	...	...	...	...
Agriculture	3,388	3,423	...	...	...
Industries	...	...	...	...	...
Mining	...	...	...	...	...
Services	...	...	...	...	...
Other	...	...	...	...	...
Unemployment	1,999	2,349	2,843	2,983	3,068
Urban	822	812	...	...	...
Rural	1,177	1,537	...	...	...
Male	...	...	...	...	...
Female	...	...	...	...	...
			(In percent)		
Population growth rate	1.6	1.4	1.6	1.7	1.6
Active population as ratio of total	27.5	28.0	28.7	29.1	29.5
Urban	16.2	16.4	...	...	...
Rural	11.3	11.6	...	...	...
Male	23.9	24.3	...	...	...
Female	3.6	3.7	...	...	...
Unemployment rate 2/	11.9	13.6	15.8	16.1	16.0

Source: Based on Iranian census data.

1/ Iranian fiscal years ending March 20.

2/ Based on Central Statistical Office (CSO) data on rural and urban unemployment.

Table 21. Islamic Republic of Iran: Education Indicators, 1995–2000 1/

	1995	1997	1998	1999	2000
			(In percent)		
Literacy rates					
Adult literacy rate (age 15+)					
Male	...	79.7	81.0	83.7	...
Female	...	65.9	...	...	...
Urban	...	81.1	...	...	...
Rural	...	58.8	...	...	...
Literacy rate (age 6–29)	92.8	93.5	95.1	96.3	97.0
Urban	96.0	96.4	97.5	98.2	98.2
Rural	87.7	88.7	84.9	85.5	91.0
			(In percent of gross)		
Enrollment rates					
Primary level	105.0	96.0 2/	...	...	...
Male	109.0	111.0 2/	...	...	...
Female	101.0	81.0 2/	...	...	...
Secondary level	66.0	...	...	...	...
Male	74.0	...	...	...	...
Female	58.0	...	...	...	...
Tertiary level	15.1	...	...	...	...
School enrolled to population 6–14 years	...	89.0	...	...	...
			(In thousands)		
Number of students					
Primary level	9,446	8,938	8,667	8,288	7,969
Male	4,997	4,720	4,561	4,349	4,176
Female	4,449	4,218	4,106	3,939	3,793
Secondary level	4,955	5,283	5,295	5,173	5,027
Male	2,730	2,881	2,890	2,829	2,749
Female	2,225	2,402	2,405	2,344	2,278
Tertiary level	3,179	3,705	3,920	4,009	4,064
Public universities and higher education	527	626	639	679	733
Male	355	387	371	380	387
Female	172	239	268	299	346
Islamic Azad University	519	659	667	726	836
Indices of educational quality	...	...	...	...	...
Students to school	177.4	173.2	167.8	159.3	145.7
Students to class	29.8	29.3	28.9	28.4	27.3
Students to teacher	24.6	21.5	20.7	19.5	19.4
			(In billions of Iranian rials)		
Education and research expenditure	7,141	13,435	15550	18,448	23,811
Education	5,446	10,382	12,121	14,437	18,602
Percent of government expenditure	10.6	9.3	14.3	13.6	...
Percent of GDP	3.0	2.7	3.8	3.4	...
Higher education and research	1,695	3,053	3,429	4,011	5,209
Percent of government expenditure	3.3	3.4	4.4	4.0	...
Percent of GDP	0.9	1.0	1.1	1.0	...

Source: Bank Markazi Jomhouri Islami Iran.

1/ Data refer to range of years with the middle year of the range displayed. If data are available for more than one year in the range, data closest to the middle year are shown.

2/ Data refer to 1996.

Table 22. Islamic Republic of Iran: Price Development, 1997/98–2001/02 1/

	Weight	1997/98	1998/99	1999/2000	2000/01	2001/02
Wholesale Price Index (WPI)	100.0	100.0	116.7	145.0	166.3	174.7
Domestic goods 2/	71.8	100.0	118.7	145.8	167.4	178.8
Imported goods	24.3	100.0	110.0	134.2	152.1	153.3
Exported goods	4.0	100.0	121.9	195.9	234.5	233.4
Consumer Price Index (CPI)	100.0	100.0	118.1	141.8	159.7	177.9
Food, beverages, and tobacco	32.5	100.0	124.5	152.7	166.3	178.5
Housing, water, fuel, and power	27.0	100.0	120.8	143.4	169.8	201.8
Clothing	9.6	100.0	105.3	112.1	121.8	127.4
Household furnishings	7.2	100.0	106.8	122.8	137.6	142.0
Transportation and communication	11.4	100.0	114.7	146.0	158.4	170.5
Health and medical care	4.6	100.0	122.2	152.0	183.5	211.6
Recreation and education	3.5	100.0	107.1	126.9	144.4	168.9
Miscellaneous goods and services	4.2	100.0	113.5	137.5	158.1	187.5
			(1990/91=100)			
GDP deflator (factor cost)		605.0	676.2	861.7	1,080.5	1,203.0
Non-oil GDP deflator		566.4	675.3	796.6	964.3	1,096.0
Oil GDP deflator		1,022.3	686.4	164.2	2,435.5	2,638.9
			(Annual percentage change)			
Wholesale Price Index (WPI)		9.9	16.7	24.2	14.7	5.1
Domestic goods 2/		...	18.7	22.8	14.8	6.8
Imported goods		...	10.0	22.0	13.3	0.8
Exported goods		...	21.9	60.7	19.7	-0.5
Consumer Price Index (CPI)		17.4	18.1	20.1	12.6	11.4
Food, beverages, and tobacco		13.9	24.5	22.7	8.9	7.3
Housing, water, fuel, and power		30.4	20.8	18.7	18.4	18.8
Clothing		13.1	5.3	6.5	8.7	4.6
Household furnishings		7.5	6.8	15.0	12.1	3.2
Transportation and communication		14.0	14.7	27.3	8.5	7.6
Health and medical care		26.7	22.2	24.4	20.8	15.3
Recreation and education		9.5	7.1	18.5	13.8	17.0
Miscellaneous goods and services		9.5	13.5	21.1	15.0	18.6
GDP deflator (factor cost)		12.6	11.8	27.4	25.4	11.3
Non-oil GDP deflator		15.6	19.2	18.0	21.0	13.7
Oil GDP deflator		2.8	-32.9	139.1	48.4	8.3

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.
2/ Domestically produced and consumed goods.

Table 23. Islamic Republic of Iran: Central Government Revenues, 1997/98–2001/02 1/

(In billions of Iranian rials)

	1997/98	1998/99	1999/2000	2000/01	Prel. 2001/02
Total revenue	70,012	62,881	103,891	189,989	176,860
Oil and gas revenue	37,493	22,530	44,487	128,205	101,522
Oil revenue	27,064	16,598	25,955	20,125	22,512
Sales of foreign exchange	10,429	5,932	18,532	61,065	64,374
Non-oil revenue	32,519	40,351	59,404	61,784	75,337
Tax revenue	17,345	18,686	38,757	33,298	38,797
Taxes on income, profits, and capital gains	11,053	12,675	16,584	19,585	22,986
Corporate taxes	6,858	7,922	10,049	11,295	12,372
Public corporations	3,197	3,827	4,944	4,899	4,468
Private corporations 2/	3,661	4,095	5,105	6,396	7,904
Taxes on wages and salaries	1,616	1,698	2,469	3,413	4,625
Taxes on professions	1,588	1,803	2,424	2,927	3,402
Taxes on other income 3/	280	396	490	494	677
Property taxes	711	856	1,152	1,455	1,911
Wealth and inheritance taxes 4/	711	856	1,152	1,455	1,911
Domestic taxes on goods and services	5,730	6,717	16,367	5,765	4,175
Excises on cigarettes 5/	58	111	105	102	73
Excises on petroleum products	83	74	76	76	85
Excises on beverages	91	91	299	327	326
Excises on automobiles	269	165	1,403	1,849	2,338
Excises on special goods	465	503	1,042	2,341	840
Excises for development					
Of which: petroleum, electricity, gas, and telecommunication	4,380	5,139	12,925	455	0
Other domestic taxes on goods and services	384	434	517	615	514
Taxes on international trade and transactions	4,289	4,432	5,806	7,948	11,635
Customs duties and commercial benefits	2,055	2,558	3,046	4,158	7,173
Order registration fees	2,163	1,846	2,532	3,480	4,195
Other	71	48	228	310	267
Nontax revenue	8,777	12,734	9,072	12,004	13,824
Income from government monopolies	218	1,500	1,418	440	621
Of which: dividends	87	167	159	247	402
Services and sales of goods	2,490	3,373	4,982	6,615	5,692
Income from government investment	55	0	0	0	1,241
Other nontax revenue	6,069	7,861	2,672	4,949	6,271
Of which: OPCP revenue	653	577	979	671	457
Earmarked revenue	6,397	8,931	11,575	16,481	22,717

Source: Bank Markazi Jomhouri Islami Iran; and Fund staff estimates.

1/ Iranian fiscal years ending March 20.
2/ Include enterprises and foundations under the supervision of ministries and government organizations.
3/ Include taxes on agricultural income, incidental income, and tax on income from rent of property.
4/ Comprised of taxes on immovable property, net wealth, estate, inheritance and gift taxes, and taxes on financial and capital transactions.
5/ From 1999/2000, includes taxes on imported cigarettes.

Table 24. Islamic Republic of Iran: Valuation of Budgetary Oil and Gas Export Receipts, 1997/98–2001/02 1/

	1997/98	1998/99	1999/2000	2000/01	Prel. 2001/02
	(In millions of U.S. dollars)				
Oil and gas exports	15,544	10,048	16,322	23,261	18,724
Crude oil export revenue	14,287	8,943	13,951	20,525	16,800
Revenue from exports of petroleum products and gas	1,257	1,105	2,371	2,736	1,925
Less: amount not accruing to the budget	677	563	1,490	11,530	5,860
Revenue from exports of petroleum products and gas	...	...	...	2,736	1,925
Repayment	...	...	...	869	1,600
Contingency budget	...	...	...	1,654	0
Other	...	...	347	233	488
OSF 2/	...	...	1,143	6,038	1,848
Oil and gas revenue	14,867	9,485	14,832	11,731	12,864
Valued at Iranian Rls 1,750 per U.S. dollar	7,880	7,024	7,157	5,500	5,564
Valued at Iranian Rls 3,000 per U.S. dollar	6,987	1,580	4,461	0	0
Valued at the TSE rate 3/	...	881	3,214	6,231	7,300
	(In billions of Iranian rials)				
Oil and gas revenue written in the budget 4/	36,447	22,620	44,488	59,449	70,349
Oil and gas exports	26,018	16,598	25,955	20,125	22,512
Crude oil export revenue	23,806	14,604	21,807	20,125	22,512
Revenue from exports of petroleum products and gas	2,212	1,994	4,148	0	0
Sales of foreign exchange	10,429	6,022	18,532	39,324	47,837
Oil and gas revenue	36,447	22,620	44,488	59,449	70,349
Valued at Iranian Rls 1,750 per U.S. dollar	13,790	12,292	12,525	9,625	9,737
Valued at Iranian Rls 3,000 per U.S. dollar	22,657	4,740	6,549	0	0
Valued at the TSE rate	...	5,588	25,414	49,824	60,612
TSE rate	...	6,346	7,907	7,996	7,922

Sources: Data provided by the Iranian authorities; and Fund staff estimates.

1/ Iranian fiscal years ending March 20.
2/ In 1999/2000, it indicated the excess revenue of that year.
3/ For 1997/98, this amount was included in the amount valued at the Iranian Rls 3,000 rate.
4/ Does not include OSF.

Table 25. Islamic Republic of Iran: Central Government Total Expenditure by Functional Classification, 1997/98–2001/02 1/

(In billions of Iranian rials)

	1997/98	1998/99	1999/2000	2000/01	Prel. 2001/02
Total expenditure and net lending	76,842	84,843	106,301	139,893	170,861
Net lending	-330	-187	-196	3,201	4,371
Total expenditure	77,172	85,030	106,497	136,692	166,491
General services	5,777	6,469	8,457	12,512	...
National defense	6,548	8,144	9,472	17,703	...
Social services	27,490	31,150	37,558	49,758	...
Education	14,159	16,344	19,656	25,529	...
Health and nutrition	3,458	3,694	4,007	5,187	...
Housing	469	346	511	636	...
Social security and welfare	5,399	6,686	8,464	10,936	...
Other	4,005	4,080	4,920	7,470	...
Economic services	13,792	13,921	20,359	13,589	...
Agriculture	1,587	1,592	2,104	2,951	...
Water resources	1,863	1,444	2,407	3,670	...
Petroleum, fuel, and power	6,214	6,803	10,470	519	...
Industry	241	276	244	426	...
Transport and communication	3,086	3,157	4,300	4,192	...
Commerce	270	242	253	465	...
Other	531	409	581	1,367	...
Foreign exchange losses 2/	7,216	5,077	1,993	0	...
Budgeted amount	1,879	0	180	0	...
Quasi-fiscal foreign exchange losses	5,337	5,077	1,813	0	...
Other expenditure 3/	10,408	11,339	17,084	26,648	...
Earmarked expenditure 4/	5,941	8,931	11,575	16,481	22,717

Source: Bank Markazi Jomhouri Islami Iran; and Fund staff estimates.

1/ Iranian fiscal years ending March 20.

2/ This applies to the services of debts contracted before March 21, 1993. For each U.S. dollar equivalent of the debt service payment on imports, this amount covers the difference between the official exchange rate (Iranian Rls 1,750 per U.S. dollar) and the amount contributed by debtor or importer (typically, Iranian Rls 70 per U.S. dollar).

3/ Includes budgetary CPPO expenditure.

4/ Counterpart of earmarked revenue.

Table 26. Islamic Republic of Iran: Economic Classification of Central Government Expenditures, 1997/98–2001/02

	1997/98	1998/99	1999/2000	Act. 2000/01	Est. 2001/02
	(In billions of Iranian rials)				
Total expenditure and net lending	76,842	84,843	106,301	139,893	170,861
Current expenditure	44,498	53,632	67,987	88,068	112,551
Wages and salaries	28,316	33,466	47,163	60,036	44,000
Goods and services	5,759	5,685	13,173	19,914	56,767
Subsidies and transfers	10,423	14,481	7,651	8,118	11,784
Subsidies and transfers to households	8,482	11,729	...	...	9,884
Current transfers to state-owned enterprises	1,941	2,752	...	...	1,900
Capital expenditure	17,392	17,655	24,942	30,115	27,359
Of which : capital transfers to state-owned enterprises	9,720	11,144	...	...	...
Other 1/	14,952	13,556	13,372	21,710	30,951
	(In percent of GDP)				
Total expenditure and net lending	27.4	26.8	24.8	24.6	25.8
Current expenditure	15.8	16.9	15.9	15.5	17.0
Wages and salaries	10.1	10.6	11.0	10.6	6.6
Goods and services	2.1	1.8	3.1	3.5	8.6
Subsidies and transfers	3.7	4.6	1.8	1.4	1.8
Subsidies and transfers to households	3.0	3.7	...	...	1.5
Current transfers to state-owned enterprises	0.7	0.9	...	...	0.3
Capital expenditure	6.2	5.6	5.8	5.3	4.1
Of which : capital transfers to state-owned enterprises	3.5	3.5	...	...	...
Other 1/	5.3	4.3	3.1	3.8	4.7
Memorandum item:					
GDP at market price (in billions of rials)	280,908	316,646	428,298	567,591	662,514

Sources: Plan and Budget Organization; Bank Markazi Jomhouri Islami Iran; and Fund staff estimates and projections.

1/ Including earmarked expenditures, foreign exchange losses, and net lending.

Table 27. Islamic Republic of Iran: Central Government Current Expenditure by Functional Classification, 1997/98–2000/01 1/

	1997/98	1998/99	1999/2000	Act. 2000/01
	(In billions of Iranian rials)			
Total current expenditure 2/	44,498	53,632	67,987	88,068
General services	4,546	5,632	7,365	10,930
National defense	6,548	7,937	9,096	17,315
Social services	21,334	25,501	30,501	39,705
Education 3/	12,146	14,492	17,235	22,353
Health and nutrition	2,895	3,198	3,480	4,593
Housing	37	53	65	96
Other 4/	6,256	7,758	9,721	12,663
Of which: social security and welfare	5,350	6,643	8,411	10,850
Economic services	2,761	3,189	3,942	2,143
Agriculture 5/	710	762	920	1,141
Water resources	21	16	55	17
Energy	1,026	1,448	1,955	4
Industry	74	117	128	175
Transport and communication	412	425	357	372
Commerce	171	176	169	304
Other 6/	347	244	359	130
Other 7/	9,309	11,373	17,083	17,975
	(In percent of GDP)			
Total current expenditure 2/	15.8	16.9	15.9	15.5
General services	1.6	1.8	1.7	1.9
National defense	2.3	2.5	2.1	3.1
Social services	7.6	8.1	7.1	7.0
Education 3/	4.3	4.6	4.0	3.9
Health and nutrition	1.0	1.0	0.8	0.8
Housing	0.0	0.0	0.0	0.0
Other 4/	2.2	2.5	2.3	2.2
Of which: social security and welfare	1.9	2.1	2.0	1.9
Economic services	1.0	1.0	0.9	0.4
Agriculture 5/	0.3	0.2	0.2	0.2
Water resources	0.0	0.0	0.0	0.0
Energy	0.4	0.5	0.5	0.0
Industry	0.0	0.0	0.0	0.0
Transport and communication	0.1	0.1	0.1	0.1
Commerce	0.1	0.1	0.0	0.1
Other 6/	0.1	0.1	0.1	0.0
Other 7/	3.3	3.6	4.0	3.2
Memorandum item:				
GDP at market prices (in billions of Iranian rials)	280,908	316,646	428,298	567,591

Sources: Ministry of Economy and Finance; Plan and Budget Organization; Bank Markazi Jomhouri Islami Iran; and Fund staff estimates.

1/ Fiscal year ending March 20.
2/ Excludes net lending and current expenditure financed by earmarked revenue.
3/ Includes expenditures on reclamation, technical & professional education and higher education and research.
4/ Includes expenditures on culture and art , physical education and youth services, rural and urban development, and environmental protection.
5/ Includes CPPO fertilizer subsidies.
6/ Includes expenditure on tourism and mining .
7/ Includes outlays for defense, domestic trade, tranfers to charities (e.g. foundations) and operations of the CPPO.

Table 28. Islamic Republic of Iran: Subsidies Paid Through the Consumer and Producer Protection Organization, 1997/98–2001/02 1/

	1997/98	1998/99	1999/2000	2000/01	2001/02
			(In billions of Iranian rials)		
Fertilizer	522	548	471	531	528
Sugar	292	85	20	434	439
Wheat	3,390	4,447	5,200	5,835	6,819
Milk and cheese	440	284	481	623	809
Rice and vegetable oil 2/	212	336	98	-274	0
Other 3/	245	187	611	771	1,416
Total	5,101	5,887	6,881	7,920	10,011
			(In percent of GDP)		
Fertilizer	0.2	0.2	0.1	0.1	0.1
Sugar	0.1	0.0	0.0	0.1	0.1
Wheat	1.2	1.4	1.2	1.0	1.0
Milk and cheese	0.2	0.1	0.1	0.1	0.1
Rice and vegetable oil 2/	0.1	0.1	0.0	0.0	0.0
Other 3/	0.1	0.1	0.1	0.1	0.2
Total	1.8	1.9	1.6	1.4	1.5

Sources: Bank Markazi Jomhouri Islami Iran; and the Consumer and Producer Protection Organization.

1/ Does not include transfers for commodities whose transactions are self-liquidating.

2/ Prior to 1994/95, this category was self-liquidating as it benefited from subsidies through the official exchange rate of Iranian Rls 70 per U.S. dollar. Since then, such goods have been imported using an exchange rate of Iranian Rls 1,750 per U.S. dollar.

3/ Includes transfers to agro-industry complexes and the Agricultural Products Insurance Fund, as well as subsidies for meat and seeds. Since 1995/96, this line has also included subsidies for pesticides.

Table 29. Islamic Republic of Iran: Quantities and Prices of Subsidized Food Items, 1997/98–2001/02 1/

(In thousands of tons and Iranian rials per kilogram)

	Subsidized Quantity					Price				
	1997/98	1998/99	1999/2000	2000/01	2001/02	1997/98	1998/99	1999/2000	2000/01	2001/02
Wheat	8,200	8,400	9,300	10,300	10,500	116	128	152	166	166
Rice	275	286	301	315	659	400	500	500	500	520
Sugar	570	588	356	365	788	150	170	170	170	220-1,650
Edible oil	150	155	170	172	175	500	600	600	600	845-3,960
Red meat	52	27	22	16	15	1,500	2,000	770	770	770
Cheese 2/	22	0	35	26	26	1,500	5,000	5,000	5,000	5500
Total	9,269	9,456	10,184	11,194	12,684	...	...	...	...	...

Sources: Consumer and Producer Protection Organization.

1/ Iranian years ending March 20.
2/ Cheese was dropped from the list of subsidized food items in 1998/99.

Table 30. Islamic Republic of Iran: Budgetary Operations of Selected Public Enterprises, 1997/98–2002/03 1/ 2/

(In billions of Iranian rials)

	1997/98	1998/99	1999/2000 3/	2000/01 3/	2001/02 3/	Budget 2002/03 3/
Operating balance	520	1,095	1,047	7,498	8,376	5,590
Revenue	16,174	21,374	19,077	34,344	42,325	63,902
Current expenditure	15,654	20,279	18,030	26,846	33,949	58,312
Current transfers from the government	18	23	17	33	60	85
Current balance	538	1,118	1,064	7,531	8,436	5,675
Capital expenditure	8,304	10,372	11,295	15,082	22,335	58,922
Overall balance	-7,766	-9,254	-10,230	-7,551	-13,899	-53,247
Total financing	7,766	9,254	10,230	7,551	13,899	53,247
Domestic financing	7,967	8,878	6,938	4,935	7,523	33,795
Capital transfer	3,381	3,977	3,866	314	381	448
Banking system	406	467	285	476	986	-543
Other sources	4,180	4,433	2,788	4,145	6,156	33,890
Foreign financing	-200	376	3,293	2,616	6,377	19,452

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian years ending March 20.

2/ Includes the Armed Forces Medical Services Organization; Central Organization for Rural cooperatives, Iran Khodro Company; Iran Steel National Industrial Group; Iran Telecommunications Company, Iranian Fisheries Company; Isfahan Steel Mill Company; National Iranian Oil Company; National Iranian Refining and Distribution Company; Provision Production and Distribution of Fodder Crops Company.

3/ Provision Production and Distribution of Fodder Crops Company is not included in the list of public enterprises.

Table 31. Islamic Republic of Iran: Budgetary Transfers to Cover Financial Losses of Public Enterprises, 1997/98–2002/03 1/

(In billions of Iranian rials)

Budget line		Act.					Budget
		1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03
200100	Central Organization for Rural Cooperatives	22.4	23.5	20.2	45.9	59.7	85.0
207200	Organization for Procurement and Distribution of Seeds	0.0	0.0	0.0	0.0	0.0	0.0
210000-9900	Regional Water Authorities	28.4	22.0	64.2	23.9	29.0	33.2
261000	National Wheat Board	40.1	44.4	45.7	57.2	94.2	0.0
280500	Iranian National Railroad Company	0.0	0.0	0.0	0.0	0.0	0.0
281000	National Airline of IRAN	0.0	0.0	0.0	0.0	0.0	0.0
282500	News Agency of the IRAN	22.3	26.5	29.3	37.2	50.5	63.5
283100	Iranian Postal Company	0.0	0.0	0.0	0.0	0.0	0.0
283500	Iranian Radio and Television	329.8	416.5	496.5	665.5	764.3	1,382.2
284000	Organization for Promotion of Children's Education	22.4	24.5	29.2	40.9	56.6	79.0
266500	CPPO	3.0	2.9	4.1	6.1	12.9	14.3
	Total	468.4	560.3	689.2	876.7	1,067.2	1,657.2

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian years ending March 20.

Table 32. Islamic Republic of Iran: Summary Accounts of Bank Markazi Jomhouri Islami Iran, 1997/98–2001/02 1/

(In billions of Iranian rials; unless otherwise indicated)

	1997/98	1998/99	1999/2000	2000/01	2001/02
Net foreign assets	7,333	4,039	7,868	19,686	26,527
Foreign assets	11,373	8,358	12,095	22,631	30,837
Foreign liabilities	-4,040	-4,319	-4,227	-2,946	-4,310
Net domestic credit	59,194	66,367	72,973	59,011	47,037
Central government	31,597	38,654	38,354	21,199	16,943
Claims	43,425	54,903	58,368	57,169	26,527
Deposits	-11,828	-16,250	-20,014	-35,970	-44,085
Claims on banks	14,930	13,400	20,811	23,553	12,077
Claims on NFPEs	12,667	14,314	13,808	14,259	18,018
Other items, net, excluding CPPs	-10,612	-3,882	-3,363	16,039	39,602
Other assets	10,044	14,665	12,470	31,345	55,847
Other liabilities	-12,900	-13,673	-11,259	-11,015	-12,005
Capital	996	1,096	1,085	1,224	1,216
Base money	56,236	66,525	77,478	94,736	103,569
Cash outside banks	15,380	18,773	22,119	25,158	29,189
Cash in vaults	1,413	1,398	1,794	2,073	2,347
Required reserves	34,461	37,835	45,377	51,830	52,295
Excess reserves	1,260	3,959	2,532	5,337	14,807
Deposits of NFPE and municipalities 2/	3,722	4,560	5,656	10,338	4,932
CPPS	...	...	...	...	9,600

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

2/ Includes deposits of municipalities. Excludes foreign exchange deposits of NFPEs.

Table 33: Islamic Republic of Iran: Summary Accounts of the Banking Institutions 1997/98–2001/02 1/ 2/

(In billions of Iranian rials)

	1997/98	1998/99	1999/2000	2000/01	2001/02
Net foreign assets	2,253	-3,101	-1,120	-2,067	-1,666
Foreign assets 3/	4,148	2,424	5,290	9,266	12,588
Foreign liabilities 4/	-1,895	-5,525	-6,410	-11,333	-14,254
Net domestic assets	116,654	144,729	171,690	226,019	293,434
Net claims on government	1,403	5,245	3,385	3,438	3,716
Claims on government	1,824	7,742	7,151	6,195	7,553
Government deposits	-421	-2,498	-3,766	-2,756	-3,837
Claims on NFPE	19,835	29,326	34,099	41,472	48,546
Claims on private sector 5/	75,740	98,220	137,913	180,871	242,543
Net claims on BMJII	22,204	29,792	28,892	35,686	49,255
Liabilities of BMJII	-14,930	-13,400	-20,811	-23,553	-15,703
Deposits with BMJII	35,721	41,794	47,909	57,167	62,612
Notes and coins in till	1,413	1,398	1,794	2,073	2,346
Other items, net	-2,528	-17,853	-32,599	-35,449	-50,626
Liabilities to the private sector	118,907	141,628	170,570	223,952	291,769
Demand deposits	47,924	56,011	64,632	89,262	113,768
Time and savings deposits	70,983	85,617	105,938	134,690	178,001

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

2/ The banking institutions comprise the commercial and specialized banks, as well as nonbank financial institutions.

3/ Includes foreign exchange deposits with the central bank.

4/ Foreign liabilities of commercial include foreign currency deposits of residents in this table, while Table 5 reports foreign currency deposits of residents for 2000/01 and 2001/02 under broad money.

5/ Include investments, equity participation in companies, and claim for foreign exchange losses.

Table 34. Islamic Republic of Iran: Reserve Requirements on Bank Deposits, 1997/98–2001/02 1/ 2/

(In percent of total deposits)

	1997/98	1998/99	1999/2000	2000/01	2001/02
Commercial banks					
Demand deposits	30	30	30	30	20
Qarz ul-Hasanah savings deposits 3/	25	25	25	20	20
Short-term investment deposits	25	25	25	25	20
One-year investment deposits	25	25	25	25	20
Two-year investment deposits	15	15	15	15	10
Three-year investment deposits	15	15	15	15	10
Four-year investment deposits	...	...	...	10	10
Five-year investment deposits	10	10	10	10	10
Prepayments for letters of credit	30	30	30	30	30
Specialized banks					
Demand deposits	10	10	10	10	10
Qarz ul-Hasanah savings deposits 3/	10	10	10	10	10
Short-term investment deposits	10	10	10	10	10
One-year and other long-term investment deposits	10	10	10	10	10
Prepayments for letters of credit	10	10	10	10	10

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.
2/ From 2001/02, reserve requirements on all bank deposits in free trade zones are 10 percent.
3/ Noninterest bearing savings deposits.

Table 35. Islamic Republic of Iran: Rates of Return on Deposits, 1997/98–2001/02 1/

(In percent per annum)

	1997/98	1998/99	1999/2000	2000/01	2001/02 3/
Short-term	8.0	8.0	8.0	8.0	7.0
Long-term					
1-year	14.0	14.0	14.0	14.0	13.0
2-year 2/	15.0	15.0	15.0	15.0	13–17 4/
3-year 2/	16.0	16.0	16.0	16.0	13–17 4/
4-year 2/	...	...	...	17.0	13–17
5-year 2/	18.5	18.5	18.5	18.5	17.0

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.
2/ Long-term deposits over 1-year introduced in 1990/91 and 2000/01.
3/ These rates are effective from 22 ordibehesht 2001/02 (May 12, 2001).
4/ Banks are allowed to determine the rate between this range by themselves.

Table 36. Islamic Republic of Iran: Approved Sectoral Allocation of Credit to the Nonpublic Sector, 1997/98–2001/02 1/

(In percent of change in total credit)

	1997/98	1998/99	1999/2000	2000/01	2001/02
Agriculture	25.0	25.0	25.0	25.0	25.0
Industry and mining	33.5	33.5	33.5	33.5	33.5
Housing and construction	29.0	29.0	29.0	29.0	29.0
Trade, services, and others	12.5	12.5	12.5	12.5	12.5
Of which: export finance	7.5	8.0	8.0	8.0	8.0

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

Table 37. Islamic Republic of Iran: Rates of Charges on Bank Facilities, 1997/98–2001/02 1/ 2/

(In percent per annum)

	1997/98	1998/99	1999/2000	2000/01	2001/02	3/
Agriculture	13–16	13–16	13–16	13–16	14–15	
Industry and mining	17–19	17–19	17–19	17–19	16–18	
Housing	15–16	15–16 18–19	15–16 18–19	15–16 18–19	15–16 17–19	4/
Trade and services	22–25	22–25	22–25	22–25	23	5/
Export	18	18	18	18	18	

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.
2/ These are announced rates representing the minimum payable return. As such, they may be lower than the actual ex-post rates of return.
3/ These rates are effective from 22 ordibehesht 2001/02 (May 12, 2001).
4/ Only for bank Maskan (housing bank).
5/ This is the minimum rate.

Table 38. Republic of Iran: Rates of Charges on Banks Overdraft, 2001/02 1/

(In percent per annum)

	20 percent	24 percent	30 percent
	(In billions of Iranian rials)		
Commercial Banks			
Bank Melli Iran (National Bank)	Up to 160	160–240	Over 240
Bank Saderat (Export Bank)	Up to 140	140–210	Over 210
Bank Mellat (People's Bank)	Up to 80	80–120	Over 120
Bank Sepah (Army's Bank)	Up to 80	80–120	Over 120
Bank Tejarat (Mercantile Bank)	Up to 80	80–120	Over 120
Bank Refah Karegaran (Workers' Welfare Bank)	Up to 15	15–20	Over 20
Specialized Banks			
Bank Maskan (Housing Bank)	Up to 15	15–25	Over 25
Bank Keshavarzi (Agricultural Bank)	Up to 10	10–15	Over 15
Bank Sanat-va-Madan (Industrial and Mining Bank)	Up to 5	5–10	Over 10
Bank Tosea-e-Saderat Iran (Export Promotion Bank)	Up to 4	Over 4	

Source: Bank Markazi Jomhouri Islami Iran.

1/ Rates have not changed since 1992.

Table 39. Islamic Republic of Iran: Structure of the Banking System, 1997/98–2000/01 1/

(Number of branches)

	1997/98	1998/99	1999/2000	2000/01
Deposit money banks and other banking institutions 2/				
Commercial Banks	11,996	12,126	12,480	13,204
Bank Mellat (People's Bank)	2,101	1,893	1,910	1,955
Bank Melli Iran (National Bank)	3,009	3,150	3,186	3,208
Bank Tejarat (Mercantile Bank)	1,601	1,709	1,871	2,140
Bank Saderat (Export Bank)	3,428	3,407	3,291	3,285
Bank Refah Karegaran (Workers' Welfare Bank)	478	506	705	996
Bank Sepah (Army's Bank)	1,379	1,461	1,517	1,620
Specialized Banks	2,198	2,392	2,369	2,472
Bank Keshavarzi (Agricultural Bank)	1,590	1,743	1,684	1,735
Bank Maskan (Housing Bank)	577	618	650	698
Bank Sanat-va-Madan (Industrial and Mining Bank)	14	13	13	15
Bank Tosea-e-Saderat Iran (Export Promotion Bank)	17	18	22	24
Memorandum items:				
Number of foreign branches	58	61	56	56
Commercial banks	58	61	56	56
Specialized banks	0	0	0	0

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.
2/ Includes all the domestic and foreign branches of Iranian banks .

Table 40. Islamic Republic of Iran: Participation Papers, 2002 (Continued)

(As of March 2002)

Name of Partnership Papers 1/	Issuer(s)	Amount Approved (In billions of Iranian Rls)	Amount Transacted (In billions of Iranian Rls)	Times of Issue	Agent	Date of First Issue	Term Maturity (Years)	Profit rate (Prov.) (Percent p.a.)
1. Navab Project (Tehran)	Tehran Municipality	250	250	4	Bank Melli Iran	Sep. 1994	4	20
2. Renovation of Hazrat Abdolazim Shrine	Tehran Municipality and Superintendence of Hazrat Abdolazim Foundation	70	70	1	Bank Melli Iran	Nov. 1995	2.5	20
3. Hospital Projects	Ministry of Housing and Urban Development	30	30	1	Bank Mellat	Jan. 1996	5	20
4. Hazrat Imam Reza residential construction	Maskan Sazan Khorasan Corporation	80	80	3	Bank Saderat	Aug. 1996	5	20
5. Iran Khurdro Auto plant	Iran Khodro	513	513	2	Bank Melli Iran	Dec. 1996	3.5 , 4	20, 24
6. New cities	New Cities Development Corporation	110	35	1	Bank Maskan	May 1997	3	20
7. Gharb Bazar Tabriz	Azerbaijan Development Corporation	100	50	2	Bank Melli Iran	Dec. 1997	4	20
8. National Participation	Government	2,250	2,174	1	Bank Melli Iran	Feb. 1998	3	20
9. Water Investment	Ministry of Energy	300	300	1	Bank Tejarat	Oct. 1998	3	20
10. Petrochemical	Khark Petrochemical Company	200	200	1	Bank Melli Iran	Nov. 1998	2.5	20
11. Tabriz Zakaria Pharmaceutics	Tabriz Pharmacy Co.	50	30	1	Bank Melli Iran	Dec. 1998	2.5	20
12. National Participation	Government	2,500	2,500	1	Bank Melli Iran	Dec. 1998	3	20
13. Yazd Maibod Steel	Yazd Maibod Steel Co.	100	70	1	Bank Melli Iran	Feb. 1999	4	20
14. Acrylic Production	Iran Polyacryle Co.	130	130	2	Bank Melli Iran	May 1999	4	20
15. National Participation	Government	2,000	1,927	3	Melli, Mellat, Sepah, Saderat, Tejarat, and Refah	Aug.1999	4	19

Table 40. Islamic Republic of Iran: Participation Papers, 2002 (Concluded)

(As of March 2002)

Name of Partnership Papers 1/	Issuer(s)	Amount Approved (In billions of Iranian Rls)	Amount Transacted (In billions of Iranian Rls)	Times of Issue	Agent	Date of First Issue	Term Maturity (Years)	Profit rate (Prov.) (Percent p.a.)
16. Karkheh Dam	Ministry of Energy	150	150	1	Bank Sepah	Nov.1999	4	19
17. Fisheries	Ministry of Jahad & Agriculture	100	100	1	Bank Keshavarzi	Jan.2000	3	19
18. Niroo Investment	Ministry of Energy	150	150	1	Bank Tejarat	Feb.2000	3	19
19. National Participation	Government	2,000	2,000	3	Commercial and specialized banks	Aug.2000	4	19
20. Niroo Investment	Ministry of Energy	300	300	1	Bank Tejarat & Bank Keshavarzi	Nov.2000	3	19
21. Monetary Policy	Central Bank	8,000	2,916	1	Commercial and specialized banks	Mar. 2001	0.5	19
22. Electricity Investment	Ministry of Energy	1,500	1,500	1	Bank Saderat	July 2001	4	17
23. Monetary Policy	Central Bank	6,000	6,000	2	Commercial and specialized banks	Aug. 2001	1	17
24. Railroad	Ministry of Transportation	400	400	1	Bank Saderat	Oct.2001	4	17
25. Water Investment	Ministry of Energy	500	500	1	Bank Tejarat & Bank Keshavarzi	Oct.2001	3	17
26. Peugeot 206	Iran Khodro	1,000	1,000	1	Bank Melli Iran	Nov 2001	4	17
27. National Participation	Government	2,000	2,000	1	Commercial and specialized banks	Nov.2001	5	17
28. Monetary Policy	Central Bank	2,000	1,959	1	Commercial and specialized banks	Jan. 2002	1	17
29. Cane-Sugar	Ministry of Jahad & Agriculture	400	400	1	Bank Saderat	Feb. 2002	5	17
30. Reconstruction of urban areas	Ministry of Housing and Urban Development	100	98	1	Bank Maskan	Feb. 2002	5	17
31. Monetary Policy	Central Bank	2,000	1,484	1	Commercial and specialized banks	Feb. 2002	1	17
32. Fisheries Development	Ministry of Jahad	200	187	1	Bank Keshavarzi	Mar. 2002	5	17

Source: Bank Markazi Jomhouri Islami Iran.

1/ All partnership papers are "bearer papers."

Table 41. Islamic Republic of Iran: Value of Non-Oil Exports, 1997/98–2001/02 1/

(In millions of U.S. dollars)

	1997/98	1998/99	1999/2000	2000/01	Prel. 2001/02
Agricultural and traditional goods	1,251	1,412	1,478	1,466	1,371
Carpets	636	570	691	620	522
Cotton	17	6	3	5	2
Fresh and dry fruits	338	592	517	504	488
All kinds of skins and leathers	101	54	56	79	56
Caviar	29	38	26	39	39
Casings	36	34	33	30	34
Gum tragacanth	1	2	2	2	3
Cumin	7	22	11	9	5
Others	86	94	139	178	224
Metal ores	45	13	36	38	150
Industrial goods	1,580	1,588	1,848	2,259	2,397
Detergents and soaps	29	28	29	39	35
Nonorganic chemical products	102	140	83	110	622
Shoes	62	47	43	65	41
Copper ingots, sheets, and wires	41	28	85	85	140
Ready-made clothes, knitwear, and all kinds of fabrics	41	18	41	85	120
Cement, stones, tiles, and construction materials	23	37	59	95	86
Transportation vehicles	7	12	34	39	115
Home appliances and sanitary ware	48	6	0	0	0
Cast iron, iron, and steel	184	139	219	301	195
Hydrocarbons (gas)	152	183	151	194	431
Others	891	950	1,104	1,246	612
Nonclassified goods	34	172	579	418	459
Total	2,910	3,185	3,941	4,181	4,377

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

Table 42. Islamic Republic of Iran: Distribution of Exports by Country, 1997/98–1999/2001 1/

	1997/98	1998/99	1999/2000
	(In millions of U.S. dollars)		
Japan	2,787	2,060	3,479
United Kingdom	3,037	2,204	3,238
United States	5	4	5
Germany	428	434	472
Switzerland	72	57	50
Turkey	546	497	723
South Korea	1,280	648	1,349
Greece	989	651	810
Singapore	695	514	858
Belgium	236	177	115
France	684	445	576
Italy	1,631	1,122	1,500
India	531	365	718
United Arab Emirates	775	885	1,584
China	543	350	771
Poland	0	5	4
Other	4,142	2,700	4,778
Total	18,381	13,118	21,030
	(In percent of exports)		
Japan	15.2	15.7	16.5
United Kingdom	16.5	16.8	15.4
Germany	2.3	3.3	2.2
Switzerland	0.4	0.4	0.2
Turkey	3.0	3.8	3.4
South Korea	7.0	4.9	6.4
Greece	5.4	5.0	3.9
Singapore	3.8	3.9	4.1
Belgium	1.3	1.3	0.5
France	3.7	3.4	2.7
Italy	8.9	8.6	7.1
India	2.9	2.8	3.4
United Arab Emirates	4.2	6.7	7.5
China	3.0	2.7	3.7
Other	22.5	20.6	22.7
Total	100.0	100.0	100.0

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

Table 43. Islamic Republic of Iran: Composition of Non-Oil Exports, 1997/98–2000/01 1/

(In millions of U.S. dollars)

	1997/98	1998/99	1999/2000	2000/01
Raw materials and intermediate goods	1,195	1,211	1,396	1,623
Industrial and mineral products	1,081	958	1,065	1,411
Textiles	23	8	12	30
Chemicals	452	477	414	632
Skin and leather	88	45	47	32
Metal smelting	129	86	182	225
Food	72	58	74	75
Others	317	284	337	417
Construction	73	82	154	166
Agriculture	4	45	10	4
Services	37	126	168	42
Capital goods	57	69	91	139
Consumer goods	1,625	1,733	1,874	2,001
Other	33	172	580	418
Total	2,910	3,185	3,941	4,181

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

Table 44. Islamic Republic of Iran: Country Distribution of Non-Oil Exports, 1997/98–2000/01 1/

(In millions of U.S. dollars)

	1997/98	1998/99	1999/2000	2000/01
United Arab Emirates	286	516	599	444
Germany	392	410	424	354
Azerbaijan	194	120	119	249
Italy	276	202	180	191
China	62	92	77	170
Turkey	90	158	184	166
India	95	145	129	153
Japan	104	43	57	127
USA	5	4	5	99
Ukraine	84	17	22	99
Saudi Arabia	38	41	55	88
Turkmenistan	146	102	122	87
Uzbekistan	104	54	50	81
Kuwait	30	36	54	74
South Korea	95	46	61	74
Russia	46	36	62	69
Pakistan	30	36	50	65
Thailand	29	13	52	53
Spain	23	51	56	53
Taiwan	67	59	97	52
Armenia	40	37	37	50
Hong Kong	8	39	21	49
France	40	62	46	45
Belgium	15	22	16	45
Singapore	10	76	29	43
Other	602	768	1,337	1,201
Total	2,910	3,185	3,941	4,181

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian years ending March 20.

Table 45. Islamic Republic of Iran: Composition of C.I.F. Imports, 1997/98–2000/01 1/

(In millions of U.S. dollars)

	1997/98	1998/99	1999/2000	2000/01
Raw materials and intermediate goods	7,524	6,310	6,225	7,401
Industrial and mineral products	6,542	5,372	5,464	6,421
Construction	464	571	402	438
Services	332	229	183	329
Agriculture and animal husbandry	186	138	176	214
Capital goods	4,661	6,002	4,510	4,834
Industries and mines	2,678	3,809	3,223	3,594
Services	1,109	961	546	1,122
Agriculture	129	148	93	118
Consumer goods	2,007	2,011	1,948	2,112
Nonclassified goods	4	0	0	0
Total 2/	14,196	14,323	12,683	14,347

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

2/ Customs clearance data (c.i.f. base) including registration fee, but not including defense-related imports and refined-oil products which are included in f.o.b. import data in the balance of payments table. Registration fee is included in trade statistics because customs are levied on a registration-fee-inclusive base.

Table 46. Islamic Republic of Iran: Country Distribution of Imports, 1997/98–2001/02 1/

(In millions of U.S. dollar)

	1997/98	1998/99	1999/2000	2000/01
Germany	1,854	1,660	1,382	1,504
United Arab Emirates	562	759	769	1,154
Russia	704	549	532	920
Italy	795	1,188	901	856
South Korea	552	687	708	737
Japan	882	1,005	590	684
France	675	556	685	617
China	395	655	613	565
Brazil	294	472	681	538
United Kingdom	681	574	439	510
Canada	616	311	531	477
Belgium	457	899	597	426
Australia	522	358	298	403
Kazakhstan	100	87	132	345
Spain	263	410	341	343
Switzerland	531	326	336	327
Sweden	189	148	120	310
Argentina	833	632	131	304
Austria	265	267	304	277
Netherlands	296	362	213	270
India	230	204	199	254
Turkey	289	272	228	233
Thailand	173	162	214	228
Indonesia	106	139	111	156
Singapore	58	106	100	155
Others	1,874	1,535	1,528	1,754
Total 2/	14,196	14,323	12,683	14,347

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian years ending March 20.

2/ Customs clearance data (c.i.f. base) including registration fee, but not including defense-related imports and refined-oil products which are included in f.o.b. import data in the balance of payments table. Registration fee is included in trade statistics because customs duties are levied on a registration-fee-inclusive basis.

Table 47. Islamic Republic of Iran: Value of Imports According to the International Classification of Goods, 1997/98–2000/01 1/

(In millions of U.S. dollars)

	1997/98	1998/99	1999/2000	2000/01
Food and live animals	2,508	1,583	1,953	1,977
Dairy and eggs	35	77	37	62
Grains and derivatives	1,705	878	1,319	1,390
Sugar, its derivatives and honey	405	230	281	213
Coffee, tea, cocoa, spices, etc.	38	37	62	74
Fruits and vegetables	4	3	6	14
Others	321	358	248	226
Beverages and tobacco	8	9	6	17
Raw nonedible products (excluding petroleum fuels)	647	596	648	707
Raw caoutchouc	72	52	58	63
Textile fibers unlisted elsewhere	200	201	219	195
Others	375	343	371	449
Mineral products, fuel, oil products, and their derivatives	265	186	215	330
Vegetable and animal shortening	434	654	516	417
Vegetable shortening	420	633	499	408
Others	14	21	17	9
Chemical products	1,890	1,774	1,894	2,027
Chemicals and their compounds	494	458	470	460
Raw materials for paints, dyes, and tanning	169	135	129	125
Plastic, cellulose, and artificial resins	403	413	391	428
Other unlisted chemicals	267	316	361	408
Others	557	452	543	606
Goods classified according to their composition	2,720	2,520	2,213	3,185
Paper, cardboard, and derivatives	392	266	292	422
Various textile yarns and related products	324	310	266	303
Nonmetal mineral goods	163	166	139	124
Iron and steel	1,290	1,287	1,173	1,819
Others	551	491	343	517
Transportation vehicles, machinery, and tools	5,045	6,348	4,785	5,172
Nonelectric machinery	2,672	3,501	3,021	2,976
Electric machinery, tools, and appliances	1,444	1,521	961	1,085
Transportation vehicles	929	1,326	803	1,111
Miscellaneous finished products	384	538	305	447
Scientific and professional tools	271	380	237	288
Artificial goods unlisted elsewhere	108	155	67	154
Others	5	3	1	5
Other	295	115	148	67
Total 2/	14,196	14,323	12,683	14,347

Source: Bank Markazi Jomhouri Islami Iran.

1/ Iranian fiscal years ending March 20.

2/ Customs clearance data (c.i.f. base) including registration fee, but not including defense-related imports and refined-oil products which are included in f.o.b. import data in the balance of payments table. Registration fee is included in trade statistics because customs are levied on a registration-fee-inclusive base.

Table 48. Islamic Republic of Iran: Summary External Debt and Debt Service, 1999/2000–2001/02 1/

(In millions of U.S. dollars)

	1999/2000	2000/01	Prel. 2001/02
Total external debt	10,815	7,952	7,214
Medium- and long-term debt 2/	6,811	4,274	4,562
Bilateral debt	3,058	2,585	2,753
Official financing 3/	774	784	749
Rescheduled debt	1,253	387	60
Of which: 1998 rephased debt	1,032	355	44
Borrowing by MoF (collateral by securities)	0	0	0
Oil prefinancing	1,726	518	1,000
Short-term debt 2/	4,004	3,678	2,652
LC-related borrowing 4/	4,004	3,678	2,652
Arrears	0	0	0
Oil prefinancing	0	0	0
Total external debt services	-10,248	-7,752	-5,665
Medium- and long term debt	-5,299	-3,706	-1,983
Short-term debt	-4,949	-4,046	-3,682
Total amortization	-9,865	-7,386	-5,426
Medium- and long-term debt	-4,916	-3,340	-1,744
Short-term debt	-4,949	-4,046	-3,682
Interest			
Total interest payments 5/	-383	-366	-239
Medium- and long-term debt	-383	-366	-239
Short-term	...	...	...
Memorandum items:			
Debt service ratio (excluding short-term debt)	23.8	12.5	7.8
Debt outstanding/GDP (including arrears)	10.5	8.4	6.3

Sources: Data provided by the Iranian authorities; and Fund staff estimates.

1/ Iranian fiscal years ending March 20.
2/ Reflect authorities data (actuals) and projections of disbursements and amortization.
3/ Includes World Bank loans and Eurobonds.
4/ Some letters of credit (LC) may have maturities in excess of one year.
5/ Includes interest on projected new borrowing for 2000/01–2001/02.

Table 49. Islamic Republic of Iran: Exchange Rate Developments, 1997/98–2001/02 (Continued) 1/

(In Iranian rials per U.S. dollar)

	Banking System		Authorized Dealers Market (Nonbank)	Parallel Market Rate	Teheran Stock Exchange
	Floating 2/	Export 3/			
1997/98					
Mar/Apr	1,750	3,015	...	...	...
Apr/May	1,750	3,015	...	...	...
May/Jun	1,750	3,015	...	...	...
Jun/Jul	1,750	3,015	...	...	...
Jul/Aug	1,750	3,015	...	...	4,637
Aug/Sep	1,750	3,015	...	...	4,641
Sep/Oct	1,750	3,015	...	...	4,644
Oct/Nov	1,750	3,015	...	...	4,643
Nov/Dec	1,750	3,015	...	...	4,644
Dec/Jan	1,750	3,015	...	...	4,646
Jan/Feb	1,750	3,015	...	...	4,659
Feb/Mar	1,750	3,015	...	...	4,717
Average	1,750	3,015	...	...	4,656
1998/99					
Mar/Apr	1,750	3,015	...	5,418	4,799
Apr/May	1,750	3,015	...	5,611	4,824
May/Jun	1,750	3,015	...	5,632	4,841
Jun/Jul	1,750	3,015	...	5,610	4,895
Jul/Aug	1,750	3,015	...	5,683	4,968
Aug/Sep	1,750	3,015	...	6,159	5,185
Sep/Oct	1,750	3,015	...	6,267	5,721
Oct/Nov	1,750	3,015	...	6,849	5,707
Nov/Dec	1,750	3,015	...	7,057	5,721
Dec/Jan	1,750	3,015	...	7,140	5,735
Jan/Feb	1,750	3,015	...	7,998	5,878
Feb/Mar	1,750	3,015	...	8,232	6,487
Average	1,750	3,015	...	6,468	5,404
1999/2000					
Mar/Apr	1,750	3,015		8,059	6,822
Apr/May	1,750	3,015		8,130	7,030
May/Jun	1,750	3,015		8,703	7,920
Jun/Jul	1,750	3,015		9,144	8,030
Jul/Aug	1,750	3,015		9,099	7,999
Aug/Sep	1,750	3,015		8,903	8,032
Sep/Oct	1,750	3,015		8,703	8,095
Oct/Nov	1,750	3,015		8,656	8,114
Nov/Dec	1,750	3,015		8,708	8,135
Dec/Jan	1,750	3,015		8,650	8,155
Jan/Feb	1,750	3,015		8,410	8,161
Feb/Mar	1,750	3,015		8,210	8,164
Average	1,750	3,015		8,634	7,908

Table 49. Islamic Republic of Iran: Exchange Rate Developments, 1997/98–2001/02 (Concluded) 1/

(In Iranian rials per U.S. dollar)

	Banking System		Authorized Dealers Market (Nonbank)	Parallel Market Rate 4/	Teheran Stock Exchange
	Floating 2/	Export 3/			
2000/01					
Mar/Apr	1,750	...		8,356	8,156
Apr/May	1,750	...		8,512	8,185
May/Jun	1,750	...		8,375	8,198
Jun/Jul	1,750	...		8,276	8,182
Jul/Aug	1,750	...		8,203	8,154
Aug/Sep	1,750	...		8,214	8,160
Sep/Oct	1,750	...		8,207	8,165
Oct/Nov	1,750	...		8,116	8,048
Nov/Dec	1,750	...		7,987	7,909
Dec/Jan	1,750	...		7,998	7,916
Jan/Feb	1,750	...		8,003	7,917
Feb/Mar	1,750	...		8,004	7,917
Average	1,750			8,188	8,075
2001/02					
Mar/Apr	1,750	...		8,028	7,918
Apr/May	1,750	...		8,018	7,918
May/Jun	1,750	...		7,996	7,918
Jun/Jul	1,750	...		7,994	7,918
Jul/Aug	1,750	...		7,994	7,920
Aug/Sep	1,750	...		8,014	7,922
Sep/Oct	1,750	...		8,036	7,924
Oct/Nov	1,750	...		8,017	7,924
Nov/Dec	1,750	...		7,999	7,924
Dec/Jan	1,750	...		7,999	7,924
Jan/Feb	1,750	...		8,014	7,924
Feb/Mar	1,750	...		7,996	7,924
Average	1,750			8,008	7,922

Sources: Bank of Markazi Jomhouri Islami Iran; and Fund staff estimates.

1/ Iranian fiscal years ending March 20.
2/ This rate was introduced in April 1994.
3/ This rate was eliminated in March 2000.
4/ This rate reflects an amalgamation of the "agreed rate", local curbs market rate and the Dubai off-shore rate.