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How to Deal with Azerbaijan's Oil Boom? Policy Strategies in a Resource-Rich Transition Economy

Prepared by Christoph B. Rosenberg and Tapio O. Saavalainen[1]

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Abstract

The petroleum-rich former Soviet republics around the Caspian Sea face the dual challenge of managing the transition to a market economy and a booming resource sector. This paper examines this challenge with particular reference to Azerbaijan. The standard "Dutch disease" model is modified to capture the special conditions of transition economies, with specific attention to the pattern of real exchange rate movement. "Transition factors" are found to add to the speed of real appreciation. Non-oil sectors may suffer, but less through the real appreciation than through transition-specific structural problems. The paper describes a medium-term policy strategy for Azerbaijan, relating its prospects to the experience in the 1970s of Ecuador, Indonesia, and Nigeria. The adverse effects of the Dutch disease may be avoided if Azerbaijan pursues policies to promote savings and open trade, and strengthens the supply side through structural policies.

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SUMMARY

Four newly independent states around the Caspian Sea and in Central Asia have emerged from the former Soviet Union with substantial endowments of oil and gas. Their natural wealth, while an advantage in itself, makes these countries potentially vulnerable to what is often dubbed the "Dutch disease"—the potentially negative effects of an inadequately managed natural resource boom. This paper identifies the economic risks associated with the use of large natural resources in a transition economy and proposes a policy strategy to deal with them. The discussion focuses mainly on Azerbaijan, a country that has already embarked on a path to market reforms and at the same time has made substantial strides toward exploiting its natural resources.

The first part of the paper identifies three areas in which the standard Dutch disease theories could apply to the case of a resource-rich transition economy such as Azerbaijan: short-term macroeconomic adjustment problems related mainly to large, petroleum-related foreign exchange inflows; unbalanced growth, that is, the "crowding out" of the non-oil traded goods sector; and the "waste" of petroleum wealth through unproductive public expenditures.

The paper then examines how the textbook analysis could be expanded to capture the characteristics of transition economies. We identify three areas. First, the currency is generally undervalued in transition countries, which may permit a real appreciation for some time without endangering the competitiveness of the non–oil traded goods sector. We propose a stylized path for both actual and equilibrium exchange rates in such a situation and offer some supporting empirical evidence. Second, strong capital inflows can be expected in successfully transforming economies, even without a resource boom. Third, underdeveloped financial systems are likely to result in a shortage of capital for the non–oil traded goods sectors. More generally, the absence of market mechanisms and institutions threatens the traditional export sectors even in the absence of an oil boom. The first two "transition factors" are likely to add to the speed of actual real appreciation of the currency. And while non-oil traded goods sectors may suffer, this may be primarily due more to structural and institutional rigidities than to the real appreciation of the currency.

Finally, we outline a medium-term policy strategy for Azerbaijan, which could serve as a blueprint for countries dealing with the dual challenge of transition and oil boom. This is done in a comparative framework, relating Azerbaijan's prospects to the experience in the 1970s of Ecuador, Indonesia, and Nigeria. The strategy relies on policies promoting savings and open trade. At the same time, structural policies need to strengthen the supply side; particular attention should be paid to the capacity for financial intermediation in the banking sector.
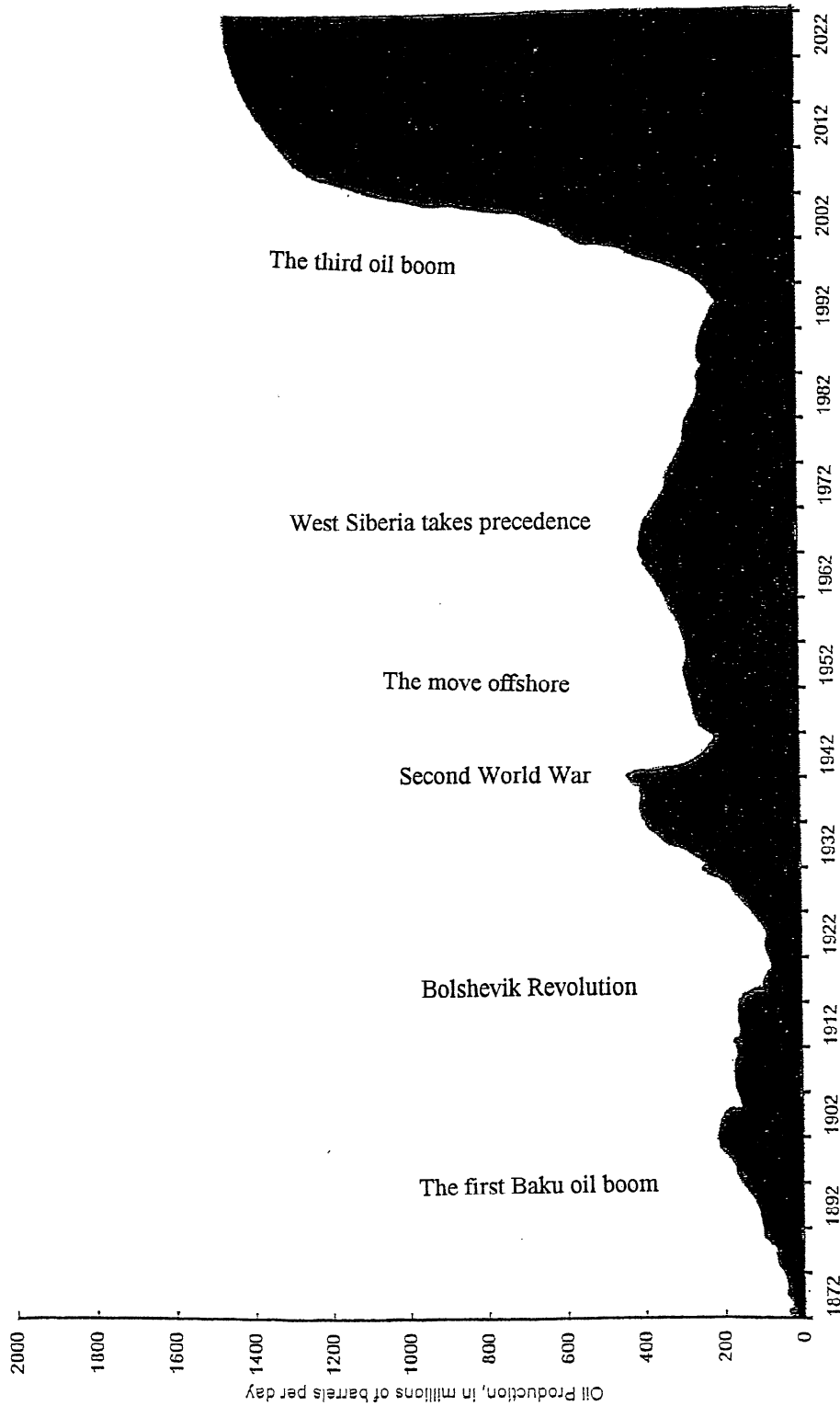
I. INTRODUCTION

Following the disintegration of the Soviet Union, a substantial part of its vast oil and gas resources were left not only to Russia, but also to a few countries in the Caspian Sea region and in Central Asia: Azerbaijan, Kazakhstan, Turkmenistan, and Uzbekistan. These countries are now facing the challenge of managing the transition from plan to market as well as how to deal with their natural resources. In designing their policy strategies for the next decade, they need to avoid what has often been called the "Dutch Disease"—the negative effects of an inadequately managed natural resource boom. This paper identifies the economic risks associated with the utilization of natural resources in a transition economy and proposes a policy strategy to deal with them.

Among the four resource-rich transition countries around the Caspian Sea, we focus on Azerbaijan for two reasons. First, the risks associated with the Dutch Disease are particularly imminent in Azerbaijan, as it has already made great strides on the path to market reforms and in exploiting its natural resources. In December 1994, the first production sharing agreement (PSA)—the so-called "Contract of the Century"—was signed with an international consortium to develop oil deposits in the Caspian Sea. Several other agreements followed, and when production from the seven fields now under contract is in full swing, oil production could reach 1.6 million barrels per day[2] (Figure 1). The second reason for focusing on Azerbaijan is that it has already advanced quite far in developing an explicit policy strategy to address the risks associated with managing its oil wealth.

The paper is organized as follows. Chapter II analyzes the potential risks of Azerbaijan's oil boom. We start with the standard "Dutch Disease" theories in the literature, but draw particular attention to the specific features of a transition economy. Chapter III examines more systematically how the textbook analysis would need to be expanded to capture the dual challenge of transition and resource boom. In Chapter IV we outline a medium-term policy strategy to address these challenges. This is done in a comparative framework, relating Azerbaijan's prospects to the experience in the 1970s of Ecuador, Indonesia and Nigeria—three countries with shares of oil sector in GDP and in exports similar to those in Azerbaijan (Figure 2). Chapter V concludes.

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[2]By comparison, Kuwait currently produces slightly over two million barrels per day.

Figure 1. Azerbaijan: The Third Oil Boom

The third oil boom

West Siberia takes precedence

The move offshore

Second World War

Bolshevik Revolution

The first Baku oil boom

Oil Production, in millions of barrels per day

1872 1892 1902 1912 1922 1932 1942 1952 1962 1972 1982 1992 2002 2012 2022

0 200 400 600 800 1000 1200 1400 1600 1800 2000

Sources: Azerbaijan International Operating Company (AIOC).

Figure 2. Oil and Gas Sector in Selected Countries

Oil and Gas Sector Output in Percent of GDP

Oil and Gas Exports in Percent of Total Exports

Sources: WEO Database; and Recent Economic Developments (RED) documents.

II. The Potential Curse of an Oil Boom: The Case of Azerbaijan

As Azerbaijan's oil fields are being developed, the country is experiencing a strong investment boom, both in the petroleum sector and in the construction and service sectors, which are benefitting from the spillover effects of foreign investments and petroleum revenue. While beneficial as such, these balance of payments inflows could turn into a curse for Azerbaijan if the right policies are not in place. Slower than possible growth may not only occur in the short run as Azerbaijan adjusts to its new economic environment, but growth could also be adversely affected over the long run. The latter point may at first glance seem counterintuitive (why should a country "suffer" from its natural wealth?). However, it recently received some empirical backing by Sachs and Warner (1995), who documented a statistically significant inverse relation between natural resource intensity and growth over the past 20 years.

Economic difficulties associated with a booming natural resource sector are often dubbed Dutch Disease, with reference to the adverse effects on Dutch manufacturing of the natural gas discoveries in that country in the 1960s. In the literature, this term is used rather loosely, referring to a variety of economic problems arising when large mineral resources are developed.[3] At least three areas are relevant in the case of Azerbaijan: (i) macroeconomic adjustment problems caused by large foreign exchange inflows; (ii) unbalanced growth, i.e., the "crowding out" of the non-petroleum traded goods sector; and (iii) the "waste" of petroleum wealth through unproductive public expenditures as observed in a number of countries and described in detail in Gelb (1988).

Below, we describe the mechanisms through which the Azerbaijan economy may be adversely affected by the petroleum boom, with references to the specific challenge the country is facing due to its simultaneous transition from a centrally planned to a market economy. This may serve as a baseline scenario which illustrates what could happen if no deliberate medium-term policies are implemented to address Dutch Disease type problems. A more systematic examination of the interaction of the oil boom and the transition process will follow in Chapter III.

A. Macroeconomic Adjustment Problems

1. Short-term

The United Kingdom's economic recession in the late 1970s, which coincided with the discovery and large-scale exploitation of its North Sea oil fields, stimulated a debate about the appropriate short-term policy response to a resource boom. In the models derived from this experience, it is often argued that nominal rigidities in domestic goods prices in

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[3]For a short analytical presentation of these adjustment processes see Gelb (1988, pp. 14-31). A good overview is also provided by Corden (1984).

conjunction with flexible asset prices can generate a temporary recession in response to an oil discovery shock (Box 1).

Box 1. The Two-Sector Dutch Disease Model

Macroeconomic models dealing with a possible short-term recession caused by an oil boom (e.g., Eastwood and Venables, 1982; Buiter and Purvis, 1983) typically assume a small country with two sectors (oil and non-oil), no use of oil as an intermediate input, flexible exchange rates, and—as a special feature—nominal rigidities in domestic goods prices but flexible asset prices. The basic equations of these models consist of those of the IS-LM model, covered interest rate parity, and the Phillips curve.

An adjustment path associated with a recession is shown in Figure 3, which depicts the dynamics of the real exchange rate c and real money balances l (see Buiter/Purvis, 1993, p.230). In this illustration, the real exchange rate overshoots its steady state value as it moves from the initial equilibrium E^* to point E_1 (see also Dornbusch, 1976). The oil discovery leads to a rise in current and permanent income and thus to an increase in money demand. If the money supply is fixed and domestic goods prices are sticky, but asset prices are flexible, the nominal and thus the real exchange rate appreciates in order to maintain equilibrium in the asset market. Restoring monetary equilibrium, however, requires a downward adjustment in money demand, which under the model's assumptions, occurs through a decline in non-oil output. This is brought about by the real appreciation and the resulting loss of competitiveness in the non-oil trade goods sector.

The temporary recession caused by the overshooting real exchange rate will be reversed by the subsequent depreciation, depicted in Figure 3 by the move from point E_1 to the new equilibrium E^{**}. To achieve this long-run equilibrium, the real exchange rate must depreciate; this will raise output and real income from their depressed levels. As long as output remains below its equilibrium level, price deflation occurs and real money balances increase.[1] The new equilibrium is characterized by a more appreciated real exchange rate (RER) and a higher level of real money balances than initially at E^*. These results are consistent with the proposition that an oil discovery increases the permanent income that money is neutral in the long run, but it may have significant real effects (e.g., through overshooting) in the short term.

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[1]Note that the price deflator in the money demand equation is a weighted average of (sticky) domestic goods prices and imported goods prices.

Indeed, the theory of a rapid short-run appreciation of the RER appears to have some relevance to the case of Azerbaijan. The "oil discovery time" can be pinpointed to 1994 when the "Contract of the Century" was signed, increasing wealth and permanent income expectations. Demand pressures were fueled by incoming foreign direct investments (FDI). At the same time the foreign exchange market was liberalized and the manat was allowed to float freely. As predicted by the models with flexible exchange rates and inertia of goods prices, the resulting RER appreciation pressures were manifested in a strengthening of the *nominal* exchange rate. There is some evidence of downward rigidity of domestic prices in Azerbaijan as prices of importables have not declined to the extent that the nominal exchange rate has appreciated. Thus, the above mentioned two-sector model may explain why Azerbaijan has experienced a stronger appreciation of its RER since 1994 than most other countries of the Baltics, Russia, and the other states of the former Soviet Union (BRO).

However, there is no evidence that the appreciation of the RER has led to a loss of competitiveness of the non-oil sector or negatively affected output. On the contrary, both in 1996 and 1997 the economy recorded positive GDP growth rates, mainly driven by oil-related sectors, services, and agriculture. Moreover, the output decline in the non-oil industrial sector seems to have bottomed out. The reason for this may be transition-specific: While the RER has appreciated rapidly, it may still remain well below its equilibrium value, and thus not harm competitiveness. We will return to this possibility in detail below.
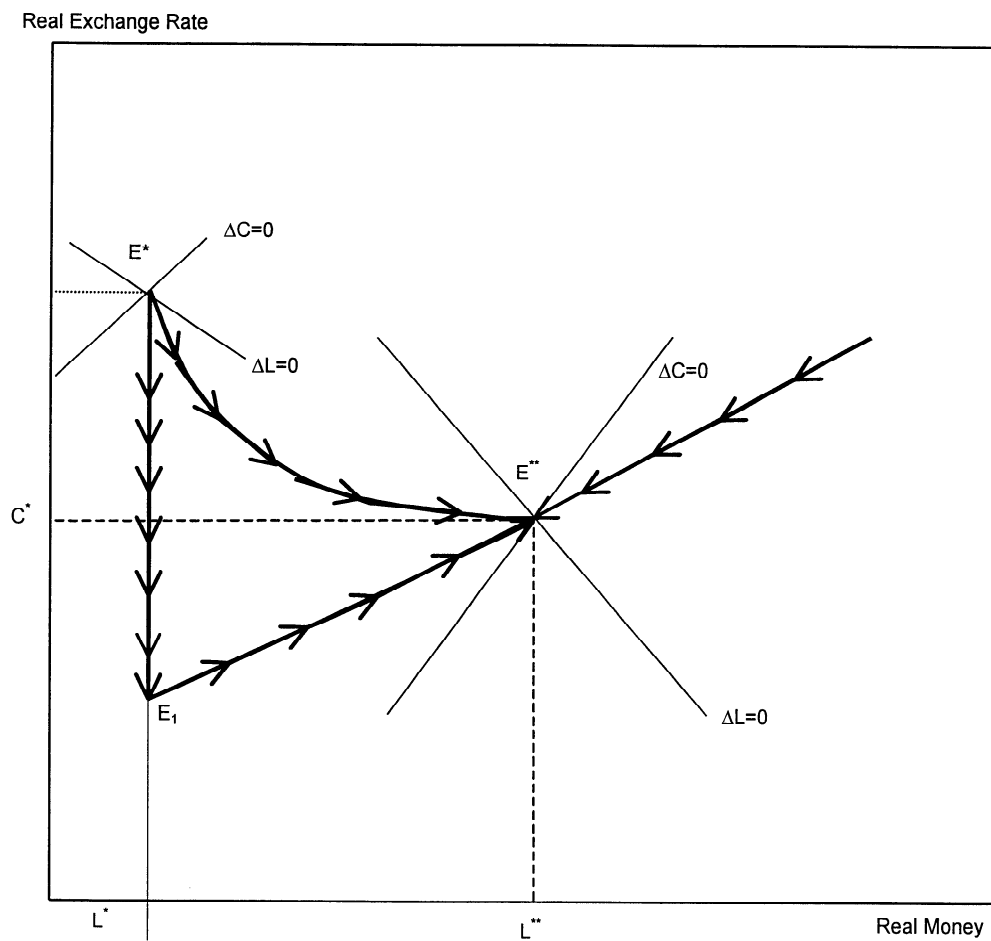
But does the real exchange rate necessarily *overshoot*, as predicted by the two-sector Dutch Disease model? Note that the overshooting requires the assumption that the nominal money supply remains unchanged. In principle, it is possible to adjust the level of nominal money stock consistent with the requirements of the new long-run real exchange rate and real balances. The short-run adjustment of the real exchange rate and real balances could then proceed as depicted in Figure 3 by the path E*E**. Here the overshooting of the RER is prevented, by increasing the money supply consistent with the increased money demand. The price level would remain stable and the real appreciation would take place fully through nominal appreciation of the currency. The relevant question is whether Azerbaijan's monetary policy is accommodating enough to prevent a substantial RER overshooting and recession. While there is no evidence of excessively tight monetary policy in the early post-discovery phase (1994-96), the recent tightening of monetary conditions due to structural problems in the banking system may indeed be cause for concern.

In a related vein, aiming at cost-recovery in public utility prices combined with a non-accommodating monetary regime could entail a significant contraction in demand and output (Coorey, Mecagni, and Offerdal, 1996). Under the conditions of an emerging oil boom in a transition economy such as Azerbaijan, the need for relative price adjustment adds to the degree of real appreciation and thus to the risk of RER overshooting.

2. Medium-term

Although the revenues from oil exports are expected to start expanding rapidly only in the medium term, Azerbaijan's petroleum-related balance of payments (BOP) inflows are already underway in the form of foreign direct investment (FDI) (Figure 4). Official foreign financial assistance adds significantly to these inflows. The dynamics of such inflows, the rise in the value of the booming sector's output, and the timing and nature of domestic absorption are of particular importance. In this situation, medium-term macroeconomic stability may be affected through a number of channels.

Figure 3. The Adjustment of the Real Exchange Rate and Real Money Balances

Real Exchange Rate

E*E1 = Adjustment through overshooting.

E*E** = Adjustment through policy intervention.

Source: Derived from Figure 8.7 in Buiter and Purvis (1983), p. 238.

Figure 4. Azerbaijan: External Transactions of the Petroleum Sector, 1995-2005
(In millions of U.S. dollars, unless otherwise indicated)

Current Account Transactions

Direct and Portfolio Investment

Net Foreign Exchange Inflows

*   Preliminary data
** IMF staff projections

Sources: Azerbaijan International Operating Company; and IMF staff estimates.

First, there is a risk to monetary stability, particularly if the central bank does not react appropriately to the BOP inflows associated with the petroleum boom. Often such inflows are related to an increase of money demand, and sterilization of the monetary impact of these flows by the central bank to contain inflation may not be necessary or desirable. However, if the credibility of the stabilization program is weak, and inflows are particularly strong, partial sterilization may be called for in order to avoid an excessive increase in money supply, inflation, and hence a further push towards RER appreciation (Calvo, Sahay and Végh, 1995, p. 28). On the other hand, as discussed above, if monetary policy overreacts and is too tight, this may lead to a strong nominal appreciation and again, to an overshooting RER. The problem is to strike a balance between price stability and nominal appreciation.

Second, there are risks to the sustainability of the BOP. In the initial phase of the petroleum boom, the current account is likely to deteriorate (Corden, 1984, pp. 372-3), while there will be a surplus during the later part of the boom. Risks are related to the uncertainty about the magnitude and timing of petroleum revenues as well as expectations about how permanent the revenue stream will be. Quantifying the BOP risks is particularly difficult as the RER appreciation reduces the cost of servicing foreign debts for domestic agents, which gives a further incentive to borrow from abroad (Corden, 1984, p. 374). In Azerbaijan, the current account deficit rose from 11 percent of GDP in 1995 to 22 percent of GDP in 1997 (mainly due to oil sector imports), and pressures to contract large amounts of nonconcessional foreign debt are mounting.

Third, there are risks to the stance of fiscal policy over time. Petroleum revenue inflows may be uneven and difficult to predict. In addition, large oil signature bonuses add to this uncertainty as they are often disbursed as bullet payments, contingent on a set of criteria that are not fully under the control of the government.[4] If oil revenues are spent as they arrive, this could lead to "ratchet" effects in public expenditure. The government may, for example, start a large investment project in one year, not have the revenue to continue it in the next year, and then retreat to inflationary forms of budget financing in order to complete the project and cover the deficit.

Finally, a continued nominal appreciation of the exchange rate may, inter alia, imperil the long-run fiscal stance if there is a strong dependence on foreign exchange denominated oil revenues, while spending occurs in domestic currency.

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[4]Production sharing contracts often specify an up-front bonus payments (as in the first PSA with Azerbaijan) with additional payments after certain production or export levels are reached. Meeting the conditions for the latter depends largely on technical and geophysical factors over which the government has little control.

B. Unbalanced Growth

We now turn to the medium- and long-term growth effects of a resource discovery. This aspect has received the most attention in the literature and is often used synonymously with the "Dutch Disease." In the three-sector models typically used for the analysis, the booming resource sector and the non-traded goods sector crowd out the the non-oil traded goods sector (Box 2). In Azerbaijan, the main potential losses would be in agriculture, related processing industries (cotton and textiles, wine and tobacco, food processing), and manufacturing.

How significant will the two adjustment mechanisms, i.e., the spending and the resource movement effect described in Box 2, be in the case of Azerbaijan? As to the resource movement effect, it is doubtful that it will be very strong during the next few years. First, the booming sectors will be able to satisfy their labor demand for quite some time through a welcome reduction in overstaffing of state-owned enterprises without much loss in output. Second, large segments of labor markets still appear flexible as overall real wages have adjusted well to productivity changes.[5]

Box 2. The Three-Sector Dutch Disease Model

The classic "Dutch Disease" argument focuses on the long-term sectoral reallocation of resources resulting from large-scale BOP inflows. As in the two-sector model, the RER plays a key sector role in the adjustment process, which in this model involves three sectors: petroleum, non-petroleum traded goods sector, and expanding non-traded goods sector. Under standard assumptions, the booming petroleum sector and the non-traded goods sector crowd out the traditional traded goods sectors. The literature (e.g. Corden, 1984, p. 360) distinguishes two channels through which the boom in the petroleum sector may negatively affect the other tradeable sectors of the economy.

The *spending effect* is similar to that observed in the two-sector macro model described above. If the petroleum wealth is not saved abroad but spent directly, or indirectly through fiscal channels, on non-traded goods, the price of these goods relative to the price of tradeable goods must rise, and the RER will appreciate. This would hurt the competitiveness of the traditional traded sector, which would shrink. Typically, the current account would deteriorate initially as domestic absorption and imports pick up in anticipation of incoming petroleum revenues, and non-petroleum traded goods exports decline, while petroleum exports only start at a later stage (Corden, 1984, p.372). The second channel through which the petroleum sector may crowd out the non-oil traded goods sector is the *resource movement effect*. As wages rise in the booming sectors, they attract workers from the other sectors of the economy, thus draining their resources and causing output to decline.

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[5]However, there is some evidence of wage increases in excess of productivity developments in the oil sector; this is discussed below.

The spending effect, however, appears strong in Azerbaijan and in other resource-rich transition economies, because of pent-up demand, particularly for consumer goods and services. Moreover, much of the spending stemming from petroleum revenues could be disbursed through the public sector, which typically has a high demand propensity for non-traded goods (Gelb, 1988, p. 26). Indeed, there are already indications that the non-traded goods sector's share in GDP (trade, restaurants and hotels, construction) is expanding faster than in non-oil producing transition countries, while prices of non-traded goods are increasing relative to traded goods. However, the time profile and size of the spending effect is still unclear at this point.

Two special factors strengthen the real appreciation in Azerbaijan. First, there are large foreign exchange inflows associated with the operations of the oil consortium, both in the form of oil signature bonuses and FDI. This reflects the fact that most oil fields have to be developed from scratch. Although the bulk of these investments have a counterpart in imports, the oil sector has had a surplus of net foreign exchange inflows from the very beginning of the oil field developments (Figure 4). Thus, foreign exchange inflows induced by the petroleum boom (or the anticipation thereof) have already arrived. Second, contrary to the implicit initial assumption made in most theoretical models, the RER in Azerbaijan is presently not in equilibrium. Some calculations suggest that Azerbaijan's currency may still be significantly undervalued (see below) resulting in an underlying upward pressure on the RER, particularly in the early stage of adjustment.

But does potentially unbalanced growth associated with real appreciation entail an overall welfare loss? The shifts in the composition of domestic production highlighted in the traditional Dutch Disease literature do not necessarily imply this. On the contrary, one may argue that the adjustment process brought about by the appreciation of the RER is an optimal response of the economy to its new "resource rich" environment (Sachs and Larraín, 1993, p. 670). Long-term growth may be negatively affected, however, if the model is expanded to include backward and forward linkages between manufacturing and other sectors, or if there are learning-by-doing effects (Wijnbergen, 1984). Some of these arguments in defense of the "disease" character of the Dutch Disease may indeed be relevant in Azerbaijan. We will return to this in Chapter IV.

C. "Waste" of Oil Wealth through Unproductive Government Spending

A third aspect of the Dutch Disease is related to the efficiency of the resource allocation. In Azerbaijan, much of the petroleum wealth is likely to accrue to the public sector through taxation and oil signature bonuses, and production sharing mechanisms. Such inflows put high demands on the quality of the implementation capacity to spend these revenues wisely. There is a risk that domestic absorption through the government could

follow a pattern similar to that in developing countries such as Algeria or Nigeria.[6] There revenues were not saved abroad or used to reduce budget deficits, but spent inefficiently as they accrued. Usually governments desire to use the additional resources to spur growth, modernization, and economic diversification and to increase the control over key economic sectors. Gelb (1988) showed that petroleum revenues are often spent on public investment projects, and—to a lesser extent—on transfers to households and enterprises (public handouts and subsidies).

In Azerbaijan, there are already strong pressures to invest in large projects which may bear low rates of return. Moreover, the viability of the projects very likely would depend on continued subsidization. Explicit or implicit subsidies would likely be channeled to traditional export industries (petrochemical and heavy industry which are currently operating very inefficiently), especially once these sectors start suffering from the real exchange rate appreciation. In fact many of these industries have little chance of becoming profitable because of large overcapacities, as these enterprises had originally been established to serve the overall Soviet market. Also, the multiplier effect of public subsidies would be weak, since these industries often have only small domestic backward linkages.

Finally, the incoming petroleum revenues can promote rent-seeking behavior. The political economy literature (such as Lane and Tornell, 1995) argues that the discovery of natural resources often leads to a "feeding frenzy", in which competing factions fight for natural resource rents and end up inefficiently exhausting the potential wealth. Corruption is common, particularly in counties with weak political structures (Gelb, 1988). There is no reason to assume that the danger of detrimental rent seeking would be less in Azerbaijan than in other countries.

In a related vein, Sachs and Warner (1995) investigated how resource wealth and associated rent-seeking behavior can induce poor economic policies which, in turn, subdue economic growth. They empirically demonstrated that resource-rich countries are prone to pursue inward-looking development strategies (i.e., protectionist policies) and—although to a lesser extent—are characterized by a relatively high level of bureaucracy and corruption. In their study, both factors had a statistically significant negative impact on growth. The long time required for liberalizing the foreign trade regime and eliminating trade distortions suggests that vested interests and protectionist forces are still strong in Azerbaijan.

III. THE DUTCH DISEASE IN A TRANSITION ECONOMY

The textbook analysis of the Dutch Disease is largely based on the experience in industrial countries (e.g., The Netherlands, Norway, and the United Kingdom) and resource rich developing countries (e.g., Ecuador, Indonesia, Nigeria). Little has been written about

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[6]These cases are well documented in Gelb (1988).

the effects of a booming resource sector in a post-Soviet transition economy. The references to Azerbaijan in the previous section suggest that several basic assumptions of the traditional model will need to be modified to reflect the special situation of countries just emerging from planned economic systems. This chapter attempts to assess the common features of transition economies affected by the Dutch Disease in a more systematic manner. It appears that, if anything, "transition factors" are likely to add to the speed of actual real appreciation generated by the emergence of an oil boom and therefore magnify the size of the related policy problems.

A. Initial Undervaluation of the Real Exchange Rate

In virtually all models of the Dutch Disease, the RER is assumed to be in equilibrium at the outset of a resource boom. A price shock or a discovery of new natural resources then leads to a sudden shift of the equilibrium RER to a new, appreciated level. The actual RER also embarks on a path of gradual appreciation, driven—depending on the model—by an increase in permanent income and domestic demand, a surge in prices of non-tradeables, adjustment of relative prices, or boom-related foreign exchange inflows. It seems highly unlikely, however, that the initial equilibrium condition holds for transition economies, which do not meet the requirements of external or internal balance and a functioning market mechanism. Thus, it is critical to know whether the initial RER at the time of the oil discovery is over- or undervalued and if its "natural" adjustment path (i.e., independent of the Dutch Disease) will reinforce or mitigate the real appreciation predicted by the theory on resource booms. The theory of RER movements in transition economies is still in its infancy. However, some stylized patterns of both actual and equilibrium real exchange rate movements have emerged from recent research in this area (Halpern and Wyplosz, 1996; Krajnyák and Zettelmeyer, 1997).

Regarding the *equilibrium* RER, there seems to be a consensus that it will appreciate for some years after the start of the transition, at least once macroeconomic stabilization has been achieved. The main reason for this is productivity growth, as enterprise restructuring, capital accumulation and new technologies in the wake of the switch to a market economy with hard budget constraints will help to remove inefficiencies.[7]

The *actual* RER typically follows a U-shaped pattern over time. Before the beginning of transition the RER is overvalued because nominal exchange rates were set at artificially high levels and prices were controlled. As the country moves to a market system and foreign exchange markets and prices are liberalized, one usually observes a sudden drop in the RER, mainly driven by strong nominal depreciation of the domestic currency. Demand for foreign assets, which was administratively restrained during the socialist era, does not meet sufficient

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[7]The Balassa/Samuelson condition requires that productivity improvements in the traded sector outpace those in the non-traded sector for the equilibrium exchange rate to appreciate (Balassa, 1964; Samuelson, 1964).

supply, forcing the price of the domestic currency to fall. In addition, the start of the transition process is usually accompanied by severe macroeconomic imbalances and high inflation expectations that reinforce the flight into foreign assets. In line with the standard Dornbusch model based on a sluggish adjustment of goods prices as compared to asset prices (Dornbusch, 1976), the actual RER will initially "undershoot" the equilibrium RER—a proposition which is supported by the (limited) empirical evidence available.
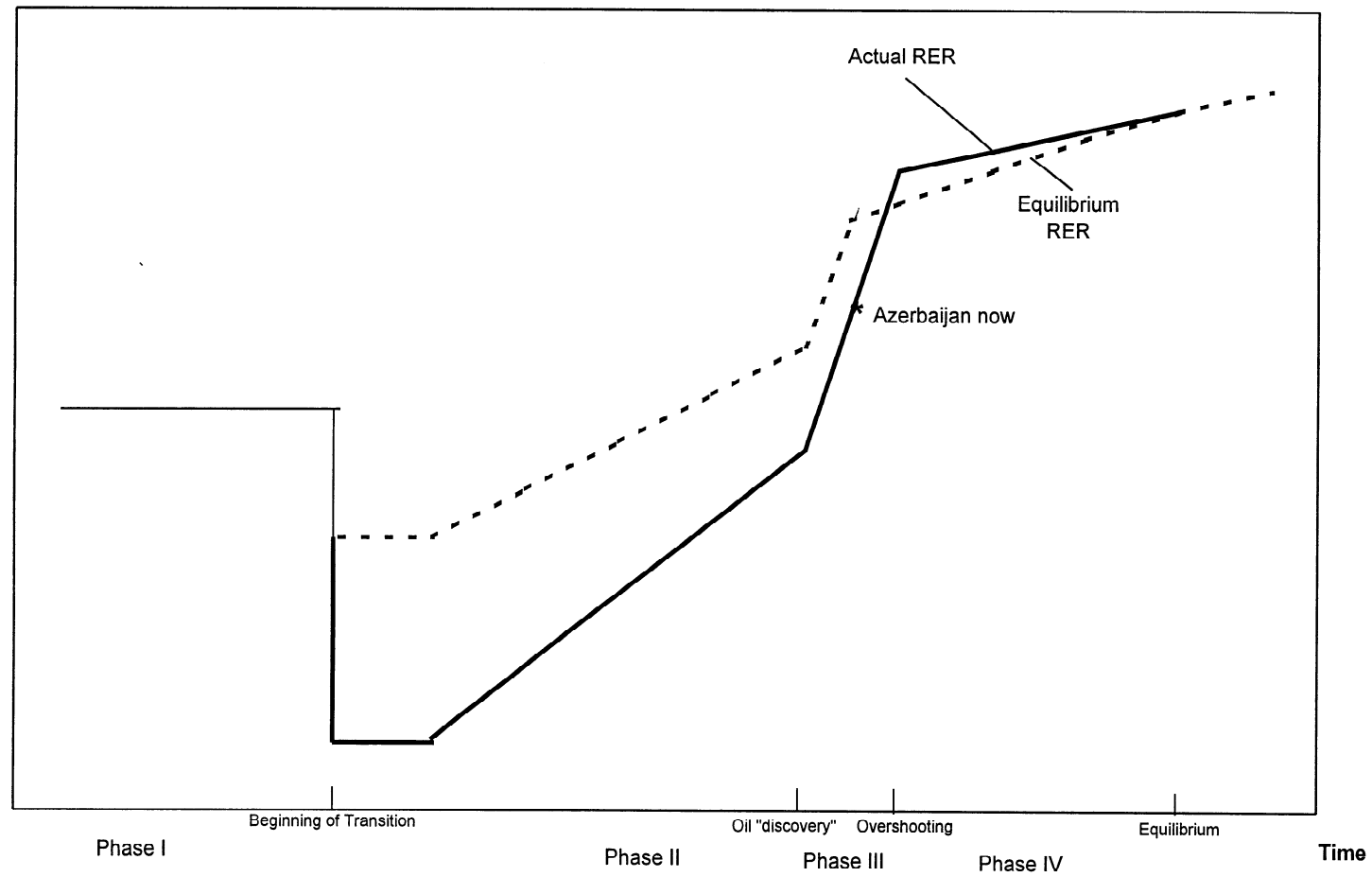
After the initial stabilization period, however, the RER starts to appreciate and gradually approaches the path of the equilibrium RER. There are several forces driving this appreciation in a transition economy. First, productivity in the traded sector increases once capital accumulation gets underway. Second, relatively large administered price hikes for utilities, rents and transportation enhanced by enterprise restructuring and tightened financial discipline will increase the relative price of non-tradeables and thus put upward pressure on the RER. Third, returns on capital investment in transition economies could be particularly high, attracting foreign capital inflows which again induce an appreciation of the RER. Finally, the release of pent-up demand pressures will accelerate the growth of private consumption, which tends to bid up the relative price of non-traded goods and services.

Piecing together the RER movements in the Dutch Disease case and in an economy in transition produces a stylized path of actual and equilibrium RER as depicted in Figure 5. During the early phase of transition the *equilibrium* RER remains broadly stable in the absence of wealth, productivity or efficiency gains, but it begins to appreciate as the forces underlying the transition process gain momentum and improve productivity. The discovery of the natural resource will put the equilibrium RER on a new, more appreciated level as the economy becomes more wealthy. In Figure 5 the stylized equilibrium path jumps upward from its gradual appreciation path. In theoretical models this movement to a higher RER level is instantaneous, reflecting the assumption of an unanticipated increase in wealth and permanent income. In reality this process may be more gradual, depending on the credibility of the discovery or the degree of risk regarding its exploitation. Also, permanent income expectations and the associated demand pressures will probably build up gradually rather than instantaneously.

The path of the *actual* RER appears as follows. Immediately following the beginning of the transition process (defined as a substantial liberalization of price and foreign exchange regime) there will be a strong depreciation, probably leading to an "undershooting" of the equilibrium level. Thereafter a period of a relatively flat RER may exist as a rising price level is offset by the depreciation of the nominal exchange rate. Once monetary stability improves and economic recovery begins, the actual RER starts to appreciate with productivity gains, capital inflows and further relative price adjustment (increases in administered prices). Moreover, with trade liberalization, domestic prices will begin to approach world market levels. The announcement of the oil discovery is followed by oil-related capital inflows and a surge of domestic demand will steepen the path of actual real appreciation. This reinforcement of the existing appreciation dynamics may well lead to an "overshooting " of the RER for some time, which may be particularly true if goods prices are sticky while asset

Figure 5. Stylized Path of the Real Exchange Rate (RER) in a Resource-Rich Transition Economy 1/

Real Exchange Rate

Actual RER

Equilibrium
RER

Azerbaijan now

Beginning of Transition

Oil "discovery"   Overshooting   Equilibrium

Phase I   Phase II   Phase III   Phase IV   **Time**

Source: Authors

1/ Upward movement indicates appreciation.

prices are not. Only in the case of overshooting will there be a (temporary) loss of competitiveness and the possibility of a recession. The correction in the level of the real exchange rate then takes place through nominal depreciation.

The limited empirical evidence available seems to support the proposition that real appreciation is reinforced by resource discovery as depicted in Figure 5. Figure 6 (upper panel) shows the simple arithmetic average of RERs (as measured by the U.S. dollar wage) in two groups of countries of the BRO: three with substantial natural resource sectors as a share of GDP (Azerbaijan, Kazakhstan, Uzbekistan)[8] and nine others without.[9] Comparable wage and exchange rate data are not readily available for the time before the start of transition and in the immediate phase thereafter. The chart starts in January 1995, when all countries in the sample had more or less overcome the initial stabilization phase and resource discoveries were just being announced in Azerbaijan, Kazakhstan and—to a lesser extent—Uzbekistan. It may therefore depict the actual RER path in the vicinity of the "oil discovery" point in Figure 5. While the RER is appreciating in all countries, the appreciation is stronger in the three resource-rich countries.
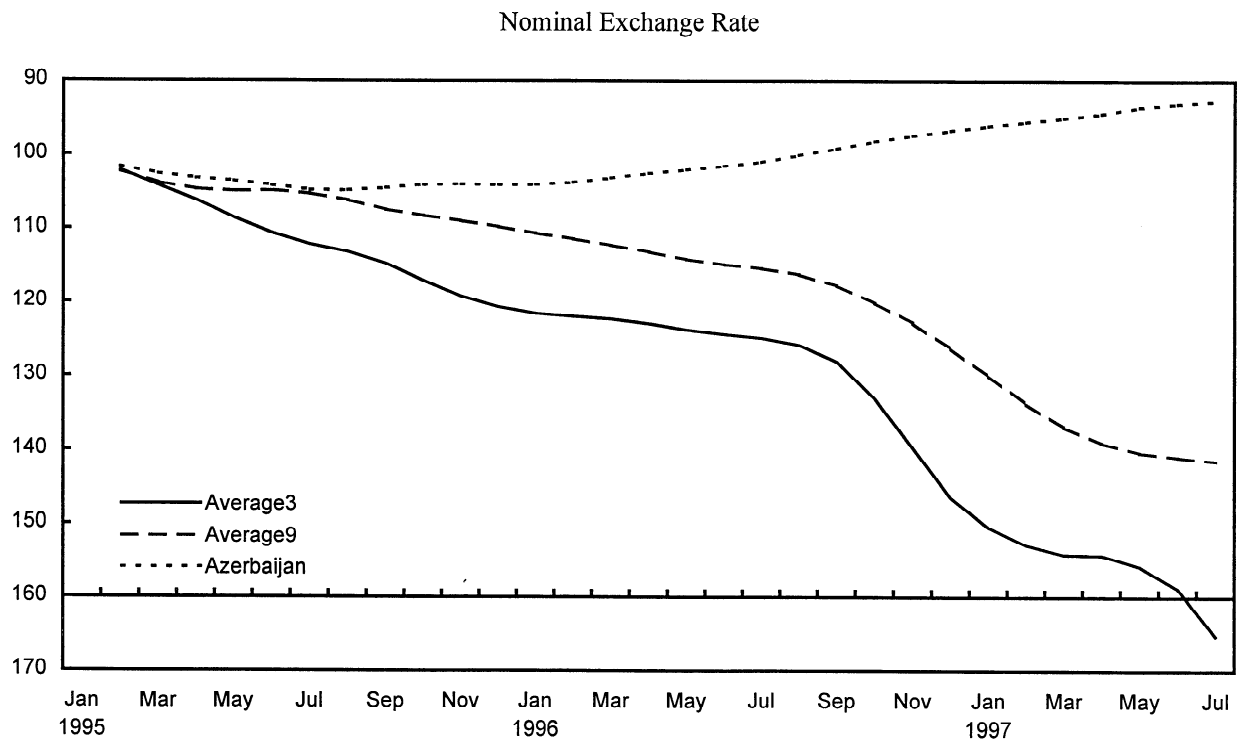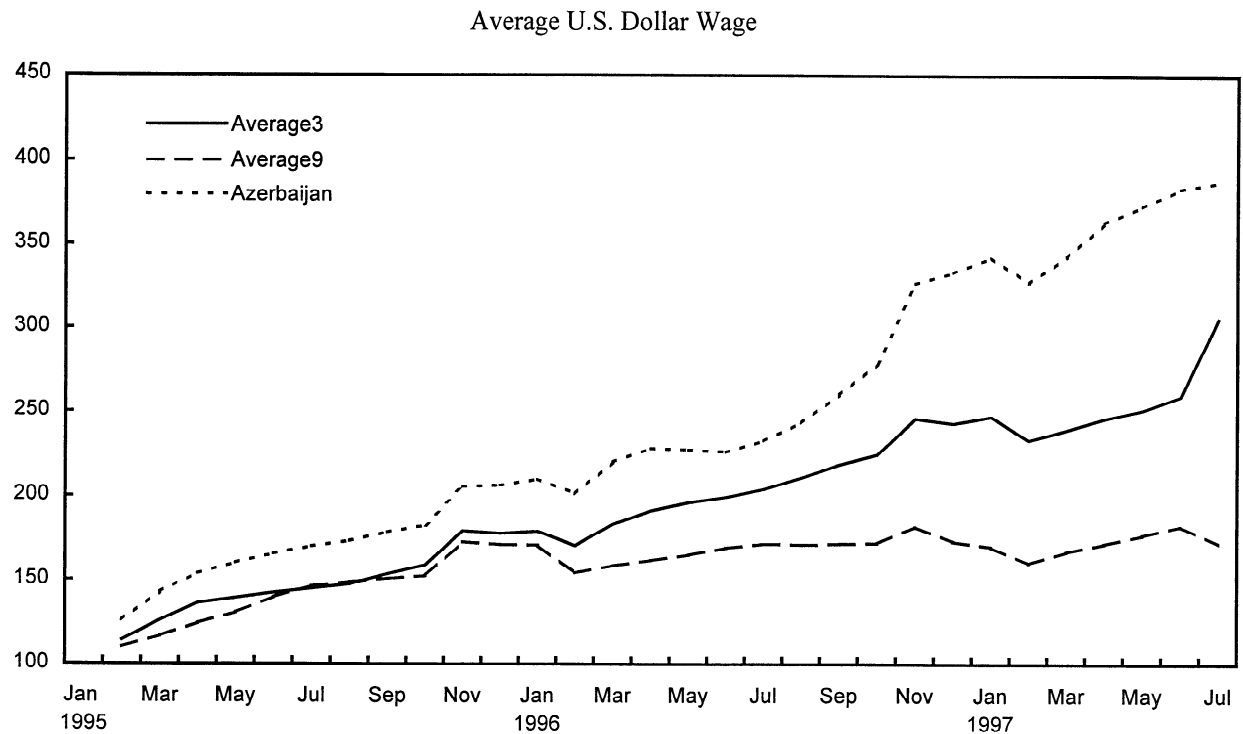
Will the actual RER in resource-rich transition countries overshoot its equilibrium level? Evidence is naturally weak since estimates of the equilibrium levels of RER are difficult to obtain. Krajnyák and Zettelmeyer (1997) suggest, however, that so far the RERs remain clearly undervalued (Table 1). According to their calculations, nowhere in the BRO region (or any other transition country) has the RER yet overshot its equilibrium level. However, undervaluation now seems to be smaller in the Baltic countries, which began reform policies and macroeconomic stabilization earlier. It also appears that the undervaluation in resource-rich Kazakhstan and Azerbaijan[10] is smaller than elsewhere in the CIS region (which excludes the Baltics). It remains an empirical issue, however, at what point in time the current undervaluation of the RER will be eliminated and threats to competitiveness arise. A more thorough analysis would require data on sectoral productivities, which are generally not available.

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[8]Turkmenistan had to be excluded from this sample despite its very large natural gas sector because nominal exchange rates and wages were not even approximately market-determined in the reporting period.

[9]This sample includes all non-resource rich BRO countries, except for Georgia and Tajikistan, where the quality of data is still very weak.

[10]More than the usual disclaimers on data quality apply to Uzbekistan, which had a fragmented exchange system for most of 1996 and 1997.

Figure 6. Exchange Rates in Resource-Rich Transition Countries
(Index, Jan 1995=100)

Average U.S. Dollar Wage

Nominal Exchange Rate

Source: European II departmental database.

Note: Average3 = Unweighted arithmetic average of Azerbaijan, Kazakhstan and Uzbekistan. Average9 = Unweighted arithmetic average of all other countries of the BRO, except Tajikistan, Turkmenistan and Georgia.

Table 1. Estimated Competitive Position in 1996 in Selected Transition Economies 1/

	Actual	Equilibrium	Ratio
	Average dollar wage per month		
Resource-rich CIS countries, unweighted average	93	151	63
Azerbaijan 2/ 3/	66	101	65
Kazakhstan	156	168	93
Uzbekistan 2/	57	184	31
Other CIS countries, unweighted average	97	174	53
Russia	188	268	70
Ukraine	75	158	47
Kyrgyz Republic	58	143	41
Moldova	66	125	53
Baltics, unweighted average	220	289	81
Estonia	248	401	62
Latvia	236	279	85
Lithuania	177	186	95
Other transition countries, unweighted average	310	445	70
Hungary	305	412	74
Czech Republic	349	503	69
Poland	319	423	75
Slovakia	265	443	60

Source: Calculated from Table 7 in Krajnyák and Zettelmeyer (1997).

1/ Equilibrium wage is an unweighted average of Specifications 1-3 as described in Krajnyák
and Zettelmeyer.
2/ The country is not included in the sample used by Krajnyák and Zettelmeyer ; the
equilibrium dollar wage calculated using their coefficients.
3/ Official wages corrected for other forms of compensation such as side payments, bonuses etc.

Table 2. Capital Inflows in Selected Transition Economies

(Average during the early years of stabilization)

		Foreign Direct Investment	
		(In percent of GDP)	(per capita, in U.S. dollars, 1995-97)
Resource-rich CIS countries			
Azerbaijan	95-97	15.7	77.4
Kazakhstan	94-96	5.6	64.0
Turkmenistan	93-95	5.7	38.7
Uzbekistan 1/	95-96	0.1	1.6
Other CIS countries			
Russia	94-96	0.4	17.1
Ukraine	94-96	0.8	5.7
Kyrgyz Republic	94-96	4.4	13.3
Moldova	94-96	2.8	10.9
Baltics			
Estonia	93-95	8.5	100.7
Latvia	93-95	3.3	107.0
Lithuania	93-95	2.6	40.6
Other Transition Countries			
Czech Republic	93-95	2.9	171.5
Hungary	93-95	6.2	276.3
Poland	93-95	0.7	60.4
Romania	93-95	0.9	20.0
Memorandum items:			
Selected Emerging Countries			
Indonesia	92-96	1.5	...
Malaysia	92-96	4.4	...
Singapore	92-96	2.0	...

Sources: Country authorities; and IMF staff estimates.

1/ Foreign direct investment for Uzbekistan is substantially understated as it is partly misclassified as loan disbursements

B. Capital Inflows

Strong capital inflows are a common feature in transition economies once stabilization takes hold, not only in those with large natural resource sectors (Calvo, Sahay, Végh, 1995). Foreign investors are attracted by initially high real rates of return, low real wages compared to potential productivities, the removal of capital controls, and good long-term prospects for developing markets and production capacities. This trend has been supported by foreign investors seeking to diversify their portfolios. Foreign capital inflows are particularly strong in countries with a large and promising natural resource sector (Corden, 1984, p.364). In particular, FDI is much higher as a share of GDP in transition countries with natural resources than in those without (Table 2).[11] They are even markedly stronger than in the emerging markets of Southeast Asia, such as Singapore or Malaysia.

Standard economic theory predicts that substantial capital inflows will tend to be reflected in an accumulation of foreign reserves and a real appreciation of the domestic currency. Such appreciation dynamics in transition economies are, of course, closely related to the general move toward the equilibrium RER described above. However, capital inflows and the associated RER appreciation would probably occur even if the actual RERs were not undervalued. One can expect that such additional capital flows to resource-rich transition countries will only reinforce the upward pressure on the RER, including the possibility of overshooting.

Capital inflows of the magnitude observed in resource-rich transition countries have their counterpart in substantial current account deficits. Are such large deficits sustainable? They may well be. First, these inflows reflect FDI or long-term capital, which are likely to increase the economy's productive potential, its permanent income, and the level of the equilibrium RER. In this case consumption can rise more than output resulting in a larger than otherwise current account deficit. Second, current account deficits largely reflect the savings-investment decisions of the private sector, as public sector deficits in resource rich transition countries are usually not very large. If both of these conditions hold throughout the exploration phase of oil projects and the risk of an exogenous negative shock to the exploration prospects are low (e.g., a regional war), even current deficits above 20 percent of GDP need not be a matter of concern.

Three special factors need to be taken into account, however, when applying this proposition to transition countries with booming petroleum sectors (Reisen, 1997, p.8). First, current private sector liabilities may become contingent public sector liabilities. For example, private debt may be converted to public debt through bail-outs of tailing enterprises or financial institutions. Second, private agents may overborrow and underestimate the marginal social cost of their loans in the wake of oil discoveries, in particular if the government is lax

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[11]Note, however, that the FDI/GDP ratios reported in Table 2 indirectly reflect the degree of undervaluation because the denominator is calculated using current market exchange rates.

about extending loan guarantees. And third, even if the external debt is entirely privately contracted, current account deficits may still be relevant signals as financial markets may be concerned about excessive borrowing, country risks and total debt ratios (Harberger, 1985).

C. Underdeveloped Financial Markets, Market Mechanisms, and Institutions

Financial markets in transition economies are still in the process of being developed. This complicates the problems associated with the Dutch Disease in at least two broad areas. First, savings (i.e., profits) in the booming oil sector may not be effectively channeled to investment in other sectors, including the non-oil traded sector. As the shortage of capital is greater than in a country with effective financial intermediation, crowding out of the non-oil traded sector will be relatively stronger. Secondly, a weak banking system generates little public trust, substantial dollarization and a low degree of monetization. Under such circumstances, monetary policies become more difficult. Particularly in a situation of high and unpredictable foreign exchange inflows. the authorities may lose control over monetary policy.

In transition countries, other mechanisms and institutions of a market economy may still be lacking as the petroleum boom takes hold. Under such conditions, maintaining a viable non-oil traded goods sector may be particularly difficult. For example, ill-defined and not unenforceable property rights in manufacturing and agriculture may impede much needed entrepreneurship in the lagging sectors and thus indirectly support relatively more resources flowing into the booming oil and nontradeable sectors. On the other hand, enterprise restructuring and hard budget constraints to adjust to market conditions will lead to the disappearance of unproductive enterprises which are likely to be found in the traditional traded sectors. Thus, the "natural" shrinkage of traditional non-oil traded goods sectors due to market forces will reinforce the structural changes triggered by the Dutch Disease.

A common institutional weakness in transition countries is an ineffective tax system. This makes the government particularly dependent on revenues from the booming oil sector, which are at least in principle easy to collect. While increasing the tax burden on the natural resource sector seems warranted[12], a narrow tax base also implies a higher volatility of revenues and the possibility of "ratchet" effects on expenditures described above. Again, institutional weaknesses may lead to more vulnerability to the Dutch Disease.

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[12]Gray (1997) shows that natural resource sectors in transition countries are under-taxed by international standards.

IV. A POLICY STRATEGY FOR AZERBAIJAN—A COMPARATIVE ASSESSMENT

A policy strategy for a petroleum-rich transition economy needs to address two challenges simultaneously: the transition to a market economy and the structural change associated with the booming petroleum sector. Below, we outline a policy strategy for Azerbaijan over the medium-term.[13] This may serve as an illustrative example of how to deal with the problems surrounding the Dutch Disease in a transition country.
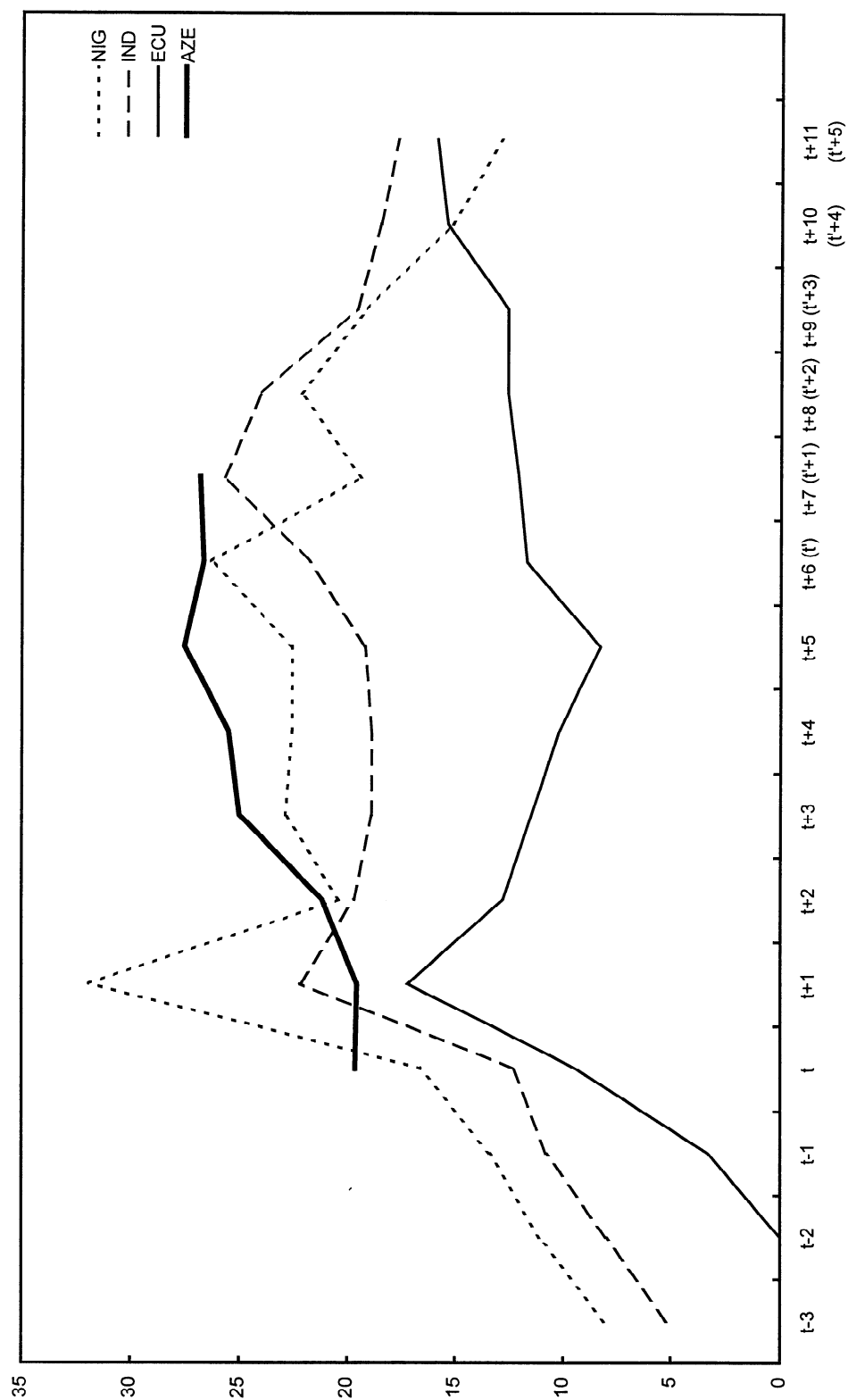
The policy strategy for Azerbaijan was developed by the government in cooperation with the IMF and the World Bank by drawing on the experience of developing countries that faced similar types of petroleum booms. Here, we relate Azerbaijan's prospects to what had happened in three prominent Dutch Disease cases in the 1970s: Ecuador, Indonesia, and Nigeria, (henceforth referred to as comparator countries). As shown in Figure 7, these countries had a similar expansion of their oil and gas sectors after the first oil revenue boom in 1973 as Azerbaijan is about to experience in the years to come. We contrast the main macroeconomic indicators of Azerbaijan's medium-term economic program with those of the comparator countries by normalizing the time series to the year t when the oil boom became effective. In the comparator countries this is 1973, the year when OPEC triggered the surge in oil prices. For Azerbaijan, the base year is 1995, the time of the signing of the first oil contract and the advent of a phase of macroeconomic stability. Thus, for comparator countries, period t in the charts represents 1973, t+1 represents 1974, and so forth. Period t' represents the second oil price boom in 1979 (and is therefore equal to t+6). For Azerbaijan, period t corresponds to 1995, t+1 to 1996, and so forth.

Note that the oil boom in Azerbaijan and other transition countries was triggered by the "discovery"[14] of oil reserves and not, as in the three comparator countries by a sudden increase (windfall) of world petroleum prices. While theory suggests that the general results (i.e., an appreciation of the RER and crowding out of the non-oil traded sector) hold in both cases, an oil discovery is generally thought to generate a larger income effect relative to the substitution effect and thus a stronger demand shock. This is because in the discovery case there is no immediate effect on the prices of oil-intensive intermediate goods.

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[13]The Government of Azerbaijan's medium-term policy objectives are set out in the Policy Framework Paper for 1997-2000 (International Monetary Fund, 1997), which at the authorities' request has been made available to the public, including through the Internet.

[14]In some cases (such as Azerbaijan or Kazakhstan) the existence of large petroleum reserves was known for a long time. However, major future exploitation only became a realistic expectation when contracts with Western oil consortia were signed. We refer to this later case as "discovery."

Figure 7. Oil Sector Output in Percent of GDP

Sources: WEO Database; and IMF staff projections for Azerbaijan.

A. Short-term Adjustment

As shown in the two-sector macro model discussed in Chapter II, Azerbaijan could be vulnerable to a short-term recession of the kind experienced by The United Kingdom in the early 1980s. Some indicators seem to confirm the stylized assumptions and mechanics of the two-sector Dutch Disease model: (i) the RER has appreciated more than in other countries of the BRO, including other resource rich countries in the region (Figure 6, upper panel), (ii) the appreciation was partially brought about through a *nominal* appreciation of the domestic currency (Figure 6, lower panel), and (iii) monetary conditions have recently become tight, although this was not due to deliberate policies but rather to structural problems in the banking system.

It appears, however, that the appreciation of the RER per se need not be of concern at this point. While the RER has appreciated rapidly, it may still remain well below its equilibrium value, possibly somewhere in Phase III in Figure 5. The exact degree of the undervaluation is difficult to determine. One estimate, using the model by Krajnyák and Zettelmeyer (1997) and 1996 data suggests that the actual average dollar wage in Azerbaijan was still some 35 percent below its equilibrium level.[15] The interpretation that the RER has not yet overshot and harmed competitiveness is supported by the fact that growth is resuming, even in the non-oil traded sector.

A strategy to avoid RER overshooting would aim at adjusting the nominal money stock to the requirements of the new long-run equilibrium of RER and real balances (Figure 3). Strictly speaking, one would need to know the size of the substitution and income effects, which define the elasticity of non-oil production to the real exchange rate, the elasticity of non-oil output to the real interest rate, and the income elasticity of money demand. These parameters are difficult to estimate empirically. At a minimum, however, the theory suggests that monetary policy should err on the side of being somewhat looser rather than tighter. Given the recent tightening of monetary conditions due to the deterioration in financial intermediation the main instrument to ease the monetary stance should be structural reforms in the banking system (e.g., recapitalization and privatization of state-owned banks and improving lending conditions by applying bankruptcy legislation and collateralization). Indeed, the major policy difficulty in moving along the path E*E** in Figure 3 is related to the structural weakness of the banking system which makes it difficult to adjust money supply consistent with equilibrium RER appreciation.

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[15]The official average wage in the manufacturing sector (US$22 in 1995) is not accurate, as confirmed by survey data. The concept used here is therefore labor compensation which takes into account underreporting and in-kind benefits to workers (such as free housing).

B. Preserving Macroeconomic Stability

As shown above, resource discoveries are frequently accompanied by macroeconomic disruptions as the country's economy (and its policy makers) adopt to the new conditions. However, maintaining a stable macroeconomic environment is essential, particularly in a transition country dealing with structural changes. Policy makers need to recognize that low inflation, a stable exchange rate, and predictable monetary and fiscal policies are necessary, if the country is to reap the benefits of its petroleum wealth. The main objectives are to smooth the absorption pattern over time, to prevent an excessive appreciation of the RER, and to avoid financial imbalances.
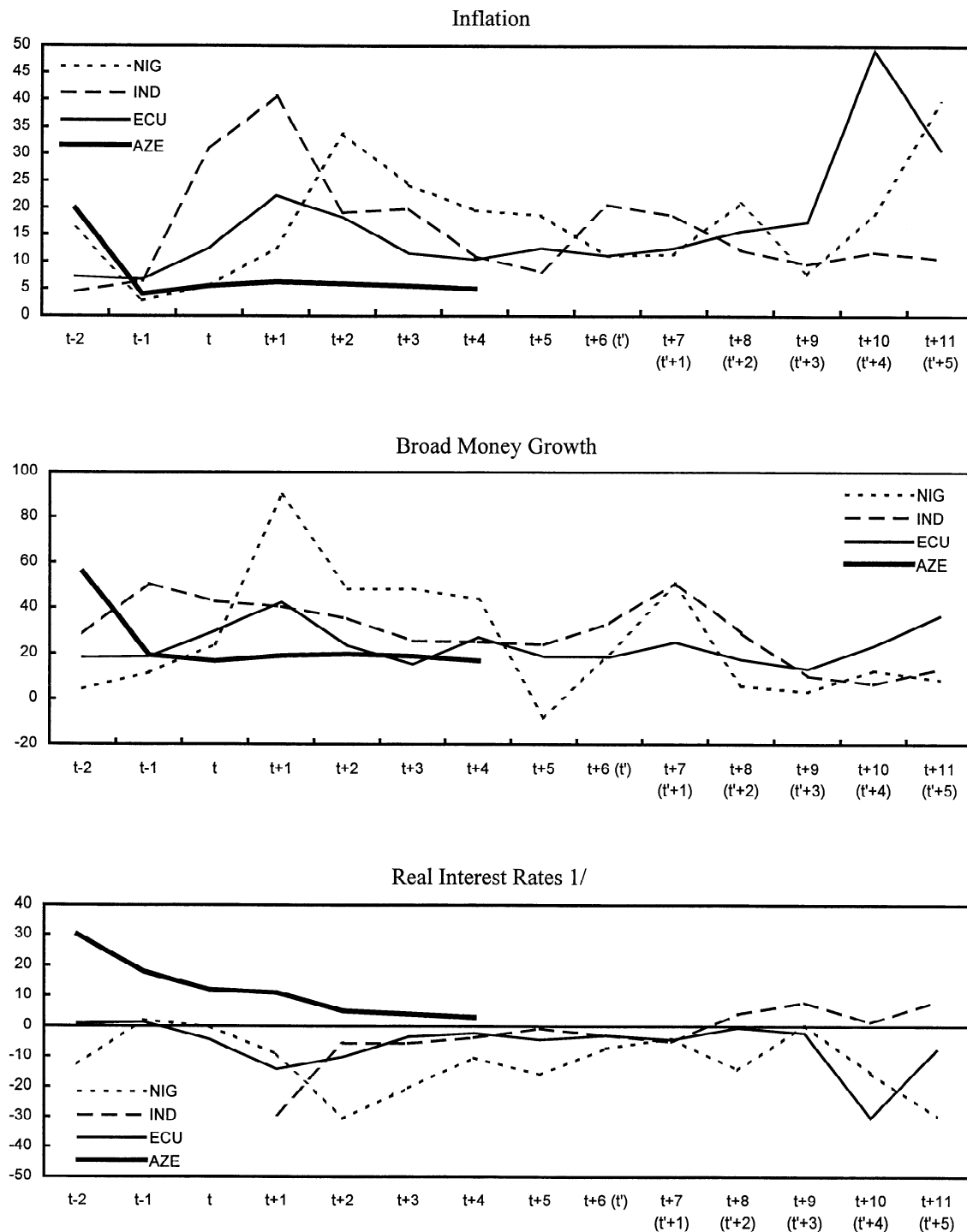
The major aim of Azerbaijan's medium term *monetary policy* is to maintain low inflation in view of the still fragile macroeconomic stabilization. With no money creation through budget deficits and an appropriate monetary policy stance, inflation can be expected to decline and confidence in the domestic currency should continue to improve. The demand for money is likely to recover further, which is reflected in a projected decline of the velocity of manat broad money during 1998-99. In this situation it is important to monitor monetary developments carefully in order to avoid an overly tight money supply and a temporary recession of the kind described in the previous sections.

As shown in Figure 8 (upper panel), Azerbaijan's inflation target of 5-6 percent per annum during the period following the oil "discovery" is quite ambitious compared to the three comparator countries in the corresponding situation. In all these countries, annual inflation rates ranged between 10 and 30 percent may, in part, have been due to the fact that their booms were more due to oil price shocks rather than oil discoveries. The authorities' medium-term inflation target is deemed achievable by keeping monetary growth in check, taking account of a gradual decline in money velocity.[16] As shown in Figure 8 (middle panel), projected broad money growth is lower than it was in comparator countries, where strong reserve accumulation and generous domestic credit expansion bloated the money supply.

With growing confidence and restructuring of the state-owned banks, nominal interest rates in Azerbaijan are expected to decline, which should restrain private capital inflows and help slow down the appreciation of the RER. Real interest rates are expected to fall as well. However, they are likely to remain relatively high for some time reflecting the downward rigidity of nominal interest rates caused by weaknesses in the banking system. Appropriately tight monetary policies and low inflation should guarantee positive real interest rates, which are needed to achieve the ambitious savings target. In contrast, all three comparator countries displayed negative real interest rates following the 1973 oil price boom (Figure 8, lower panel).

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[16]Velocity is assumed to decline as confidence in the banking system returns, as has been observed in many other transition countries.

Figure 8. Inflation, Money, and Real Interest Rates

(Annual average percentage change)

Inflation

Broad Money Growth

Real Interest Rates 1/

Sources: WEO Database; and IMF staff projections for Azerbaijan.

1/ Nominal interest rates deflated by contemporaneous consumer price inflation.

On *exchange rate policy*, Azerbaijan has until now pursued a strategy of permitting its currency to appreciate in nominal terms. The reasoning for this has been that the appreciation of the RER should be brought about in part by nominal appreciation than fully through inflation, because strong price increases could undermine the still fragile macroeconomic stabilization. This strategy recognizes that there are underlying inflationary tendencies (through relative price adjustments with downward price rigidities, and administrative price increases) that may be absent in non-transition countries. Under such circumstances, opting for RER appreciation via higher inflation may spark an inflation spiral. In line with this approach, the central bank has continued its policy of selling foreign exchange in excess of anticipated inflows, so as to avoid a too rapid growth of the monetary base.
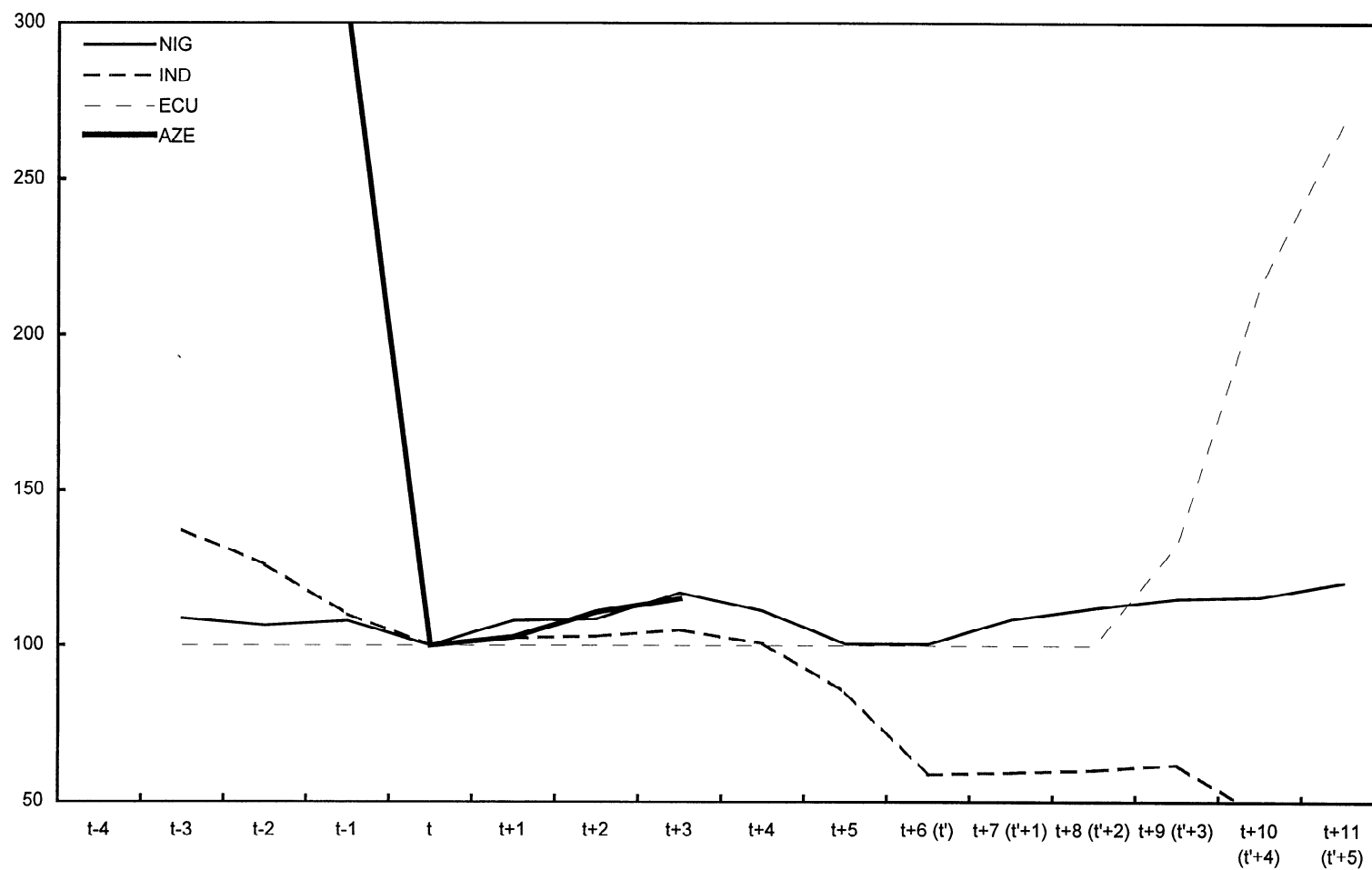
Figure 9 shows that Azerbaijan's nominal appreciation strategy, which has been followed now for about two years, is unique among countries experiencing an oil boom. None of the comparator countries and no other resource-rich transition country has so far opted for this policy, although Nigeria did experience a nominal appreciation for some time. Indonesia actually devalued its currency on several occasions during the oil price boom in an attempt to stabilize its RER. A country that did have a significant nominal appreciation following an oil discovery was The United Kingdom after 1976. However, much of the country's recession in the late 1970s is blamed on this policy, as it is believed to have lead to an overshooting of the RER. In Azerbaijan, this danger appears remote as the currency is likely still undervalued.

The principal aim of *fiscal policy* is to smooth the domestic absorption pattern over time and support noninflationary monetary policy. The policy plan is to reduce further the general government fiscal deficit and to avoid inflationary financing of the budget. For this reason, and to satisfy the credit demand by the private sector, no central bank financing is used to cover fiscal deficits. Gradually declining deficits will be primarily financed by oil signature bonuses and loan disbursements from the World Bank and other international donors, and by issuing Treasury bills. Destabilizing swings and increases in the level of public expenditure, in response to fluctuating petroleum revenues, should be avoided by the use of the petroleum revenue account at the Central Bank described below. The government also plans to adhere strictly to its external debt repayment schedule and avoid large nonconcessional foreign borrowing, as such inflows could contribute to excessive monetary expansion. Over the longer term, fiscal surpluses are likely to be necessary in order to convert part of the oil surplus into savings and thus slow the real appreciation of the currency.

As can be seen in Figure 10, Azerbaijan's strategy of aiming for eventually running fiscal surpluses[17] differs from the experience in the three comparator countries. Ecuador and Indonesia maintained modest fiscal deficits in the range of 2-4 percent of GDP following the 1973 oil price boom, partly because spending pressures on the budget did not allow the use of oil proceeds for full deficit reduction. However, these countries did attempt some deficit

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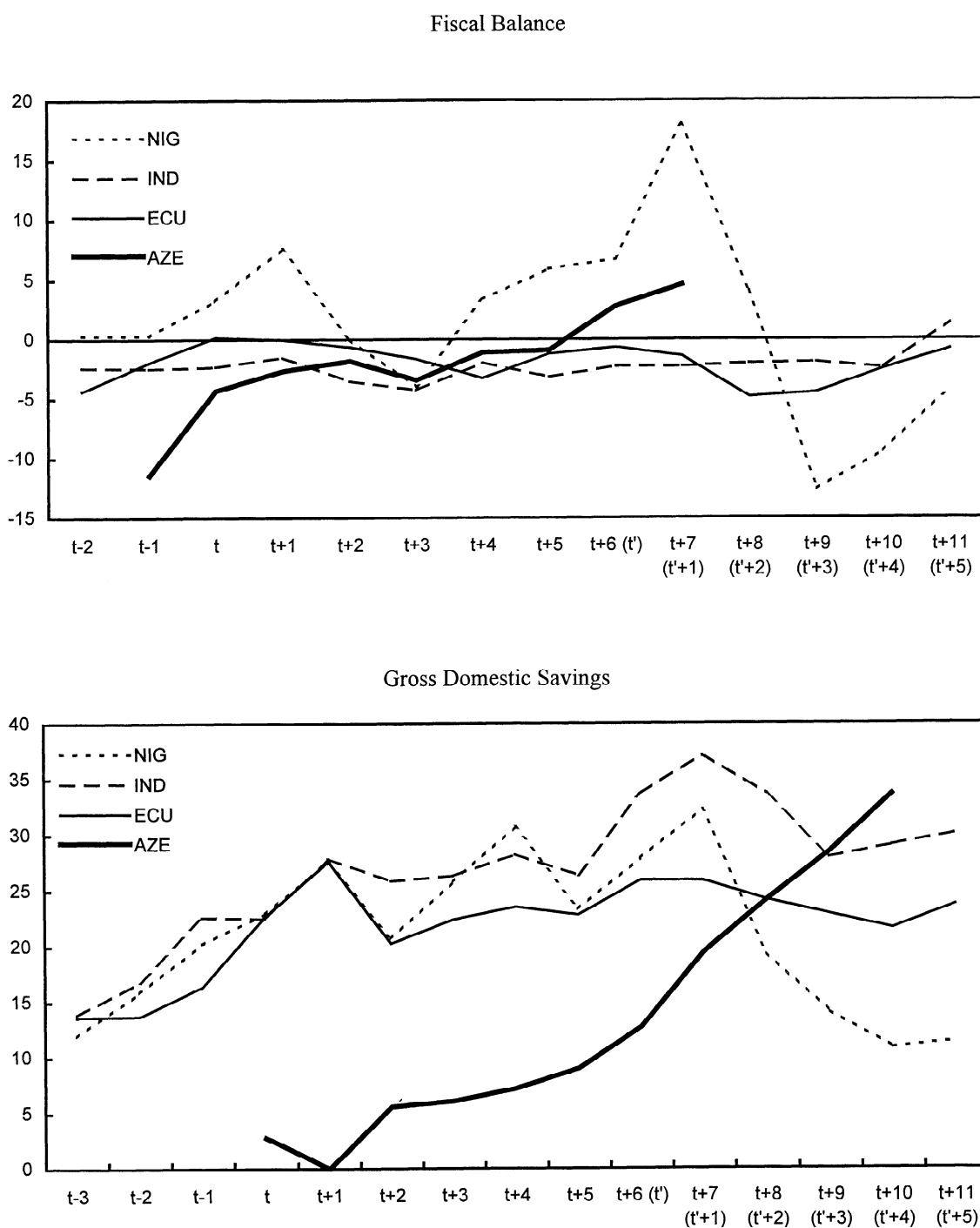[17]In the fiscal accounting used here, oil signature bonuses are counted as revenue items.

Figure 9. Nominal Exchange Rates 1/

(Index t=100)

Sources: WEO Database; and IMF staff projections for Azerbaijan.

1/ Upward movement denotes appreciation.

Figure 10. Fiscal Balance and Gross Domestic Savings
(In percent of GDP)

Fiscal Balance

Gross Domestic Savings

Sources: WEO Database; and IMF staff projections for Azerbaijan.

smoothing. By contrast, in Nigeria fiscal policies display the kind of "ratchet" effect described above, as oil revenues were spent soon after they arrived to the budget. Such volatility of fiscal policies presumably contributed to Nigeria's weak economic performance.

No immediate policy intervention regarding the large *current account deficit* is needed because such deficits are sustainable when viewed in an intertemporal context (see Chapter III). This can be seen by subtracting FDI from Azerbaijan's current account deficit: the deficit of 24 percent of GDP is reduced to a 3 percent deficit in 1996. In 2000, when the current account deficit is expected to peak at 35 percent of GDP, the FDI adjusted deficit would be close to zero. Over the same period, the public sector fiscal balance is expected to shift into a surplus. Therefore, the current account deficit would not reflect expansionary fiscal policies but the private sector's savings-investment decisions. Note also that by applying an intertemporal approach to the current account and taking account of the rising permanent income in connection with the oil discovery, a higher than currently projected level of consumption in the short term would not necessarily be detrimental for Azerbaijan. However, in part due to the structural weaknesses in the financial sector, households face severe liquidity constraints which limit their ability to borrow against future petroleum related income.

C. Adjusting to Unbalanced Growth

Under perfect market conditions, the discovery of resources unambiguously leads to an increase in national welfare (Sachs and Larraín, 1993, p.670-672). If so, is any policy action called for in Azerbaijan to prevent the shift of economic activity towards the booming sector? First, the traditional export industries may have positive externalities, such as backward linkages to other sectors or an important role in human capital formation (Wijnbergen, 1984; Krugman, 1990). Industry-specific learning by doing effects may exist in Azerbaijan, but it is difficult to assess if they are large enough to justify a direct policy intervention in their favor. Second, it may be argued that the concentration of all (additional) wealth in one booming sector promotes excessive rent-seeking behavior, and this may result in a "waste" of the wealth increase. Third, maintaining some diversity in the export sector could be desirable in order to reduce the dependence on one export commodity and thus, to external shocks. This may also be true in Azerbaijan, where the financial market mechanisms are not fully in place for households and most enterprises to build up savings in the event of exogenous shocks, such as a sudden downswing in the world petroleum price or a possible disruption in oil transportation routes. Fourth, prolonged overshooting of the RER may destroy a manufacturing base that cannot be rebuilt easily.

Such adjustment cost and market imperfections may justify limited protection for non-petroleum export industries in Azerbaijan. The aim is not to prevent the crowding out of the non-oil tradeable sector, but to mitigate and channel the inevitable structural change in the economy in order to ensure economic stability and minimize transition costs. One strategy to prevent an excessive real appreciation would be to slow the exploitation of existing oil reserves.

In Azerbaijan, however, it is too late for this. The government has already signed seven major oil contracts, and production from these wells is beginning to expand rapidly. This has triggered permanent income expectations which can hardly be reversed. Pressures to build up infrastructure and alleviate wide-spread poverty are strong, and it seems unlikely that a policy to keep most of the oil in the ground would be acceptable to the government or the public.

Given the commitment to a rapid exploitation of the oil reserves in the Caspian Sea, the threat of unbalanced growth need to be addressed by macroeconomic and structural policies, while refraining from highly distortive microeconomic intervention such as tariff protection or subsidies.[18] Specifically, a two-tier strategy appears appropriate:
(i) macroeconomic and structural policies to dampen the appreciation of the RER, and
(ii) supply side reforms to support the non-oil traded sector.

The major goal of Azerbaijan's economic strategy is to *dampen the appreciation of the RER*[19] through a combination of macroeconomic and structural policies. An important building block in this strategy is the stimulation of domestic savings in order to curb the demand for foreign capital to finance investment. Domestic absorption will be reduced in the public sector, the private household sector and the business sector.

- In the *public sector,* net savings are to be achieved by tight fiscal policies, including the timely repayment of external debt and (in later years) the build-up of budget surpluses. The resulting lower interest rates may also result in lower portfolio investment from abroad.

- *Household* savings are to be stimulated by a number of measures: (i) in the area of tax policy, there will be a shift from the direct taxation of incomes to the indirect taxation of consumption (e.g., VAT, excises); (ii) the pension system will be reformed, possibly with the introduction of a funded pension system based on individual retirement accounts; and (iii) a restructured financial system with sound banks and insurance companies will make saving safer and thus more attractive for households.

- Net savings in the *business sector* are to be promoted by giving enterprises a chance to retain the bulk of their productivity gains; this has already been partly achieved by a reduction of enterprise profit taxation (e.g., the elimination of the excess wage tax) and cautious wage policies.

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[18]The ineffectiveness of various "cures" for the Dutch Disease is described in Enders and Herberg (1983).

[19]It may be argued that this not only helps the traded non-oil sector, but also presents a further windfall to the booming oil sector (see Corden, 1984, p. 375). Therefore, this policy is supplemented by taxing the oil sector and using this revenue to reduce the fiscal deficit and increase public investment (see below).
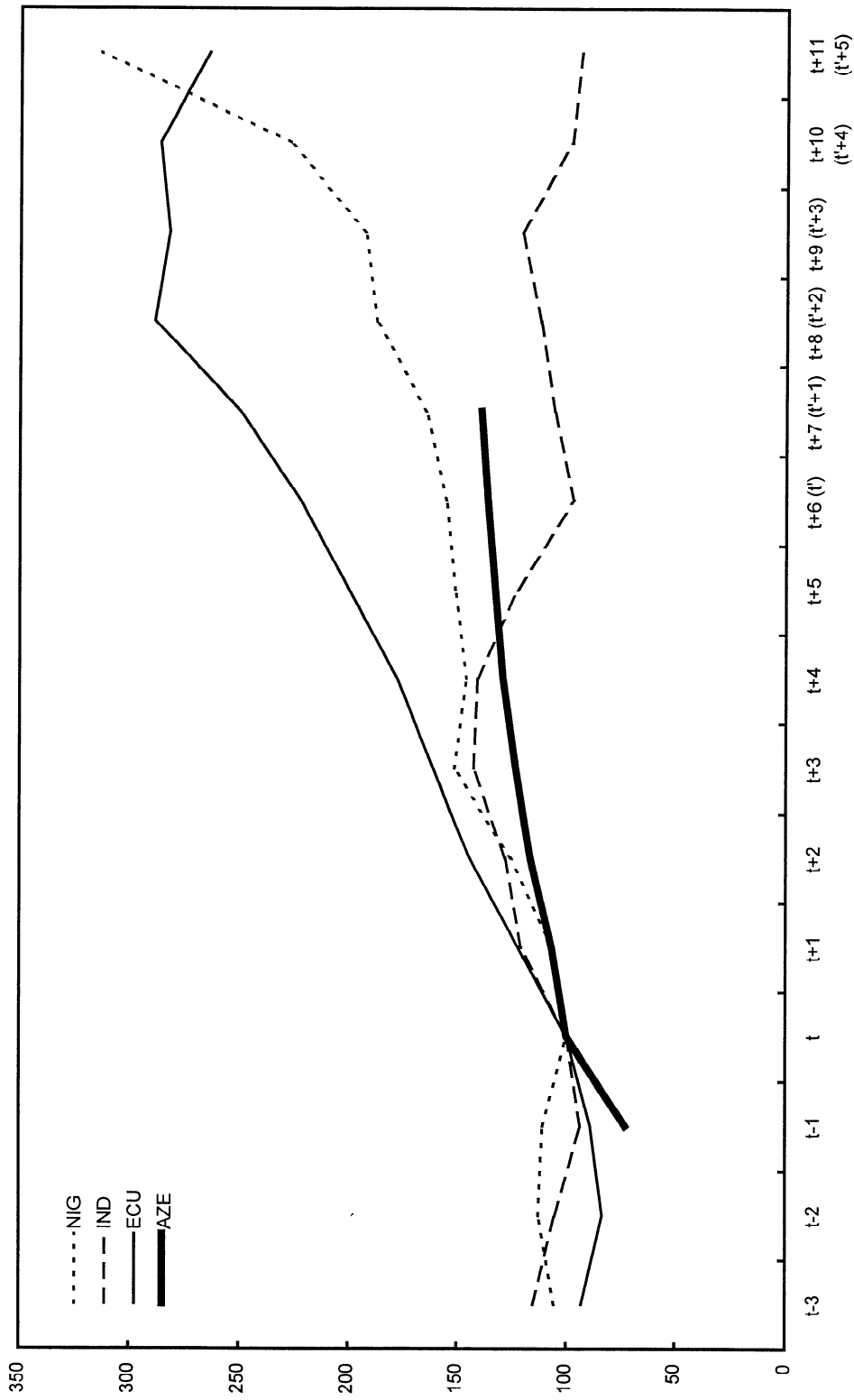
These policies aim at increasing domestic savings from some 3 percent of GDP in 1995 to some 10 percent in 2000. This is still well below comparator countries (Figure 10, lower panel) because transition countries like Azerbaijan had very low savings ratios at the outset of the oil boom.

The second building block of Azerbaijan's strategy to slow the appreciation of the RER is an open trade regime. Lowering trade barriers will allow spending to spill over into a wide range of imports. The outflow of foreign exchange will partially compensate for strong capital inflows related to the oil sector. In the same vein, the liberalization of capital account transactions would ensure the unhindered transfer of savings abroad and reduce appreciation pressures.

The aim of these policies is to confine the appreciation of the RER to less than what was observed in the three comparator countries following the first oil boom in 1973. None of these countries implemented sufficiently strong policies to increase domestic savings and liberalize foreign trade. On the contrary, both domestic absorption and trade protection tended to increase in the wake of the first oil boom. If Azerbaijan strictly implements the policy package described above, it may be able not only to eliminate the "appreciation premium" of a transition economy, but also achieve a somewhat slower real appreciation than Ecuador, Indonesia and Nigeria in the 1970s (Figure 11).
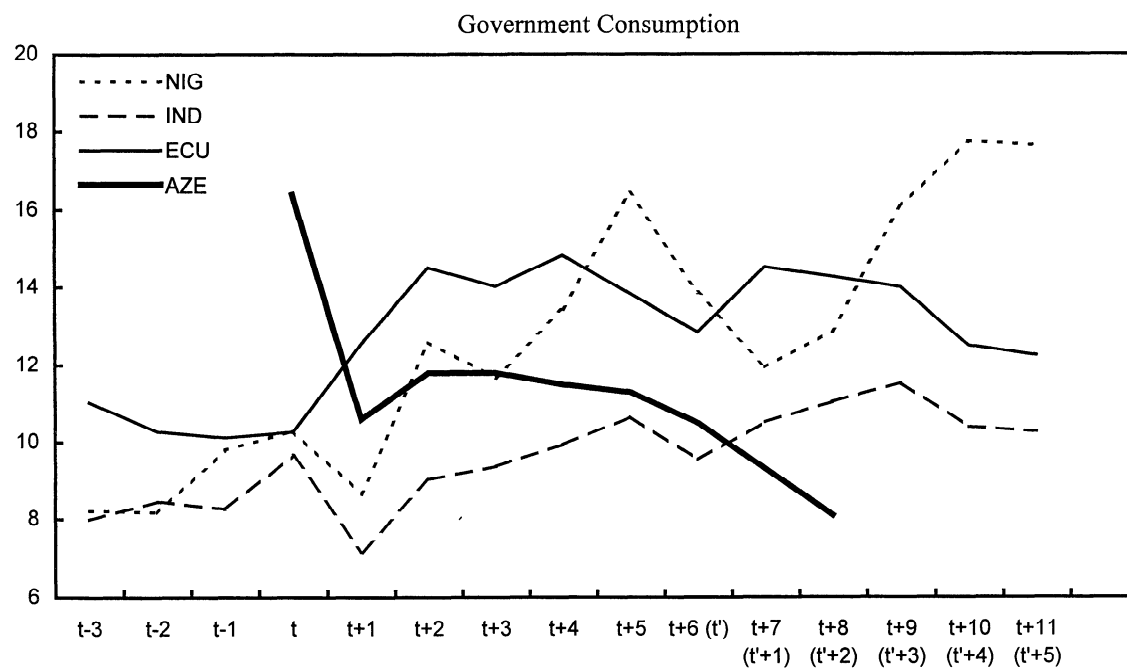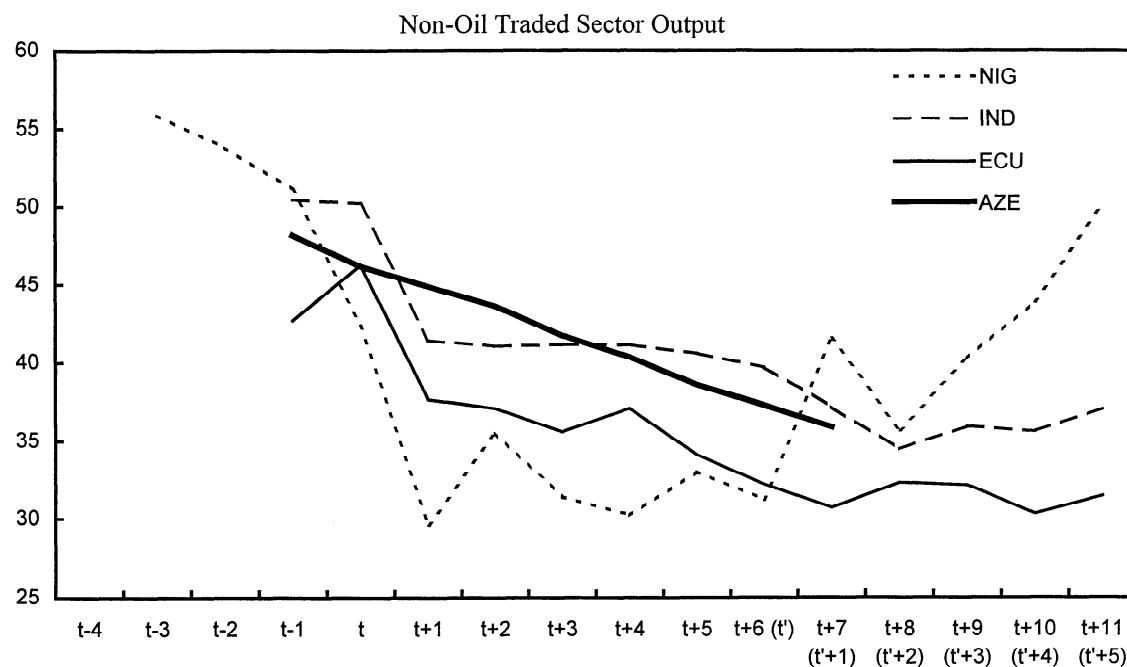
Supply side reforms are designed to enable the non-oil traded sector (agriculture, food processing and manufacturing) to operate in a market environment. Structural measures to free these sectors from the disincentives of the planning era include, inter alia, the liberalization of export regulations (e.g., elimination of licencing requirements for strategic export goods), the freeing of producer prices, a simplification of the tax code, privatization of state-owned enterprises, and land reform. Structural policies to strengthen the non-oil sector will be supplemented by a restructuring of the banking sector. Improved financial intermediation will facilitate the channeling of profits and savings from the oil sector to investment in the non-oil sector. Note that these policies are not intended to halt the *relative* decline of the non-oil traded sector. Rather, they aim at keeping the shrinking of this sector broadly in line with the decline observed in the comparator countries in the 1970s (Figure 12, upper panel).

Figure 11. Real Effective Exchange Rates

(Index t=100)

Sources: WEO Database; and IMF staff projections for Azerbaijan.

Figure 12. Non-Oil Traded Goods Sector Output and Government Consumption
(In percent of GDP)

Non-Oil Traded Sector Output

Government Consumption

Sources: WEO Database; and IMF staff projections for Azerbaijan.

D. Spending Oil Revenues Wisely

Under the present institutional setup in Azerbaijan's revenues from the sale of oil accrue to the state oil company SOCAR, a publicly held enterprise outside the budget. Oil signature bonuses are then transferred to the budget via a special account at the central bank. Once revenues from production-sharing arrangements become large, this arrangement may need to be reconsidered. Investing these revenues may in the long run not be a task of the central bank. Through what channel should the oil wealth be best put to use in the interest of the public? Several alternatives may be considered:

One option is simply *to leave the oil proceeds entirely with SOCAR*, because—following the argument by Collier and Gunning (1996)—as a commercial enterprise the company may make more rational and efficient use of these revenues than the government. The problem is, however, that SOCAR does not operate like a private, profit maximizing enterprise. The company has not been corporatized and there is no private shareholder control over its operations. This leaves room for adverse rent distribution behavior as can, for example, be seen from high wage increases even at times when output (and productivity) remained flat (Figure 13). Public control over oil revenues accrued by SOCAR is preferable because at least some degree of transparency and accountability can be ensured.
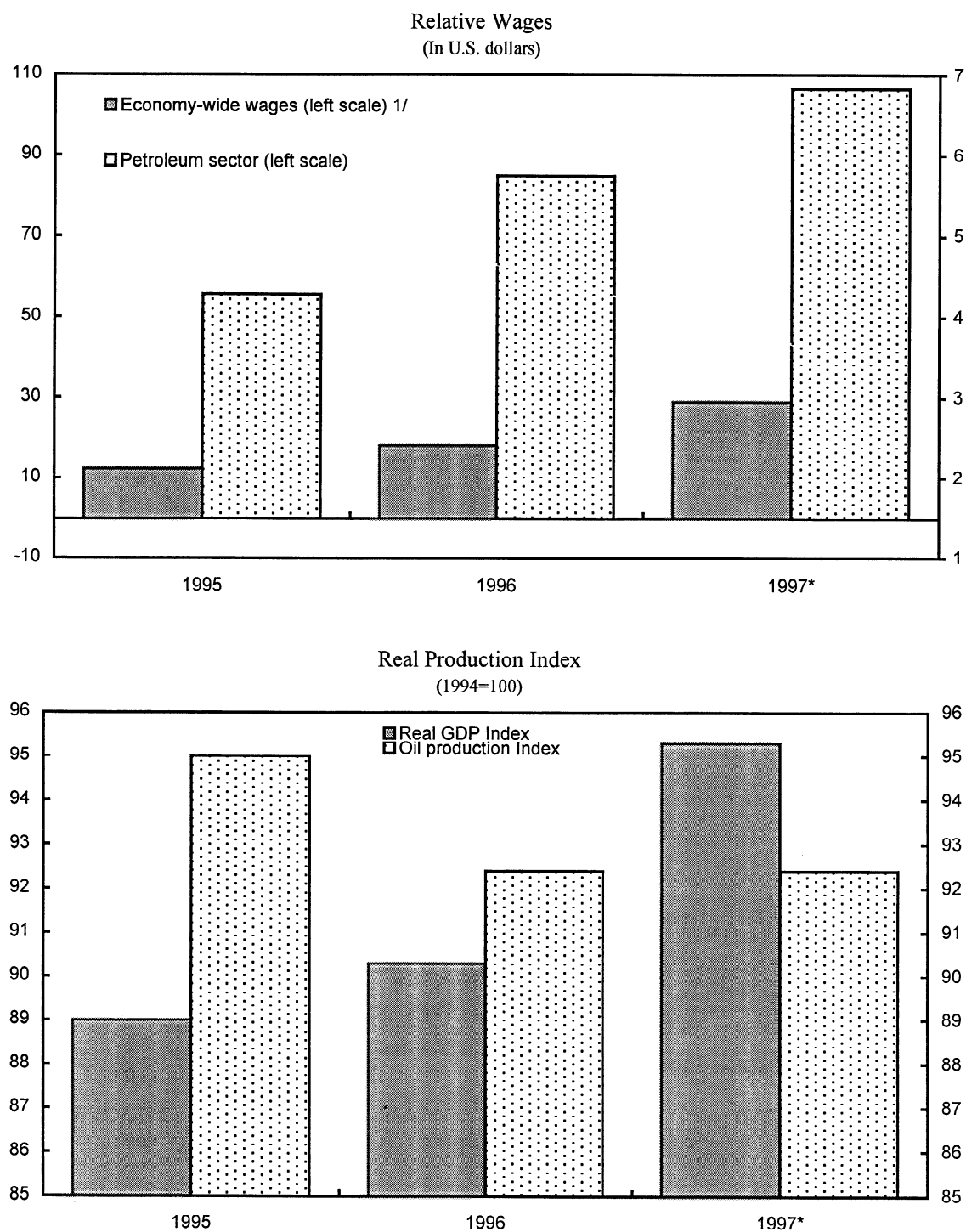
All oil revenues could be *transferred to the budget immediately*. While straightforward, this solution could lead to the kind of ratchet effects described above. However, tax revenues from "old" oil (i.e., oil from existing fields which largely serve domestic demand and the regional market) such as royalties, petroleum excises, profit tax, VAT[20] are presently directly transferred to the budget. This is justifiable on the grounds that these revenues, unlike oil signature bonuses or large-scale production shares, are steady and more predictable.

Allocation through a special oil account at the central bank is the scheme applied now. Oil signature bonuses associated with PSA contracts with foreign oil companies are transferred to a special government account at the central bank. These funds are made available to the budget according to a predetermined schedule within the framework of medium-term fiscal planning. Releasing signature bonuses smoothly to the budget avoids the "ratchet" effects described above[21]. Oil revenues are within the clear accounting framework of the central bank and therefore less prone to distorted distribution. Surplus funds held in foreign exchange at the central bank are part of official international reserves and saved

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[20]Under the PSA with the international oil consortium, revenues from the "new" oil from the deep water wells in the Caspian are subject to a reduced profit tax rate of 25 percent, but exempt from all other taxes.

[21]A similar scheme was successfully implemented in Indonesia in the 1980s (Molho, 1994).

Figure 13. Oil Sector Wages and Production in Azerbaijan

Relative Wages
(In U.S. dollars)

☒ Economy-wide wages (left scale) 1/

☐ Petroleum sector (left scale)

Real Production Index
(1994=100)

☒ Real GDP Index
☐ Oil production Index

* Preliminary data

Sources: State Statistics Committee; and IMF staff estimates.

1/ Official wages, March-May average for each year.

abroad. The drawback of this scheme is that profit sharing between the central bank and the government becomes difficult and genuine central banking functions are blurred. A different investment portfolio may need to be followed for the oil funds invested abroad (i.e., high yield, long-term assets) than for the central bank's foreign currency reserves (i.e., highly liquid assets). Therefore, allocating oil revenues at the central bank may only be an intermediate solution.

Finally, oil revenues could be *transferred to an Oil Trust Fund* managed outside the usual budget framework under the combined supervision of monetary and fiscal authorities. Proceeds from this Fund could be used for public investment projects or, for example, for an initial capital endowment of a funded pension scheme, which would become an institutional investor in the capital market[22]. If risk-adjusted yields abroad are relatively higher, a substantial part of these savings could be held outside Azerbaijan (the Kuwait Investment Office model). Such an arrangement could be used in Azerbaijan in the future, perhaps for the proceeds from the production sharing agreements which will come on stream after capital recovery in 1999. Currently, the framework to establish an Oil Trust Fund is lacking. However, preparatory work on establishing such a fund is expected to start in the near future (including the development of guidelines for investment, organization, profit sharing, and safeguards against abuse).

In one way or another, additional oil revenues will accrue to the budget and the question arises how the government should use them. In principle, it has a choice between expanding investment and public consumption, or reducing taxation to promote private consumption. In the case of Azerbaijan, public investment appears to be the most sensible way of using some of the additional revenues from the petroleum sector—at least in the near future. First, (marginal) social returns in this sector are presumably high. Second, a wide range of physical infrastructure is seriously deficient, which reduces the misallocation risk of such a strategy. Finally, this supports the goal of mitigating the RER appreciation because expenditures on (physical) capital formation tend to be more import-intensive than those on consumption (this is shown in Gelb, 1978; and Calvo, Leiderman, Reinhart, 1994).

Allocation of oil revenues to public investment requires a multi-year investment plan, which is now in the process of being drawn up. In its investment policy, the government intends to avoid large scale support to non-oil tradeable sectors and will primarily invest in infrastructure. To a large extent, these funds would be directed to develop physical capital serving production (transportation, communications, power supply), social capital (such as housing), and human capital (education and health).

Ultimately, the potential waste of oil revenues channeled through the public sector can only be reduced by a thorough reform of the civil service. As in most transition countries, much needs to be done in this area in Azerbaijan. Government operations in general need to

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[22]Such a scheme was at least partly implemented in Bolivia, Peru, Kazakhstan, and Kuwait.

be rationalized and made more transparent, governance needs to be improved, and corruption and misconduct need to be contained as much as possible. As a first step in this direction, parts of the government have already been reorganized, including a reduction of the number and the influence of spending ministries. Moreover, a Treasury system is in the process of being established.

Azerbaijan's strategy of allocating part of oil revenues to public investment while largely withholding it from government consumption differs sharply from what happened in the comparator countries where oil revenues accruing to the budget quickly translated into increases in public consumption (Figure 12, lower panel). The resulting cost pressures, along with loose monetary policies, were responsible for the relatively high inflation in these countries. This, in turn, exacerbated the appreciation of the RER and the Dutch Disease symptoms.

V. LESSONS FOR RESOURCE-RICH COUNTRIES IN TRANSITION

Since 1995, Azerbaijan has moved quickly both in transforming its economy to a market economy and in developing its vast oil reserves. Kazakhstan is already going through similar changes, and other resource-rich Central Asian republics of the BRO are likely to follow. The pattern of their development will probably be similar to Azerbaijan's. This includes (i) a stronger upward pressure on the real exchange rate than in other transition countries; (ii) a growing share of the resource and non-traded goods sectors in GDP and investment; and (iii) the tendency to tax and spend revenues from the booming resource sector through the government sector.

Many policies required to address the Dutch Disease are similar to those necessary to address the transition process. More specifically, a country should (i) pursue structural policies to strengthen the supply-side, in particular pay attention to the financial intermediation capacity of the banking sector; (ii) increase domestic savings, mainly by running tight fiscal policies and encouraging household savings; (iii) liberalize the trade and exchange regime; and (iv) develop market mechanisms in parallel with the development of natural resources.

In addition, our analysis suggests that: (i) Revenues from the booming resource sector should be at least partly saved abroad. In any event, they should not be immediately disbursed to the budget. Moreover, a transparently managed central bank account or an oil trust fund should be created to support a smooth absorption path. (ii) If capital inflows associated with the booming resource sector are strong enough, the central bank may want to consider a policy of nominal appreciation. At least in the short term, this policy is preferable to attaining the (inevitable) appreciation of the RER through domestic price inflation. (iii) Develop institutions to deal with petroleum revenue and investment in infrastructure. (iv) Conduct cautious monetary and fiscal policies to cope with capital inflows. (v) Monetary policy should not be too tight in order to avoid an overshooting of the RER.

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