Republic of Moldova: Selected Issues

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INTERNATIONAL MONETARY FUND

REPUBLIC OF MOLDOVA

Selected Issues

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OVERVIEW

1.   Large-scale labor emigration and the associated workers' remittance flows increasingly shape Moldova's economic and social landscape. At least ¼ of Moldova's economically active population has emigrated. Moreover, workers' remittances are large by any yardstick—they now amount to some 25-30 percent of GDP. Shedding light on the origins and effects of outward labor migration should help inform current and future policymaking in Moldova, and this paper's first three chapters focus on this topic. The remaining three chapters deal with other pertinent policy issues and challenges, namely fiscal reforms, privatization, and corporate taxation.

2.   Chapter I discusses the macroeconomic impact of workers' remittances using balance of payments data. The rising trend in remittances started on the back of the 1998 regional crisis, which encouraged a process of large-scale emigration that has persisted to this day. Indeed, the analysis suggests that emigration and remittances have reinforced each other. On a net basis, remittances are currently the single most important source of foreign exchange for the country. As such, they have significantly affected economic growth, the labor market, the balance of payments, and the exchange rate, while complicating the conduct of monetary, exchange rate, and fiscal policies. The chapter concludes that the macroeconomic problems raised by remittances reflect structural bottlenecks, calling for the acceleration of structural reforms to improve the business environment.

3.   Chapter II focuses on Moldova's labor emigration since the late-1990s using survey data designed to shed light on the economic and social consequences of migration. The survey results are broadly consistent both with the findings from balance of payments data and with the stylized facts in the labor migration literature. In particular, the survey finds that, at end-2004, migrants accounted for about 39 percent of the economically active population and that they have a strong attachment to Moldova, remitting large portions of their earnings home. These transfers are primarily used to meet basic consumption needs and to finance housing and education, with only relatively small amounts invested in business activities. Remittances are likely to remain a stable and countercyclical source of foreign exchange in the short run. However, as more migrants settle permanently abroad portfolio choice considerations may become more important. Again, a determined and sustained effort to improve the business environment could facilitate the allocation of remittances into productive uses.

4.   Following the sharp real appreciation of the Moldovan leu in recent years, external competitiveness has become a growing concern. Chapter III examines various indicators to assess the appropriateness of the current exchange rate level. It concludes that the leu is still likely to be undervalued, notwithstanding the recent strong real appreciation. While the real exchange rate appreciation has been in line with the experience of other transition countries, it has been reinforced by Moldova-specific factors, notably the rising inflows of migrants' remittances, which have raised the level of the equilibrium exchange rate. Insofar as the real appreciation reflects an increase in the equilibrium exchange rate, resisting the rise in the leu

exchange rate, particularly by central bank foreign exchange market interventions, is likely to be ineffective, and possibly undesirable.

5.   Chapter IV reviews the implementation of fiscal reforms since the late 1990s and identifies the challenges ahead. Important progress has been achieved in tax administration and public finance management, notably with improvements in the treasury and budget system. The Economic Growth and Poverty Reduction Strategy Paper 2004–06 and the comprehensive medium-term expenditure frameworks provide a basis for strategic medium-term planning, identifying priority areas and guiding the budgetary process. In conclusion, the chapter suggests areas for further strengthening within the budget system and tax administration and underscores that these reforms will require strong government ownership and commitment to deliver maximum benefits.

6.   Privatization has stalled in the last few years, and needs to be re-energized as part of a structural reform package to improve the business environment and foster private sector development. Chapter V provides an overview of Moldova's privatization program, results achieved to date, and the government's recent efforts to move the agenda forward. It concludes that although the recently adopted poverty reduction strategy includes acceleration in the privatization program as a priority action, actual implementation of the program is key to foster confidence in the privatization program and improve Moldova's damaged international reputation in this area.

7.   The government's plan to cut corporate income tax (CIT) rates in half in several steps between 1998 and 2006 aims at encouraging private sector activity and raising tax compliance. Chapter VI explores the relation between CIT rates and CIT revenue. The chapter concludes that the recent strong corporate tax performance may partially reflect better tax compliance, but also owes much to an improvement in overall business profitability that accompanied the recovery from the 1998 regional crisis. The analysis cautions that future corporate tax rate cuts carry the risk of revenue losses unless backed up by steps to broaden the tax base, including by reducing tax exemptions.

I. MACROECONOMIC CONSEQUENCES OF WORKERS' REMITTANCES IN MOLDOVA [1]

A. Introduction

8.   Inflows of workers' remittances have become increasingly important to Moldova. The large-scale emigration process characterizing Moldova today took off in the wake of the 1998 regional crisis, and since then both emigration and remittances have grown steadily. The domestic economic situation was already difficult before the crisis, as the transformation from a centrally-planned economy to a market-based economy implied drastic structural changes, resulting in output contraction and massive job losses.

Figure 1. Moldova: Gross Workers' Remittances

Source: National Bank of Moldova.

When hit by the 1998 crisis, many workers did not have any other viable alternative than to seek job opportunities abroad to support their families. This emigration trend has intensified, and in 2003 the total officially-estimated gross inflows of workers' remittances reached almost 25 percent of GDP, up from 5 percent of GDP in 1996 (Figure 1). This is very large compared to most other countries, including in the Commonwealth of Independent States (CIS) and in Central and Eastern Europe (CEE), where remittances significantly exceed 5 percent of GDP only in a few countries.

9.   The purpose of this chapter is to assess the main characteristics of remittances, their macroeconomic consequences, and policy implications. The large inflows have a profound impact on the Moldovan economy. They (i) drive growth through consumption; (ii) reduce labor supply and put pressure on wages; (iii) finance a large and widening trade deficit; (iv) put the exchange rate under appreciation pressure; (v) fuel inflationary expectations; (vi) contribute to higher tax revenues; and (vii) threaten the sustainability of the pension system. The analysis focuses on macroeconomic issues, but suggests that many macroeconomic problems reflect structural bottlenecks in the economy, requiring structural policy solutions.

10.   The chapter is organized as follows. The next section summarizes the main stylized facts on remittances, as identified in the current literature. Section C outlines the main patterns of migration and remittances in Moldova—discussed in detail in Chapter II. Section D reviews the most important macroeconomic effects of remittances, and Section E discusses their policy implication. Section F concludes.

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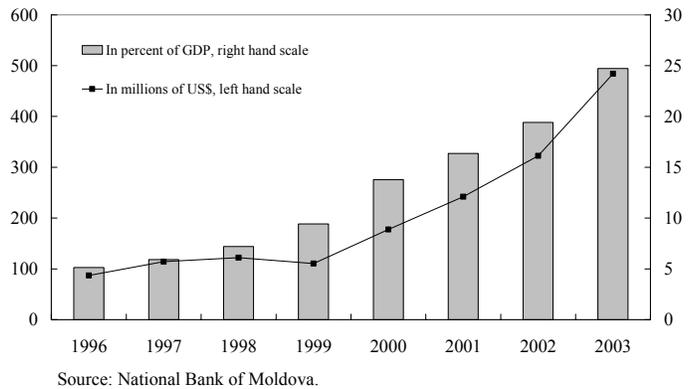
[1] Prepared by Erik Lundback. Milan Cuc contributed the section on the fiscal impact of remittances.

B. Stylized Facts on Remittances

11.   Remittances have become increasingly important as a source of external financing worldwide. Ratha (2003) reports that they are the second most relevant external financing source in developing countries, after FDI, and are more critical than foreign aid. They are mainly used for consumption and, to a lesser extent, for saving and investment. Investment, moreover, tends to be "unproductive", and often concentrated in real estate. Although remittances finance investment in education, their net effect on human capital development could be negative, since emigration can potentially lead to brain drain.

12.   Remittances affect economic agents and the economy in many ways. In particular, the evidence regarding their contribution to long-term growth is disappointing. When analyzing panel data across 113 countries, Chami et.al. (2003) find that remittances are negatively correlated with economic growth, mainly because they are generally not used to finance productive investment. The authors suggest that one important explanation for this result is moral hazard, since remitters cannot directly observe the behavior of recipients. Short-term effects on growth are more positive. Part of remittances-induced consumption spending benefit domestic producers, thereby creating a Keynesian-type multiplier effect. Indeed, several studies report positive multiplier effects of remittances on short-term growth. Remittances also have a positive impact on poverty reduction, especially because they are transferred directly to households, instead of channeled through the government—as is the case of foreign aid. Moreover, remittances can also contribute to macroeconomic stability: since they tend to be relatively stable and countercyclical, it is possible to avoid the Dutch-disease-type risks associated with large windfall gains from positive (and quickly reversible) terms of trade shocks. Finally, remittances are not debt-creating flows.

13.   There are other potential negative effects generally associated with emigration and remittances. While emigration reduces labor supply, the related remittances increase demand for goods and services, putting pressure on wages and on the real exchange rate and increasing costs for domestic producers. This discourages investments in sectors that do not benefit from remittances (including the export sector). Moreover, if the inflows of remittances were to dry up quickly, the economy would become vulnerable, much in the same way as an oil exporting country suffers when oil prices plummet.

C. Patterns of Remittances and Migration in Moldova

Definition and measurement

14.   Workers' remittances are defined as the sum of two components in the balance of payments: (i) compensation of employees in the income account; and (ii) workers' remittances in the transfer account. *Compensations* capture workers' wages, salaries, and other benefits earned by non-residents (temporary workers).[2] R*emittances* are transfers from

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[2] Temporary workers can be divided into two groups: (i) seasonal migrants, and (ii) non-permanent migrants, who have been abroad for less than one year.

migrants residing abroad (permanent migrants, or workers staying or expected to stay for a year or more). A third balance of payments component— *migrants' transfers in the capital account*—could be included, but these transfers should be formally contra-entries to flows of goods and changes in financial items that arise from migration and, as such, they do not capture money sent to Moldova from workers abroad. This type of transfer is, moreover, insignificant in the case of Moldova.[3]

15.   Workers' remittances are inherently difficult to measure, as they involve transactions between and within households, often outside the formal economy.[4] **This chapter focuses on officially-recorded remittances, as reported in the balance of payments**, since they are the only available source for a time series on workers' remittances. Furthermore, these data, compiled by the National Bank of Moldova (NBM), appear to be of reasonably good quality, considering the difficulties in collection. In addition to banking statistics, the NBM estimates workers' remittances outside the banking system using information on individuals' exchange of foreign currency into lei at foreign exchange bureaus and banks' foreign exchange counters, and on transactions where foreign exchange is typically used (e.g., homes and cars). Many, if not most, other countries do not make such efforts. That said, it is important to stress that statistics on workers' remittances are incomplete and must be interpreted with great caution.

Levels, trends, and distribution of workers' remittances

16.   On a net basis, remittances inflows have become the single most important source of foreign exchange in Moldova. Remittances are sizable even if we consider only net inflows (almost 23 percent of GDP in 2003), or only inflows coming through the banking system (almost 15 percent of GDP in 2003—Figure 2). Remittances have been growing rapidly also when compared to exports of goods and services; this ratio corresponded to 15 percent in 1998, but edged up to more than 45 percent in 2003.

Figure 2. Moldova: Workers' Remittances through the Banking System

Source: National Bank of Moldova.

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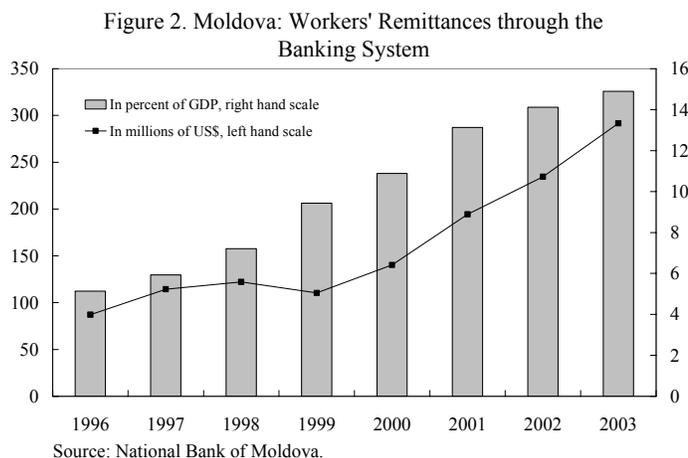
[3] See IMF (1993), Balance of Payments Manual, 5th edition, paragraphs 269-272, 302 and 352-355.

[4] The data problems related to measuring workers' remittances are widely acknowledged in the literature. See for instance Chami *et.al.* (2003), and Rapoport and Docquier (2003).

17.   The strong upward trend in remittances may have been somewhat weaker than indicated by the data. Trust in banks has improved, and confidence in the leu has strengthened over time as the Moldovan economy stabilized after the 1998 regional crisis. In addition, wire transfers from abroad have become more accessible and cheaper. This could exaggerate the upward trend in two ways. *First*, stronger banks and cheaper transfers raise incentives to use official channels and, as a result, balance of payments statistics now capture a larger share of all workers' remittances. *Second*, a stronger leu and stronger banks encourage people to exchange their idle foreign exchange cash holdings ("money in the mattress") into lei, and deposit the money in banks, increasing estimates of inflows outside the banking system. It should be noted, however, that some of those cash holdings may emanate from *unrecorded* remittances in earlier years, which only surfaced when confidence in the leu strengthened. Therefore, some unrecorded remittances may have been captured by official statistics in a later year.

18.   The main source of remittances are *temporary workers*. About 70 percent of all remittances originate from Moldovans working abroad only part of the year. Many of these are likely to be seasonal workers in, for example, agriculture and construction (Figure 3).

Figure 3. Moldova: Distribution of Temporary and Long-term Workers' Remittances
(In percent)

Source: National Bank of Moldova.

19.   Available balance of payments data do not reflect trends in the *geographical origin of remittances*, since they cover only inflows coming through the banking system. For instance, they do not capture information about Moldovans working in Russia prior to 2000, when money transfers started to be used. Before 2000, non-residents in Russia were not allowed to make any money transfers abroad; since then the maximum amount allowed has been gradually increased. At the same time, money transfers have become much more available in Russia, as several money transfer systems have been introduced. Money transfers have also increased owing to security reasons. Reportedly, it is dangerous for migrants to bring cash to Moldova across the Russian and Ukrainian borders.

Figure 4. Workers' Remittances to Moldova by Region of Origin
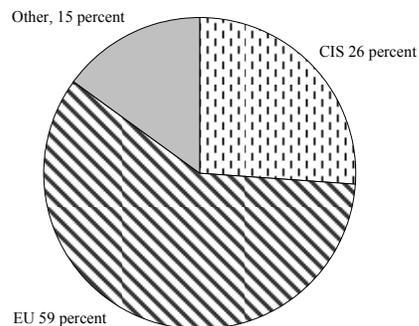
Sources: National Bank of Moldova; and Fund staff estimates.

20.   Most *remittances transferred through the banking system* originate from the European Union (EU). In 2003 almost 60 percent of these inflows came from the EU, and about a quarter from the CIS (Figure 4). Of EU transfers, 47½ percent are from Italy, and 17 percent from Portugal. Almost all transfers from the CIS originate from Russia (97 percent).

Comparison with other countries

21.   The amount of workers' remittances sent to Moldova is large both from a regional and an international perspective. As illustrated in Figure 5, Moldova clearly stands out compared to all CIS and CEE countries, and also fares highly compared to the rest of the world.[5] Ratha (2003) ranks Moldova as one of the top ten receivers of workers' remittances in terms of GDP.

Figure 5. Gross Workers' Remittances as a Share of GDP in 2003
(In percent)
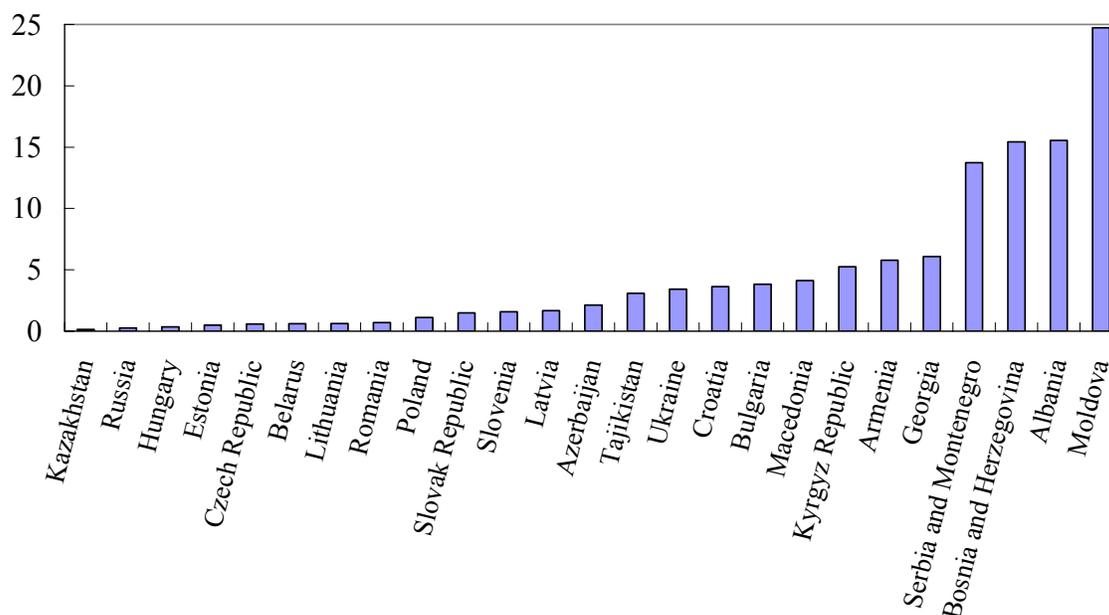
Sources: IMF; and Fund staff estimates.

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[5] Data for Turkmenistan and Uzbekistan are not available.

D. Macroeconomic Consequences of Migration and Remittances

Economic growth

22.   Workers' remittances have played an instrumental role in propelling growth in recent years, through their effect on consumption. As shown in Figure 6, real GDP growth has been driven by consumption, in turn fueled by remittances. Figure 7 shows a strong correlation between real consumption growth and remittances growth during the period 1999-2003, with a correlation coefficient of 0.98. This high correlation is a direct reflection of the fact that the large inflows of remittances boost income.

Figure 6. Moldova: Contribution of Consumption and Fixed Capital Formation to Real GDP Growth
(In percent)

Sources: Moldovan authorities; and Fund staff estimates.
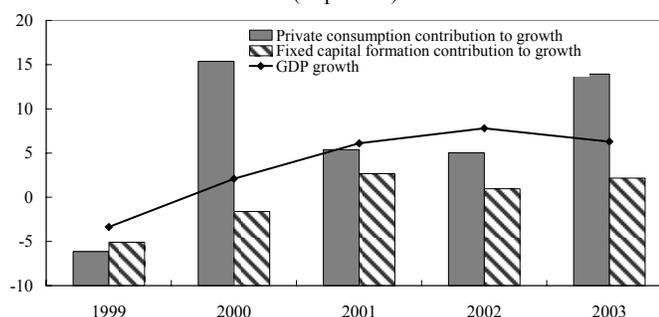
While GDP has increased relatively fast since 2000, Gross National Income (GNI) and Gross National Disposable Income (GNDI) have grown even faster (Figure 8).[6] Between 2000 and 2003, GDP per capita grew by 13½ percent on average, GNI per capita by 15½ percent, and GNDI per capita by 18 percent, mainly reflecting large and rising workers' remittances.

Figure 7. Moldova: Workers' Remittances and Real Consumption Growth
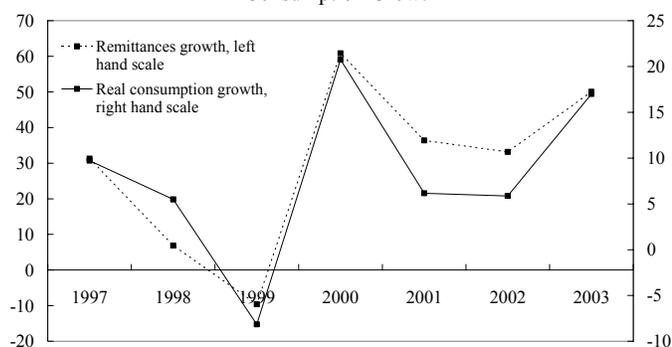
Sources: Moldovan authorities and Fund staff estimates.

23.   By contrast, investment contribution to economic recovery has been very modest. Fixed capital formation is still quite low as a share of GDP and, compared to GNI and GNDI, has remained virtually flat since 2000 (Figure 9). Investment has not yet recovered from the 1998 recession: while at that time fixed capital formation accounted for 22 percent of GDP, this share fell to 17 percent of GDP in 2003 and is projected to be about 18 percent in 2004. With disposable income boosted by large inflows of remittances, investment could have been

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[6] GNI is defined as GDP plus the net factor income of residents from abroad, and GNDI is defined as GNI plus net current transfers received from abroad (see e.g. IMF, 1998).

growing more rapidly as a share of
GDP had the investment climate
been more favorable. Without higher
investment, Moldova's long-term
growth prospects are grim.

24.   The current situation, with
very high remittances and somewhat
disappointing levels of investment,
suggests that Moldova could be
saddled on a path where migration
and remittances reinforce each other.
The cost for Moldovan workers to
work abroad is comparatively low
for several reasons: (i) Moldova is
located close to both the EU and the
CIS; (ii) there are tight connections
between Moldova and other CIS
countries; and (iii) since many
Moldovans already are working
abroad, they can facilitate emigration
of others.[7] The current trend of
*persistent emigration leading to
rising remittances is*, therefore, to be
expected under the circumstances.
With a favorable investment climate,
remittances could be used to finance
investment, creating jobs, and
making it more attractive for

Figure 8. Moldova: GDP, GNI, and GNDI per Capita
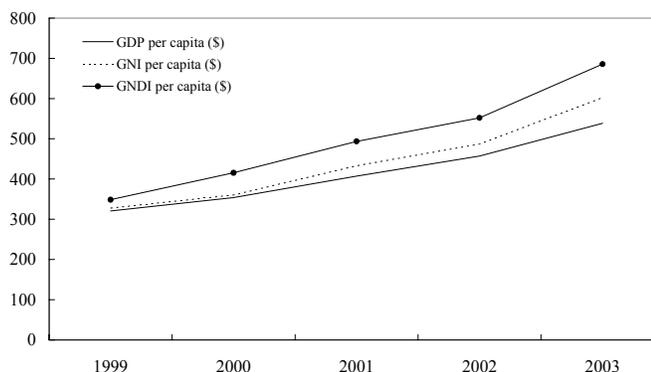
Sources: Moldovan Authorities; and Fund staff estimates.

Figure 9. Moldova: Fixed Capital Formation
(In percent)

Sources: Moldovan authorities; and Fund staff estimates.

Moldovans to stay at home. In a less favorable environment, however, the potential return on
investment may not be high enough to compensate for risky projects, making it more
attractive for recipients to use remittances to finance the emigration of one or more family
members.[8] At this point, Moldova appears to be in a situation where emigration is a better
option than investing at home.

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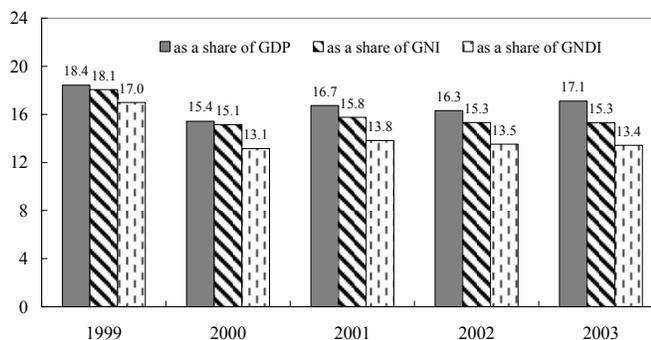
[7] According to Rapoport and Docquier (2003), this network-effect is well documented in the
sociological literature.

[8] Rapoport and Docquier (2003) present a model of economic growth and remittances, where a
country ends up in a long-run equilibrium with continuing migration and little investment if the costs
of migration are low, and the entry costs for investing and becoming an entrepreneur are high—a
situation very pertinent to Moldova.

25.   A potential problem is moral hazard—remittances may reduce incentives for reforms aimed at addressing the very problems that motivated emigration in the first place. Workers emigrate because economic circumstances are unfavorable in Moldova, and transfer money back home because they need to support their families. These remittances lift household income, alleviate poverty, and boost GDP growth through higher consumption. With such favorable developments, the pressure on the government to implement structural reforms—which would make it more desirable to work and invest at home—is reduced.

Labor market

26.   Emigration and remittances have significantly affected the labor market, raising both the equilibrium and the reservation wage. As argued above, emigration costs are relatively low, and, barring introduction of restrictive legislation in host countries, it may become easier to emigrate as emigration increases. From the perspective of a Moldovan worker, the possibility of working abroad fundamentally alters work prospects, raising the *equilibrium wage* rate in Moldova. Moreover, remittances seem to have also increased the *reservation wage*, with recipients demanding a higher wage at home.

27.   Emigration has reduced unemployment and led to labor shortages. According to the official statistics, labor supply has decreased markedly owing to emigration, while real and dollar wages have increased very rapidly. Statistics on the number of emigrants show that, by the fourth quarter of 2003, 322,000 people had left Moldova to find a job abroad (Figure 10). By the third quarter of 2004, this number had expanded to 367,000, which corresponds to about ¼ of the economic active population. These numbers should be seen as floors, or low estimates, since existing data only cover workers who officially declared that they were emigrating. At the same time employment, unemployment, and the labor force have all declined substantially (Figure 11).

Figure 10. Moldova: Labor Migration 1/
(In thousands)
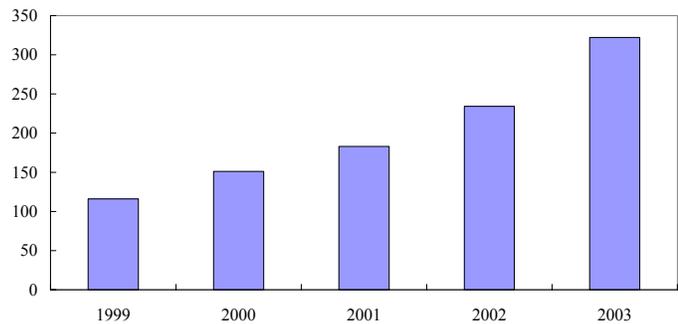
Source: Moldovan authorities.
1/ The number of people who have declared to have migrated to find a job.

Figure 11. Moldova: Labor Market Indicators 1/
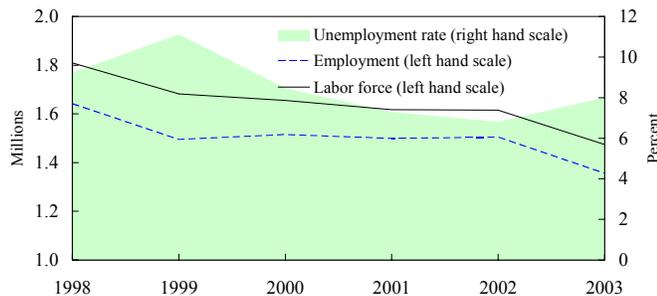
Source: Moldovan authorities.
1/ ILO methodology.

28.   The reduced labor supply has pushed up wages. Starting from 1999 the average real wage

increased by 70 percent through 2003, and by almost 80 percent through the first ten months of 2004. Average monthly dollar-wages rose by 126 percent through 2003, and by almost 200 percent through the first ten months of 2004. By contrast, real GDP is estimated to have grown by 33 percent from 1999 through 2004, and nominal GNDI (expressed in dollars) is estimated to have grown by 154 percent during the same period. There is also anecdotal evidence of labor shortages in some sectors (construction, transportation, and agriculture), where employers are not able to find enough workers unless they are prepared to pay very high wages by Moldovan standards.[9]

29.   Another potential implication of emigration is brain drain although this in practice may not have been in a problem in Moldova (see Chapter II). Many of those with *higher* education and specialized working skills may find it financially very attractive to leave Moldova. The resulting decline in human capital is likely to hamper economic growth. In this context, it is important to note that investing in a higher education may fetch a very high rate of return. Thus, recipients of remittances in Moldova may conclude that the best way to use the money is to invest in own education or children's education, with a view to find a job abroad.[10]

Balance of payments and the exchange rate

30.   Remittances have also had a major impact on the balance of payments. Exports of goods and services have been growing quite rapidly since 2000, but as imports have grown even faster, the balance of trade in goods and services has deteriorated from about 15 percent of GDP in 1999 to over 30 percent in 2003 (and was most likely over 30 percent in 2004 as well). Remittances covered about ¾ of the trade deficit in 2002 and 2003 (in 2004 the coverage may be even higher). As actual inflows could be larger, the coverage may have been even higher, implying that Moldova's current account deficits were significantly lower than reported.

31.   The increasing importance of remittances in financing trade deficit stands in sharp contrast to the disappointing performance of foreign direct investment (FDI). While workers' remittances have been growing rapidly since 2000, FDI has lagged behind, covering only 10 percent of the trade deficit in 2003. This is yet another indication that the investment climate in Moldova is not conducive to private sector activity. As a result, remittances have become much more important than FDI as a source for foreign exchange inflows (Figure 12).

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[9] There are few formal studies on the effects of emigration on wages. Mishra's econometric analsys (2004) finds a strong positive effect of emigration on wages in Mexico.

[10] Yang (2004) finds that in the Philippines remittances are indeed invested in education.

32.   Remittances inflows have created a substantial appreciation pressure on the exchange rate. Since the second quarter of 2003 the leu has been under a fairly constant appreciation pressure, in particular against the dollar, but also against other currencies. As a result, the leu has strengthened vis-à-vis the dollar as well as against a trade-weighted currency basket, the Nominal Effective Exchange Rate (NEER) (Figure 13). At the same time, the NBM has stepped up its purchases of foreign exchange, mainly dollars, to dampen the actual appreciation of the leu. Without those interventions, leu appreciation would have been even stronger. Workers' remittances are the only large foreign exchange net-inflows that can explain this strong appreciation pressure.

Figure 12. Moldova: Workers' Remittances and Foreign Direct Investment
(In millions of U.S. Dollars)

Source: National Bank of Moldova.
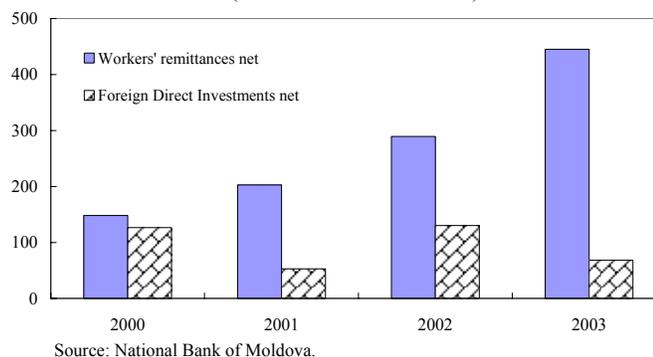
Figure 13. Moldova: The Moldovan Leu Exchange Rate

Sources: National Bank of Moldova; and Fund staff estimates.
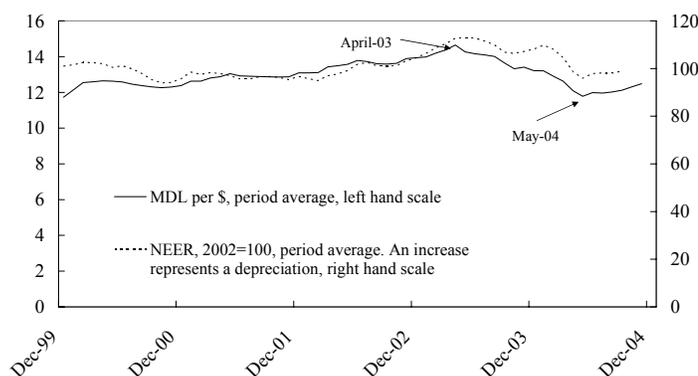
33.   While at first sight, the external situation suggests that the leu should be under a depreciation pressure, there are important unexplained factors in the balance of payments supporting the appreciation trend. The recorded current account has deteriorated significantly since 2002, and the government is running arrears on some of its external debt obligations, with an accompanying low credit rating. On the other hand, this period has seen a large accumulation of reserves. It is not surprising that, at the same time, large errors and omissions were recorded in the balance of payments. Since the second quarter of 2003, errors and omissions have been quite large and positive; in the last three quarters of 2003, they amounted to $133 million or almost 7 percent of annual GDP, and through the first three quarters of 2004 they reached $78 million or about 3 percent of annual GDP. It is reasonable to guess that remittances explain a significant share of these unexplained inflows. If all errors and omissions were unrecorded remittances, the current account deficit in 2003 would have been $55 million, or less than 3 percent of GDP (compared to almost 7 percent officially reported in the balance of payments). Part of the errors and omissions could also be due to under-invoicing of exports and over-invoicing of imports to avoid the existing repatriation requirement, which would also imply that the current account is much stronger than reported. However, the trade deficit would still be very large.

34.   The leu appreciation has also encouraged higher demand for domestic currency, making the appreciation self-reinforcing. With a stronger leu, households may be inclined to exchange their dollar-savings (e.g. from remittances) into lei. Similarly, the leu has become more attractive as a transaction currency. Consequently, there has been increasing demand for lei at foreign exchange bureaus; the appreciation pressure has been stronger there than in the interbank market, prompting the NBM to intervene in the cash market in an unprecedented fashion in 2004. There is also anecdotal evidence suggesting that the leu has become more desirable as a transaction currency in 2004.[11]

Monetary policy and inflation

35.   Although its official monetary policy objective is to maintain the stability of the currency, in practice the NBM attempts to achieve several, sometimes conflicting, goals:

- Keep inflation low;

- Preserve external competitiveness by preventing or at least limiting excessive nominal appreciation of the leu against the dollar;

- Accumulate foreign exchange reserves on a precautionary basis, to be able to meet external debt service and to reach a level corresponding to three months of imports; and

- Keep interest rates low, to support private sector development and limit government domestic interest payments.

The NBM is also concerned about its profit level, since it affects the strength of its balance sheet and the amounts that can be transferred to the budget.

36.   The large inflows of workers' remittances has complicated the task of monetary policy. It has naturally proven to be very difficult to keep inflation down, while at the same time achieving the other monetary policy goals in the face of strong inflows of foreign exchange. The NBM can choose to intervene in order to prevent the leu from appreciating by buying large amounts of foreign exchange in the open market, with the added benefit that foreign reserves are built up. However, this boosts money supply and fuels inflationary pressures. Sterilization operations can in principle help, with the undesired consequence of pushing interest rates up. Short-term interest rates (maturities less or equal to a year) are directly affected by NBM interventions in the money market, and result in higher interest payments for the government. Commercial credits also become more expensive, as a large share of them are short-term, thus discouraging private sector activity. Long-term interest

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[11] As noted in paragraph 10, when foreign currency in the informal sector is brought into the formal balance of payments, this could reflect previous balance of payments transactions (e.g. cash remittances in the late 1990s may appear in the balance of payments in 2004 as errors and omissions).

rates could in principle fall, as higher short-term interest rates help lower inflation expectations, but no such effect has been observed in Moldova. Moreover, sterilization operations are costly for the NBM, reducing its profits and its transfers to the budget.

37.   Since late 2004 the NBM has given less priority to inflation. Until then, the NBM had been trying to strike a balance between keeping inflation down and preventing appreciation, while at the same time building reserves and keeping interest rates down. However, as the inflows of foreign exchange have persisted and the pressure on the exchange rate has intensified, the NBM appears to have given highest priority to preserving competitiveness in recent months. The appreciation of the leu against the dollar was halted in mid-2004 through historically large purchases of foreign exchange; the leu even depreciated somewhat before stabilizing toward the end of the year. Sterilization efforts have been stepped up, but not enough to prevent money growth from accelerating (Figure 14). Inflation has not yet picked up dramatically, but the inflation goal for 2004 was missed and there is clearly a risk of higher inflation in 2004 (Figure 14).

Figure 14. Moldova: Money Growth and Inflation
(Year-on-year, percent)
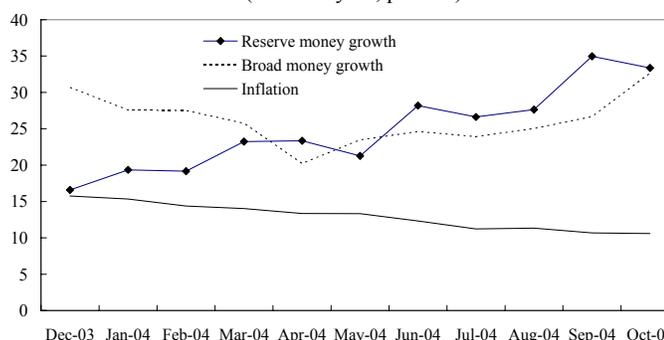
Source: National Bank of Moldova.

Monetary policy and competitiveness

38.   Preserving external competitiveness by preventing excessive exchange rate appreciation has received increasing importance as a monetary policy goal. Under these circumstances, two questions are relevant: (i) does Moldova have a competitiveness problem?; and (ii) what can and should monetary policy do about competitiveness?

(i)   While at first glance, competitiveness does not seem to be a major problem in Moldova, the export sector is clearly below its potential.[12] The large trade deficit is not, in itself, evidence that that the exchange rate is misaligned. Exports of goods and services are growing at a healthy pace. Import growth is much higher, but imports are fully financed by workers' remittances, suggesting that Moldova has a comparative advantage in exporting labor. Admittedly, the current account deficit is relatively large, but if the sizeable errors and omissions in the balance of payments were taken into account, the deficit would be much smaller, and declining. On the other hand, it is possible to argue that Moldova is not

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[12] For a more thorough analysis of Moldova's external competitiveness see Chapter III.

competitive in a more fundamental way. Considering that the economic environment is not conducive to private investment, and that work opportunities are scarce, pushing workers abroad, the export sector cannot fully develop its potential. In a more favorable business environment, small and medium-sized enterprises could thrive, leading to higher investment and increase private sector activity. Moldovan labor, skilled and unskilled, would then find better opportunities at home and exports of goods and services could replace exports of labor.

(ii)   There are several reasons why monetary policy cannot do much to improve competitiveness in Moldova. *First,* and most importantly, monetary policy only affects competitiveness in the short-term, and the end-result of attempts to prevent a nominal appreciation of the leu may be nothing but higher inflation and an unchanged real exchange rate down the line. Higher inflationary expectations imply that the effect of monetary policy on competitiveness is likely to be short-lived, and an undesirable wage-price spiral may develop. *Second,* considering that the exchange rate is likely to be undervalued (see Chapter III) risk of inflation may be a more important concern at this point. *Third,* Moldova as chosen to adopt a flexible exchange rate regime, and the NBM has clearly stated its intention to keep inflation down. It is important to live up to this commitment in order to build up credibility, and let the market, by and large, set the exchange rate. There may be room for interventions to smooth short-term fluctuations, but this should not be at the expense of accelerating inflation and damaging credibility.

39.   For the same reasons, there is a limit to what monetary policy can do to make Moldova a more attractive place to invest and work. While a depreciation would reduce the cost of labor, it is not likely to make Moldova more attractive, since there is not much slack in the labor market, and lower dollar-wages could not be sustained. Nominal lei-wages would have to increase and the end-result would only be higher inflation. What is more, to the extent that dollar-wages are lowered for a period, it will then become even more attractive to work abroad, which may encourage additional emigration. What is needed is higher productivity in Moldova, and higher real return on investment. That can only be achieved through structural policies to improve the business environment.

Fiscal impact

40.   The exodus of Moldovan labor force and the related inflows of remittances have shaped fiscal performance in recent years, and will likely impact on fiscal policy in the medium-to-long term. In the *short run,* fiscal performance has been affected through the impact of emigration and remittances on (i) the labor market; (ii) revenue collection; and (iii) the exchange rate. In the *long run,* emigration raises fiscal sustainability issues, through its impact on the demographic dependency ratio and on the contribution base.

(i)   Labor market changes: As emigration has reduced unemployment, and remittances have provided a social safety net to the poor, pressures on the budget related to unemployment have been alleviated (Figure 15).

Figure 15. Moldova: Unemployment, Unemployment Benefits, and Dependency Ratio

Emigration alleviated fiscal pressures from unemployment ...

... but worsened the dependency ratio.
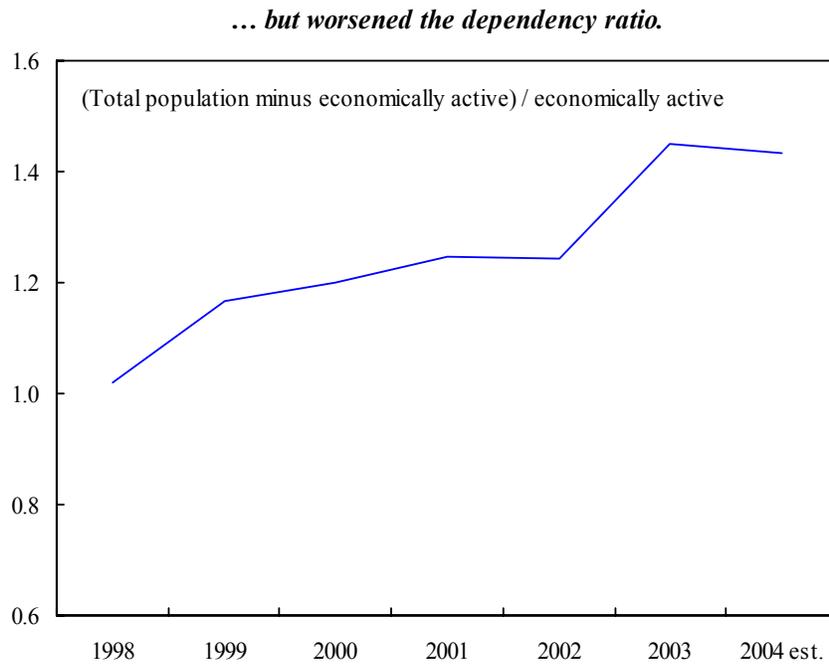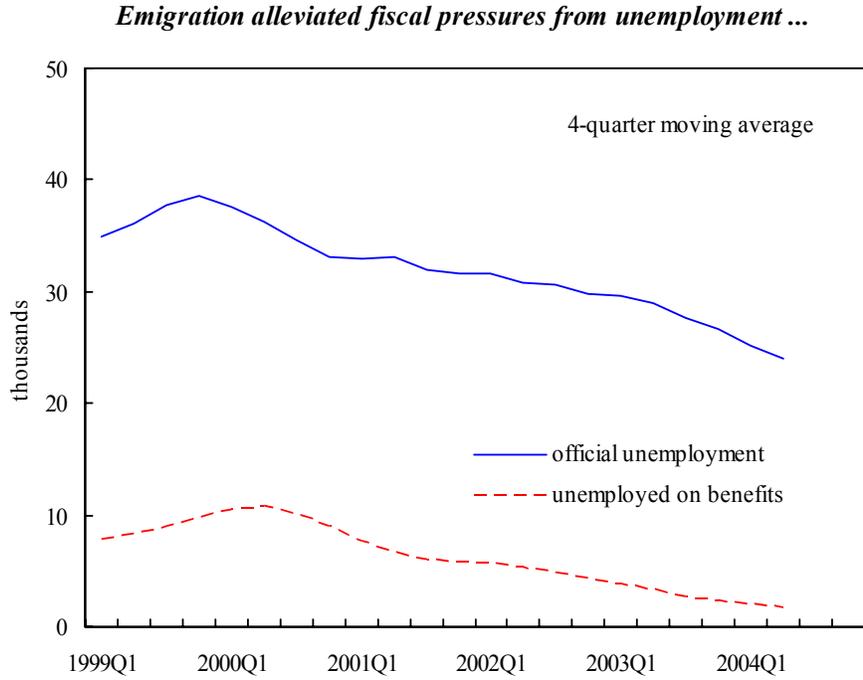
Sources: Moldovan authorities; and Fund staff estimates.

(ii)   Revenue collection: The revenue base has grown dependent on remittances. Overall collection has improved significantly over the last few years, largely owing to rising import taxes. Although the decline in labor force and employment has constrained growth in value added, and hence income subject to taxation, rising remittances inflows have boosted imports and import-related tax collection (Figure 16). This greater reliance on indirect taxation reflects a faster growth in domestic absorption relative to incomes generated in the domestic economy (or faster growth of national disposable income relative to GDP).[13]

(iii)   Exchange rate changes: The appreciation of the leu resulting from remittances inflows affects the government's fiscal position in the short run. To illustrate, a 10 percent appreciation of the leu in nominal effective terms would lead to a deterioration in the government fiscal position of about 0.6 percent of GDP.[14] This is a combination of a (negative) revenue impact of 0.9 percent of GDP, and a reduction in annual external debt service of 0.3 percent of GDP (assuming that all government spending is on domestically-produced goods). Allowing for a partial demand response (higher demand for imports, assuming price elasticity of 0.5), the net effect would be smaller—about 0.2 percent of GDP. In the long run, the initial net negative effect of an appreciation on the fiscal accounts would likely dissipate, particularly if the share of government spending on imports was relatively large.

41.   In the long-run, emigration is likely to affect the balance between the taxable base and the demand for social spending in the domestic economy. The shrinking contribution base resulting from emigration adds to the challenge of safeguarding the viability of Moldova's pension system in the context of an ageing population. The challenge is compounded by uncertainty about the ultimate size of the old-age population expected to depend on the Social Fund pension benefits, which will be determined by emigrants' decision whether or not to retire in Moldova. While the reform of the pension system initiated in 1999 was an important step toward restoring the system's short-term stability, securing its long-term fiscal sustainability is likely to necessitate adjustments in the future (see Box 1).

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[13] This trend is expected to be accentuated by the decision to phase in reductions in personal income and corporate profit tax rates in 2004-07 (see Chapter VI).

[14] All figures are on an annual basis.

Figure 16. Moldova: Tax Revenue Composition, 1999–2004

Reliance on indirect taxation increased ...

VAT, as percent of total tax revenue

... as domestic spending rose relative to domestic incomes ...

In percent of GDP

Imports of goods and services

Household consumption

... boosting import-related tax revenue.

VAT revenue from imports, in percent of total VAT revenue
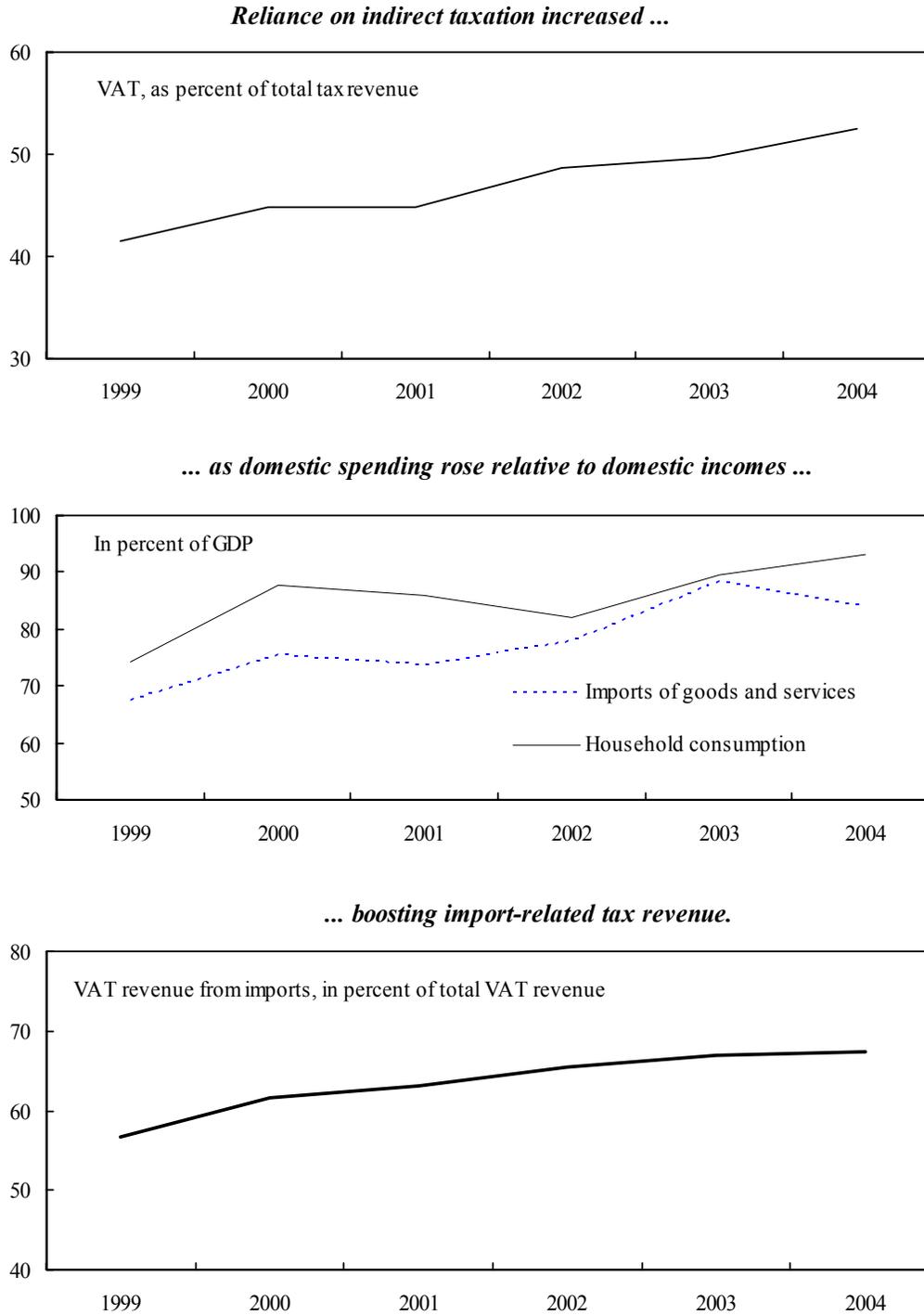
Sources: Moldovan authorities; and Fund staff calculations.

Box 1. Social Insurance and Fiscal Sustainability—Conceptual Framework

Background

Moldova's social insurance is administered through the Social Insurance Fund. The pay-as-you-go (PAYG) pension system is its largest component. The 1998 regional financial crisis impacted heavily on Moldova's costly and poorly targeted social protection system, which was already under severe strain. Problems emerged particularly in the pension system, including rising contribution arrears, delays in payments, lack of funds, and growth in in-kind payments.

A pension system reform, launched in 1999, laid the foundation for transforming the system into a sustainable insurance program. The main features of the new system include: a new benefit formula, which bases future pensions more on individual contributions than on reported wages and years of service; elimination of most early retirement privileges; a gradual increase in retirement age; and an increase in the minimum required contribution record.

While the reform helped restore the short-term financial stability of the system, ensuring its fiscal sustainability remains a challenge. PAYG systems need to ensure an ongoing balance between contributions and benefits. Demographic changes, including an aging population, as well as increases in life expectancy, require changes to contribution rate or to the system benefits. In the case of Moldova, by **raising the demographic dependency ratio, emigration is expected to place additional strain on the system's fiscal sustainability.**

Framework

In a PAYG system, current period benefits are financed from current revenues, typically via a payroll tax. For revenues to equal expenditure, the payroll tax rate (α) has to equal the pension bill divided by the wage bill, or the ratio of pensioners (M) to active contributors (N) times the replacement rate (β), where the replacement rate is defined as the ratio of the average pension to the average wage. Thus we can write

$$\alpha = \beta \cdot \frac{M}{N} \qquad\qquad (1)$$

Allowing the possibility of budget transfers, (1) becomes

$$\alpha = \beta \cdot \frac{M}{N} \cdot (1 - \tau) \qquad\qquad (2)$$

where τ is the ratio of budgetary transfers to pension expenditures ($\tau > 0$ implies transfers from the budget to the pension fund; $\tau < 0$ implies a transfer of the pension fund surplus to the budget). More generally, the ratio M/N can be expressed as a function of the demographic dependency ratio (M*/N*), where M* is the number of people 60 years and older and N* is the number of people between 15 and 59 years of age:

$$\alpha = \beta \cdot \gamma \cdot \frac{M^*}{N^*} \cdot (1 - \tau) \qquad\qquad (3)$$

where γ is termed as the *pension system coverage ratio*, with its value depending on the maturity of the system, retirement policies, labor force participation rates and other labor market conditions.

Source: Castello-Branco (1998).

42.   To illustrate the possible adjustments in the pension system as a response to demographic changes, two alternative scenarios are presented in Table 1 below. The scenarios are conceived as a change relative to the situation projected for 2005. Under Scenario A, the number of contributors would decline by 10 percent and the number of beneficiaries would rise by 10 percent. Under Scenario B, the number of contributors would also decline by 10 percent (again, relative to 2005), but the number of beneficiaries would increase by 50 percent, simulating the return of a large number of future retirees to Moldova. As outlined in Box 1, under a PAYG system, an adverse demographic development—such as an increase in the ratio of the number of beneficiaries to contributors (M/N)—necessitates an adjustment in policy parameters—either the contribution rate (α), the replacement rate (β), or the fiscal transfer rate (τ)—to preserve the long-term sustainability of the system. Table 1 shows the required response in these three policy parameters.[15]

Table 1. Moldova—Pension System's Response to Demographic Changes 1/

	Base (2005)	Scenario A	Scenario B
M/N	1.21	1.48	1.82
α	0.29	0.35	0.44
β	0.26	0.21	0.17
τ	0.08	0.25	0.39

1/ The implied transfer from the budget in 2005 reflects the need for additional financing of the Social Fund, currently provided through drawndowns of accumulated deposits.

43.   The scenarios highlight the trade-offs that may need to be contemplated in response to possible demographic shifts. If the required adjustment were shouldered fully by contributors, the contribution rate would have to rise from 29 percent to 35 percent in Scenario A, and to 44 percent in Scenario B. Alternatively, the replacement rate would need to fall to 21 and 17 percent in Scenarios A and B, respectively, from 26 percent in the base year. Without changes in the contribution and replacement rates, the state budget would need to increase its transfers to the pension plan from 8 percent of pension outlays to 25 and 39 percent under Scenarios A and B, respectively.

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[15] The simulations assume that only one parameter at a time is selected for adjustment. If the necessary adjustment were to be achieved by adjusting all parameters simultaneously, the required change in each parameter would be less.

E. Policy Implications

Structural policies

44.   Structural policies will be key when addressing most, if not all, policy issues associated with workers' remittances. To moderate, and eventually reverse the current emigration trend and Moldova's increasing dependence on workers' remittances, establishing a good business environment is crucial. An improved business environment would (i) strengthen the incentives for recipients to invest in Moldova; (ii) increase the expected return on investment in Moldova, encouraging FDI and bringing much-needed know-how; and (iii) make it more likely for the higher educated labor force to seek and find work opportunities in Moldova. Many structural policies, such as legal reforms and anti-corruption measures would, furthermore, directly improve the quality of life and make it more desirable to live in Moldova. The fact that migration and workers' remittances are both on a rising trend is not an exogenous shock, but is endogenously linked to the economic environment in Moldova. To bring about a change, the environment needs to be improved.

45.   It has to be recognized that migration and remittances are very likely to continue to be important in Moldova, even with a much improved economic climate. The upward trend may end and even be reversed, but there will always be attractive opportunities abroad for many Moldovans, as long as barriers to work in other countries (regulatory, logistical, financial, psychological etc.) continue to be low. With reasonable economic prospects in Moldova, the difference would be that workers would leave to find better opportunities abroad rather than to avoid the problems at home, which appears to be the case today.

Monetary policy

46.   Supporting structural policies will be necessary to reduce the pressure on monetary policy. Contributing to create a stable macroeconomic environment will be a big challenge for monetary policy if structural policies continue to lag. As argued above, monetary policy cannot fundamentally change Moldova's competitiveness; only structural reforms can. Monetary policy is important in creating a stable macroeconomic environment, which certainly is important for the investment climate, but without effective structural policies, the effectiveness of monetary policy will continue to be severely hampered.

47.   Under these circumstances, a flexible exchange rate regime, paired with a clear focus on low inflation as the overriding goal of monetary policy, appears to be a reasonable strategy ahead. Moldova is sensitive to real exogenous shocks (e.g. good or bad harvests, and changing economic conditions in the countries where remittances originate and exports are destined to); a flexible exchange rate regime helps in absorbing these shocks. Maybe more importantly, there is no clear better alternative at this juncture. Switching to a fixed exchange rate regime would require a clear commitment to policies consistent with such arrangement, not only from the NBM, but also from the government, and it would have to be backed up by strong political support. At this point, that does not appear to be a realistic alternative, and such a strategy would be risky. Of course, a flexible exchange rate regime also works better

the more prudent and predictable economic policies are, but to give a false sense of stability by fixing the exchange rate could lead to dangerous imbalances. It is probably better if economic agents in Moldova learn how to cope with the existing uncertainties. In the medium term, a peg to the Euro or a currency basket such as the SDR could be a viable option, in particular if Moldova moves toward closer integration with the EU.

48.   Low inflation should be the overriding goal of monetary policy and economic policies should be designed to be consistent with the publicly stated inflation goals. While at this point, Moldova does not fulfill all the requirements for a successful implementation of an inflation targeting regime, focusing on inflation seems to be the best option for monetary policy.[16] Not only the required institutional commitment to price stability seems to be absent, but money demand is very uncertain, making it difficult to predict the effects of monetary policy on inflation. Still, since a fixed exchange rate regime does not appear as a viable option, focusing on low inflation seems to be the best alternative. Combined with strong structural policies, prudent fiscal policies, and increased *de facto* and *de jure* independence of the NBM, such strategy could be successful.

Fiscal policy

49.   The short-term beneficial effects of emigration for the government financial position offer a margin for maneuver for a countercyclical macroeconomic policy. Emigration, by alleviating unemployment and providing a safety net to the population, has eased pressures on the budget, while boosting consumption- and import-related tax revenue collection. This newly-created cushion provides an opportunity to strengthen fiscal policy's countercyclical role without jeopardizing medium-term fiscal sustainability. This strategy will require that tax revenue increases are not automatically utilized for new spending initiatives. Rather, it may be appropriate to increase fiscal saving when the domestic economy is overheating and inflationary pressures are on the rise. Thus, fiscal policy would lend more effective support to the central bank's efforts to control inflation.

50.   While there is uncertainty about the future evolution of the number of contributors and beneficiaries in the pension system, the analysis above suggest some practical steps that could be taken to strengthen its viability:

- Efforts should be directed at *broadening the contribution base* by bringing a greater number of contributors into the system. The government decision to lower contribution rates (from 30 to 28 percent by 2006) is aimed at encouraging greater participation in the plan. In addition, the authorities intend to engage the business sector in a debate over Social Fund reform, including by seeking ways to broaden the contribution base, while lowering rates.

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[16] See Mishkin (2004) for a discussion of the requirements for inflation targeting.

- The *link between contributions and benefits should be strengthened*. This was one of the main objectives of Moldova's pension reform, to be achieved initially through a blended system, where benefits would depend increasingly on past contributions. However, the weight of past contributions in determining pensions remains relatively small. Greater weighting of past contributions would make the link between contributions and benefits more transparent, encouraging greater participation in the scheme. It would also signal to those who choose to stay outside the system—including those who have decided to seek employment abroad—that they would need to assume greater responsibility for financing their own retirement.

F. Conclusions

51.   Clearly, labor emigration and workers' remittances have a very large impact on the Moldovan economy; **structural policies** will be key when addressing most, if not all, related policy issues. To end the upward emigration trend and the increasing dependence on workers' remittances, establishing a good business environment is crucial. Monetary and fiscal stabilization policies will only work if the basic policy direction is sound, with effective structural reform implementation laying the ground for robust economic growth.

52.   **Monetary policy** cannot fundamentally change long-term competitiveness without supporting structural reforms. At this point, a strategy to maintain a flexible exchange rate regime, paired with a clear focus on low inflation as the overriding goal of monetary policy appears to be a reasonable monetary policy alternative. **Fiscal policy** faces both short-term and long term challenges on account of emigration and remittances. The short-term beneficial effects provide an opportunity to strengthen fiscal policy's countercyclical role. In the longer run, the pension system is likely to come under pressure; therefore, it will be important to improve the current system by broadening the contribution base and strengthening the link between contributions and benefits.

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II. MIGRATION AND REMITTANCES—A MICRO PERSPECTIVE[17]

A. Introduction

53.   Although nobody knows for sure how many Moldovans have emigrated, it is generally agreed that their number has increased markedly in the last few years. Available official estimates confirm that emigration is very large when compared to an active population of 1,474,000 people (in 2003): (i) the Department of Migration estimated the number of migrants at around 600,000 as of August 2004[18]; and (ii) data on population statistics produced the Department of Statistics and Sociology (DSS) indicate that 367,000 Moldovans were working abroad in the third quarter of 2004, compared to 114,000 in the third quarter of 1999. Beyond these official sources, a recent survey found that the approximate number of Moldovans working or looking for a job abroad during January–September 2003 fits in the interval 265,000–285,000, consistent with the DSS estimates.[19] This survey also found that almost 83 percent of Moldovans working or looking for a job abroad during January–September 2003 emigrated after 1999. Many migrants go abroad only during spring and summer to work in construction and agriculture. The DSS population data reflect this seasonality within a clear overall upward trend (Figure 1).

Figure 1. Moldova: Number of People Working Abroad 1/
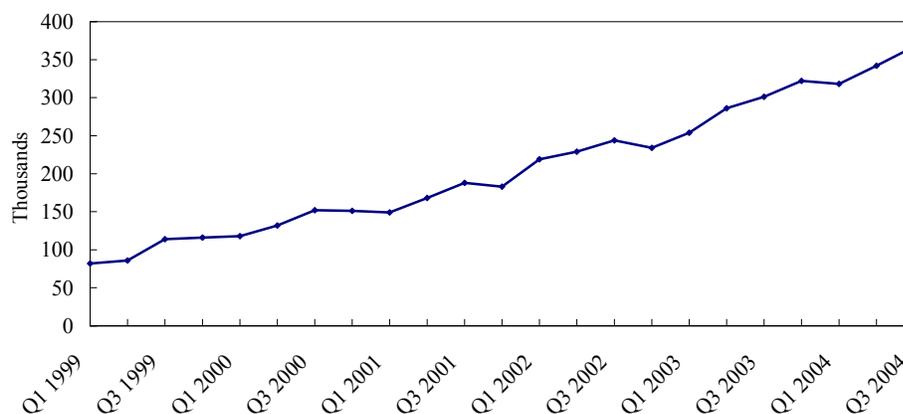
Source: Source: Department of Statistics and Sociology (Households Budget Survey).
1/ As declared by their families.

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[17] Prepared by Edgardo Ruggiero.

[18] Săptămîna (2004).

[19] Ghencea and Gudumac (2004).

54.   As discussed in Chapter I, the magnitude of migration and workers' remittances, and the speed at which both processes have developed, have important economic and social consequences. On the social front, remittances have become the most extensive and effective social assistance and safety net mechanism in Moldova. Officially-estimated remittances reached $484 million in 2003, far higher than the $190 million spent on social assistance and pensions by the consolidated government. On the other hand, migration has created some social problems that are only now starting to be recognized.[20]

55.   This chapter reports on the results of a *survey of migration and remittances in Moldova*. The survey was sponsored by the Chisinau offices of the International Office for Migration and the Food Security Program of the European Commission, and developed by the survey agency (CBS-AXA) in cooperation with the IMF resident representative office and the two sponsors. CBS-AXA conducted the interviews, the focus groups, and the survey itself during the period September-November 2004.[21] The survey was designed to shed light on the number of migrants and their remittances and on the economic and social consequences of migration. This chapter does not cover a range of non-economic issues explored by the survey that are of more specific interest to the two agencies that sponsored the study.

56.   This chapter is organized as follows. Section B reviews some stylized facts on remittances on the basis of current literature, while Section C discusses some specific characteristics of Moldova that encourage emigration. Section D presents the results of the survey on migration and remittances. Section E draws some conclusions and policy implications.

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[20] The Ministry of Education estimates that, as a result of migration, during the 2004/2005 academic year 23,000 Moldovan children were left without both parents and under the care of relatives, older siblings, or friends (Pro-Didactica, 2004).

[21] The research was carried out in two stages. The first stage was a qualitative study including focus groups and in-depth interviews with migrants and their family members, and sector experts (e.g., train and bus conductors; employees of relevant government agencies). Focus group were used to gains insights in the behavior of migrants and their family. This allowed the survey agency to better define the questionnaire for interviewees and the interview guide for interviewers. The second stage was a public opinion poll, held in October 2004, based on a sample of 3,714 households, of which 1,006 with at least one migrant. The sample was stratified (e.g., urban and rural localities; size of localities) and randomly chosen.

B. Remittances: Stylized Facts[22]

57.   The *literature on the motivation behind remittances* primarily considers migrants as altruistic individuals whose utility function takes into account the consumption of the household members who remained in the home country. Other possible motivations include attachment to the home country, and portfolio diversification. Attachment to the home country can be viewed as a willingness to maintain ties at home through non-financial assets such as real estate and business investment, often managed by relatives. If the level of remittances is largely driven by altruism and attachment, then it is reasonable to expect remittances flows to be fairly stable and, given appropriate economic policies, partly channeled toward business investment. Moreover, the altruistic migrant would be expected to react to an economic crisis at home, or a job loss in the household, by raising the amount of remittances. Thus, remittance flows by altruistic migrants tend to be predictable and countercyclical—a blessing for policymakers. By contrast, a migrant who cares about diversifying his portfolio would tend to equalize returns on financial and fixed assets in his host country and his home country. These remittances would be sensitive to interest rate differentials, political risk, and uncertainty, and would tend to be pro-cyclical. In short, they behave like capital flows. As such, they are more problematic for policymakers, as they carry the usual risk associated with capital flow volatility.

58.   Typically, the literature on the causes of remittances has modeled their level on the basis of demographic, economic, and financial variables. Economic variables describe the economic situation facing the migrant and the family, such as wages and income in the host and home country. Demographic variables describe the strength of the family ties. For example, the longer the migrant stays in his host country, the lower his ties with his home country, thus the lower the remitted amounts. Financial variables attempt to capture portfolio allocation behavior. According to the literature, the most reliable stylized fact from the empirical literature on the cause of remittances is that the demographic and economic variables tend to be significant in most model specifications, while the financial variables' significance depends on the sample size and specification.[23]

59.   The *literature on the use of remittances* explores the purposes for which funds are remitted to the home country. Three stylized facts emerge from this literature (Chami and others, 2003): (i) a significant portion (often the majority) of remittances is spent on consumption; (ii) a significant (but smaller) portion of remittances is channeled to savings or investments (houses, land, and related expenditures, such as renovations); and (iii) such savings and investments are not necessarily productive for the overall economy, since the purchase of a house or land is not in itself a productive activity.

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[22] For a succinct and comprehensive review of the literature on remittances see Bouhga-Hagbe (2004).

[23] See Chami, R., Fullenkamp, C., and Jahjah, S. (2003).

C. Migration: Stylized Facts for Moldova

60.   Moldova demographics and economic structure make it an ideal candidate for a high level of emigration. Not only does it have the highest share of non-urban population in Europe and the Former Soviet Union (FSU), except for three countries in Central Asia, but its population density is second only to a group of highly-developed countries in Western Europe, Poland, and the Czech Republic in Central Europe, and Armenia in the Former Soviet Union (Figures 2a and 2b). Prior to independence, a high percentage of Moldovans lived in essentially rural communities which, in turn, relied on the economic ties within the FSU. The breakup of these ties and the relative price shocks that ensued generated excess labor and a painful process of labor shedding, which could not be easily absorbed in a country already characterized by high population density and with only the capital—Chisinau—able to offer employment opportunities to internal migrants.

Figure 2a. Population Density, 2001 1/
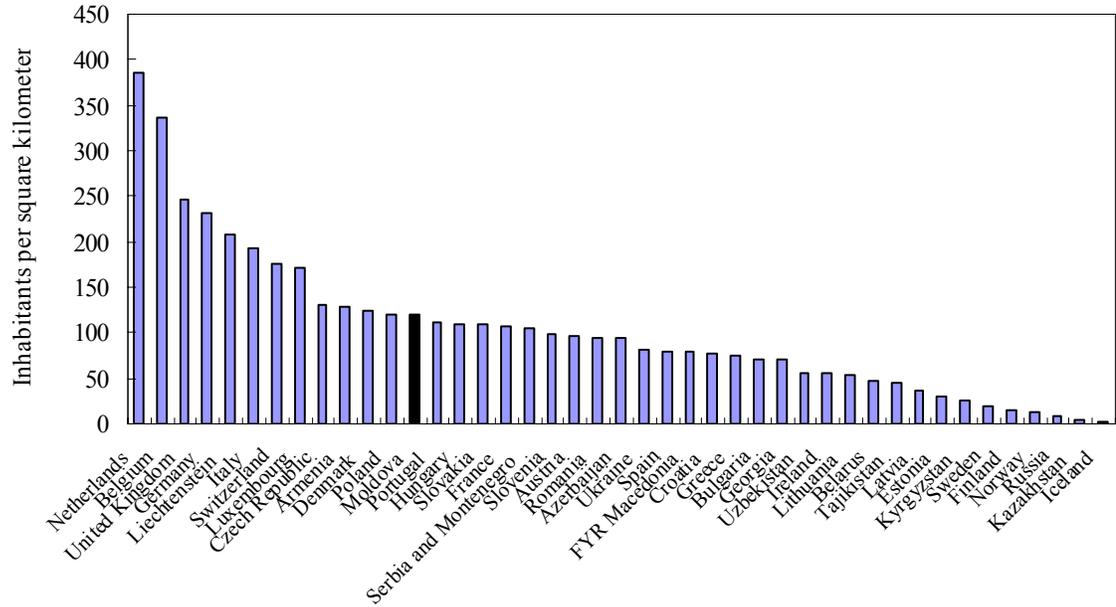
Figure 2b. Share of Urban Population, 2002
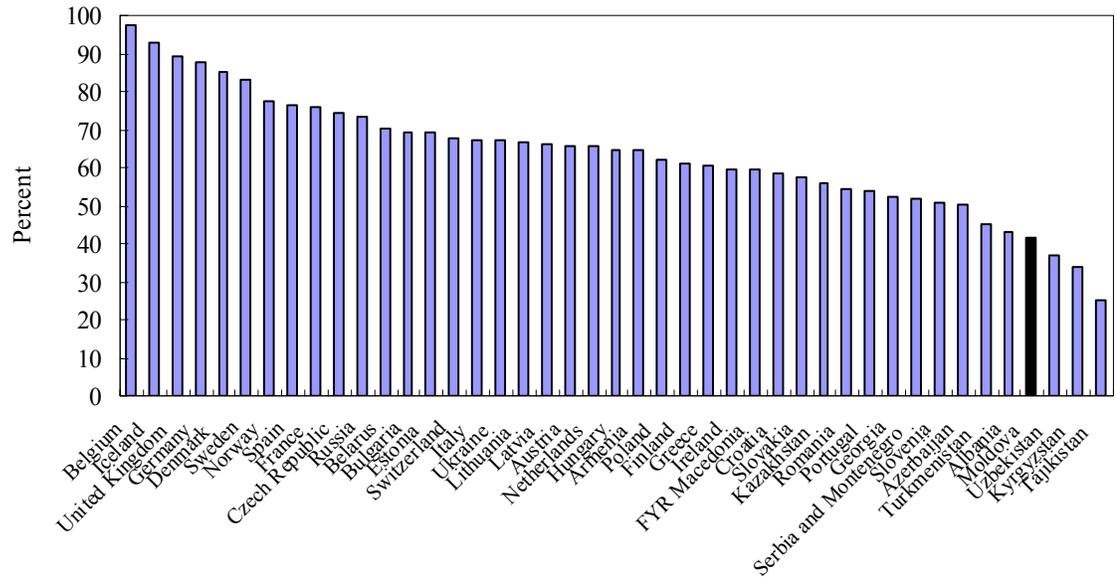
Source: UNDP Human Development Report 2004.
1/ Data for Moldova include Transnistria.

61.   These structural factors were exacerbated by the existence of several small towns whose economic wellbeing relied on a single large enterprise. These enterprises were not competitive and soon became idle, driving their population into poverty. In 2002, 63 percent of residents of small towns were poor, compared to 52 percent of rural residents and 29 percent of people living in large cities (World Bank, 2004). Small-town residents do not benefit from the better employment opportunities of large cities, nor from the safety net of small landholdings of rural residents. Although the poverty risk is highest in small towns, since the majority of the population lives in rural areas, rural poverty predominates—68 percent of all Moldovan poor lived in rural areas in 2002. Poverty became deeper and more severe during the recession that followed the 1998 regional crisis, although the depth and severity of poverty began to recede with the subsequent economic recovery (Figure 3). Migration appears as a rational coping mechanism under these circumstances.

Figure 3. Moldova: Real GDP and Poverty Rate 1/
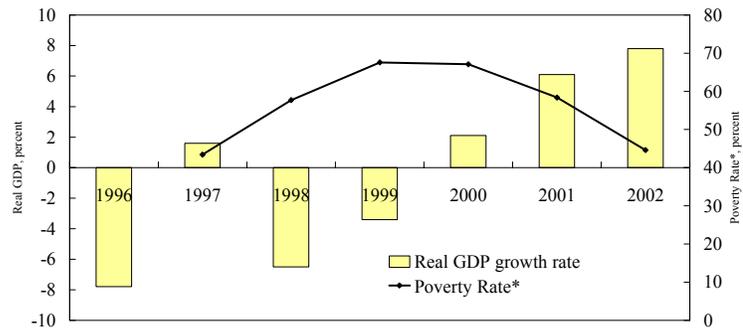
Source: Department of Statistics and Sociology (Households Budget Survey).
1/ Defined with respect to international line ($2.15 in PPP terms per day).

D. Survey Results

Migrants' profile

62.   CBS-AXA (2005) estimates a migrant *contingent* of at least 571,000 people at the time of the survey, consistent with the figure quoted by the Department on Migration. These migrants are divided in two groups. The first is formed by some 399,000 Moldovans who were working abroad at the time of the survey. The second consists of about 171,000 people who were in Moldova at the time of the survey, but had worked abroad at least once during 2003–2004 and intended to migrate again either on a permanent or a seasonal basis in the near future.[24] These two groups of migrants together form a migrant contingent equivalent to 38.7 percent of the economically active population at end-2003. The advantage of using the concept of migrant *contingent*, rather than the number of *emigrants at any point in time*, is that the former is independent from the strong seasonality of Moldovan migration flows. This is an important innovation with respect to other surveys, whose estimates vary according to the period of the year when they are undertaken.

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[24] These are either seasonal migrants—the largest component—or migrants that are momentarily in Moldova to retrieve documents, finalize emigration papers, or take care of personal or family affairs or business; or migrants that have to spend some time in their home country to get a visa renewal (e.g., migrants to Turkey).

63.   However, the migrant *potential* is higher than the migrant *contingent*. At the time of the survey (October 2004), 119,000 families who had not had any member working abroad during 2003–2004 expressed their intention, or revealed that preparations were under way, to send at least one member to work abroad within the next six months to one year. Thus, the migrant potential is estimated to be as high as 690,000 (a migrant contingent of 571,000 plus 119,000 intending to depart for the first time within the next year), corresponding to 46.8 percent of the economically active population at end-2003. By any account, these are large figures and suggest that the Moldovan labor market may come under additional strain.

64.   The distribution of the migrant contingent by gender and age provides interesting insights about the profile of migrants. As shown in Figure 4, the majority of people in the migrant contingent are men (about 66 percent), and the largest portion of migrants (75.3 percent) belongs to the most economically active age groups (21–40 years old).[25] On average, male migrants are younger than female migrants, reflecting a specialization of men in physical work and of women in household chores in host countries. While about 62 percent of migrants are married, there is a clear correlation between their marital status and their length of stay abroad: married migrants migrate less permanently than single or divorced migrants.[26] A preponderance of male migrants is characteristic of CIS countries, such as Russia and Ukraine, and some Western European countries (Germany, Portugal, and Belgium), reflecting demand for services in construction, reparation industry, and agriculture (Figure 5). Female migrants prevail in Cyprus, Greece, Turkey, Italy, Spain, reflecting demand from the tourism sector (e.g., Cyprus) and for household help (e.g., Italy and Turkey).

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[25] Unless specified otherwise, figures in the remainder of the paper refer to the migrant contingent.

[26] Widowers also migrate less permanently than divorced migrants. This suggests a relation of causality between migration and the divorce rate, a fact that is confirmed by the qualitative research.

Figure 4. Moldova: Migrant Contingent, Distribution by Gender and Age
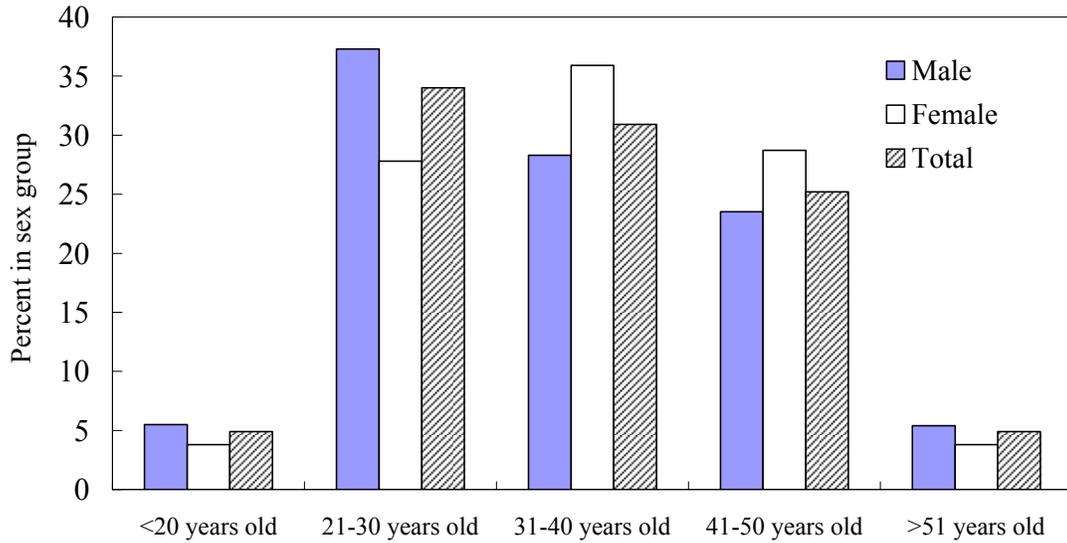
Source: CBS-AXA, 2005.

Figure 5. Moldova: Migrant Contingent, Country Distribution by Gender
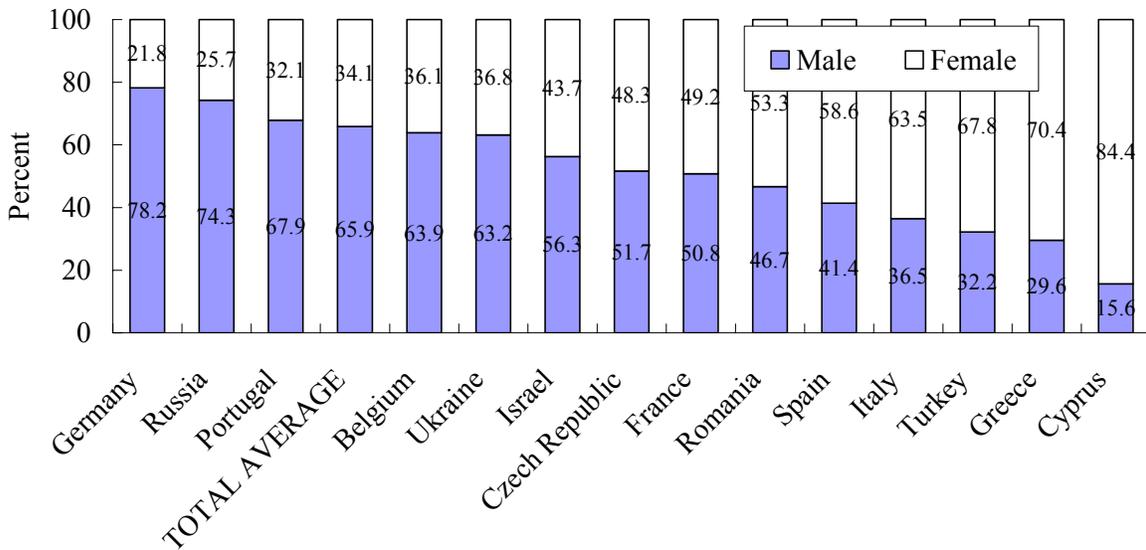
Source: CBS-AXA, 2005.

65.   Migration does not seem to have caused significant brain drain (Figure 6). Less than 20 percent of migrants have a university education, compared to about 28 percent in the Moldovan working population. Most migrants with lower education go to CIS countries (notably Russia and Ukraine), where salaries are lower. Higher education workers mainly migrate to Western European countries, where salaries are higher (see paragraph 70).

Figure 6. Education Level of Migrants and Working Population
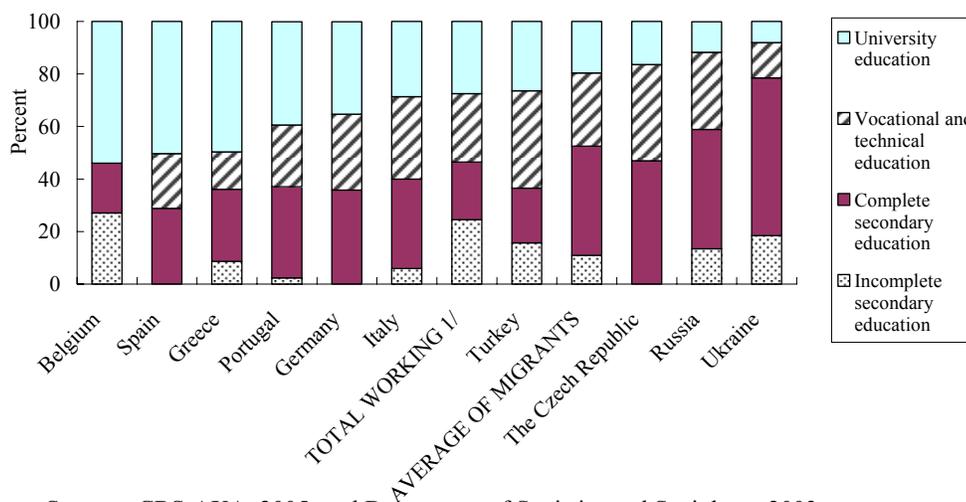
Sources: CBS-AXA, 2005; and Department of Statistics and Sociology, 2003.
1/ Share of educated in total working population.

66.   Most Moldovan migrants have not moved permanently abroad, although they go abroad repeatedly. At the time of the survey, about 32 percent of migrants resided in the host country (Table 1). Another 27 percent has either moved abroad less than a year before, or travel abroad routinely for periods no longer than a year. In addition, another 41 percent are seasonal migrants, who migrate during specific periods of the year, or go abroad when needed to find supplementary sources of revenue.[27] These results suggest that attachment to the home country may be important for Moldovan migrants. In fact, the focus groups indicate that the main reasons non-permanent migrants return home is to remain in touch with the family, procure documents, and renew visas. Table 1 also shows that the majority of men are seasonal migrants, while the majority of women are permanent migrants. Emigrants departing to Western Europe tend to establish their residence there, while emigrants to CIS countries seek work on a seasonal or non-permanent basis (Figure 7). Ukraine and Russia attract mostly seasonal migrants.

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[27] Permanent residents are those migrants that, from the balance of payments point of view, transfer *remittances*. The second and third categories are essentially exporting services and, from the balance of payments point of view, their transfers are classified as *compensation of employees.*

Table 1. Category and Gender of Migrants

(In percent of total by gender)

	Permanent, more than 1 year without returning	Permanent, less than 1 year	Seasonal, a few months
Total	32.3	26.9	40.8
Men	26.3	25.3	48.4
Women	44.3	30.1	25.5

Source: CBS-AXA, 2005

Figure 7. Moldova: Geographical Distribution of Permanent,
Non-Permanent and Seasonal Migrants
(in percent of total in each country)
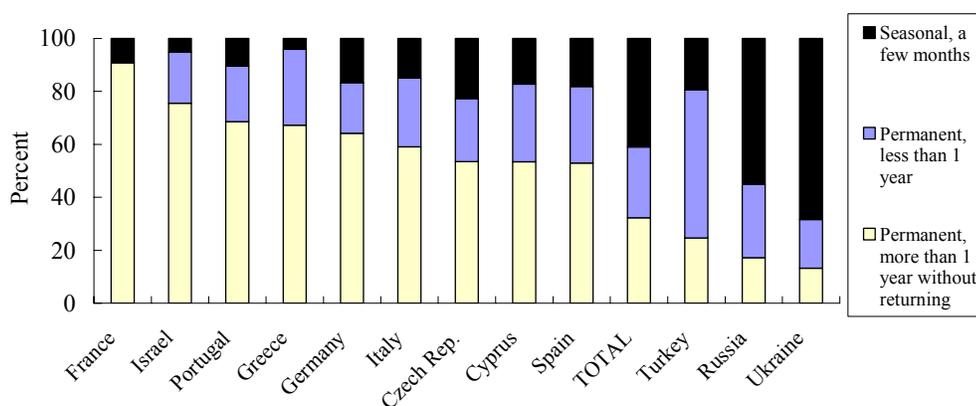
Source: CBS-AXA, 2005.

67.   This pattern may not change in the short term, as only a minority of current Moldovan migrants intends to move abroad permanently. Only 6.4 percent of interviewed migrants, currently in Moldova, intends to move permanently abroad, while 67.3 percent of them consider seeking employment abroad again to save money and return to their home country. The answers given by the family members of migrants currently abroad are broadly consistent with those given by the groups of migrants currently in Moldova. Family members expect 12 percent of workers to move abroad permanently, and 65 percent to return to Moldova after accumulating enough money to meet their specific needs.

68.   In the medium term, however, more people may migrate permanently. If given the opportunity, more Moldovans, particularly the young ones, would migrate, and many of these would do so permanently. According to a poll run in November 2004 by the International Republican Institute (IRI) and the Baltics Survey (2004), 25 percent of Moldovans would migrate permanently and another 30 percent would migrate temporarily, if given the chance. This inclination is particularly strong among people below 30 years of age: 76 percent would leave Moldova, if they had an opportunity to do so; of these,

43 percent would migrate permanently. These figures suggest that the number of people willing to leave Moldova remains high and that, unless economic opportunities are not created locally, migration is likely to continue.

Decision to migrate

69.   Migration started in earnest after the 1998 regional crisis, but accelerated during the last three years. While 29 percent of migrants went abroad for the first time in 1999–2001, 54 percent of migrants left in 2002–2004 (Figure 8). [28] Thus, 83 percent of migrants departed for the first time after 1998. Recently, there is a clear tendency for younger people to migrate. Almost 45 percent of the migrants below 20 years of age departed in 2004, consistent with the finding by IRI and the Baltic Survey (2004) that the desire to migrate is highest among people below 30 years of age.

Figure 8. Moldova: The Year of First Departure 1/
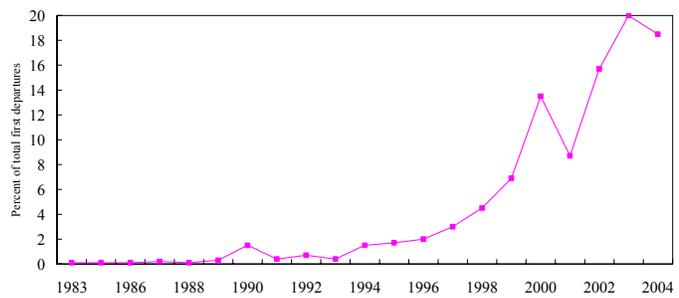
Source: CBS-AXA, 2005.
1/ The estimates for 2004 exclude the last 2 months of the year.

70.   The massive and accelerating emigration since the late 1990s is not only due to *push* factors associated to the 1998 crisis or lack of employment opportunities in recent years; some *pull* factors are also at play. The qualitative research confirms the findings in other high-emigration countries:[29]once colonies of Moldovans are established abroad, relatives and friends back home find it easier to join the migrants in the host country—usually in the same city and, at least temporarily on arrival, in the same living quarters—thanks to the informational, logistical and financial support they provide. Forty-six percent of the interviewed mentioned that having relatives and friends abroad encouraged them to migrate. The interviews also reveal that, particularly in small communities, imitation factors can be extremely important in triggering the decision to activate the informal network of Moldovans living abroad.

71.   Most migrants decided to leave to satisfy basic economic needs. For forty-four percent of them, the primary objective is to make enough money to meet current consumption needs (e.g., food, clothes, and basic household commodities), while for another 21 percent, it is debt repayment. For 19 percent of migrants, the primary reason to migrate is broadly-defined household investments or savings (e.g., car, house purchase or

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[28] The slowdown in emigration 2001 as shown in Figure 8, reflects tighter police controls in Russia, in the aftermath of terrorist acts related to the second Chechen war, and lower emigration to Italy, probably owing to tighter controls before the enactment of a new immigration law in June 2002.

[29] Rapoport and Docquier (2003).

renovation, wedding/funerals, bank deposits); for another 11 percent, it is spending on education, health, or household durables. Only 1 percent of migrants mention business investment in any form (e.g., land, farm animals, machinery, kiosks, mini-buses). The ranking of responses changes when asked for a second reason for leaving. While meeting current consumption remains the most frequently mentioned reason for emigrating (33 percent), household investments (29 percent) and spending on education and health (21 percent) become much more relevant. Debt repayment drops dramatically (7 percent) and business investment, though increasing, remains marginal (4 percent).

72.   These findings are confirmed by the focus groups and experts' interviews. Among the most frequently-mentioned reasons for migration are insufficient money to meet basic needs; lack of a decent place to live; joblessness; poorly-paid job; and the need to pay for the education of a family member. Among young people, a decisive factor is the lack of opportunities and the "life essentials" to raise a family.

73.   The majority of Moldovan migrants work in CIS countries (Figure 9). Almost 60 percent of migrants heads for Russia, with Italy a distant second (19 percent), followed by Portugal (5 percent) and Greece (almost 3 percent). In a confirmation that *pull* factors are important to determine how emigration flows are distributed among host countries, all migrants—irrespective of country of destination—claim that the most important factor in choosing a host country is the presence of relatives or friends in such country, followed by the cost of departure, the advice or information received on that particular country, and its working conditions.

Figure 9. Main Migration Directions

Western Europe and Israel
29%

Central and South-East
Europe
7%

Other
3%

CIS
61%
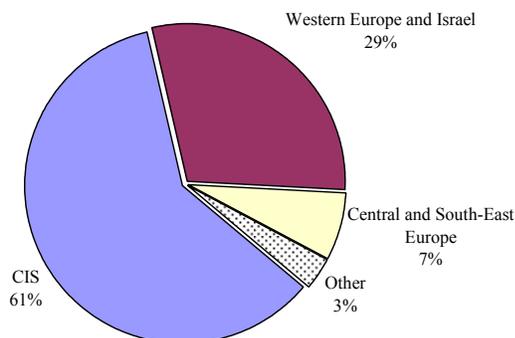
Western Europe: Italy, Portugal, Spain, France, Germany, Belgium.
Central and South-East Europe: Romania, Turkey, Greece, Czech Republic, Cyprus.

74.   Travel costs vary widely by country of destination and channel of migration (Box 1). The low cost of departure was mentioned as a particularly important reason by migrants that chose CIS countries, while most migrants to Western Europe and Turkey highlighted the importance of good work conditions. The interviews confirm a clear relation between the income level of the family of origin and the choice of country of destination—i.e., migrants from better-off families can afford to settle in countries that are expensive to reach, which are usually also those where wages are higher.

Box 1: Travel Costs and Migration Channels

Travel costs vary depending on the country of destination and the channel chosen to migrate. The average cost (including ticket, document preparation, and visa) to depart for Russia is $96, compared to $422 for Turkey, $1,922 for Portugal, $2,048 for Italy, and $2,300 for Spain.

A large component of emigration costs for more expensive destination countries (typically, Western European countries) are the fees paid to middlemen or travel agencies that take care of all legal documents, visas, and transportation to the target country. Both CBS-AXA and Genchea and Gudumac (2004) find that often the migrant enters the country legally with a tourist or cultural exchange visa but remains illegally.

On average, a person spends $658 to emigrate, though the majority of migrants spend $100 or less (these are typically seasonal and non-permanent workers to CIS countries). However, since these figures reflect the costs at time of the first departure, they underestimate how much Moldovans spend today to seek work abroad. Costs have increased considerably, and are now quoted mostly in Euros.

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75.   Fifty percent of migrants financed some or all of the departure expenses from their own savings, but many also borrowed. Many migrants borrowed some or all the required amounts for traveling from relatives or friends either living in Moldova (31 percent) or abroad (13 percent). A smaller portion borrowed from moneylenders (10 percent) or from a bank (2 percent). The choice of the financing combination very much depends on the departing costs: while the vast majority of migrants to CIS countries self-financed their departure, people that left to Western European countries borrowed money more often— usually twice more often than average. The interviews reveal that several migrants worked initially in CIS countries, especially in Russia, to accumulate money to finance their trip to Western Europe.

76.   Borrowed money was quickly returned. Eighty-percent of those that borrowed to finance their trip have already repaid the loan. Almost all of those that have not yet liquidated their debt migrated in 2004 and 2003. Of those who repaid their debts, two-thirds did so within 6 months and another 11 percent within 1 year. Thus, migration seems to be an investment with quick-yielding returns.

Earnings, contribution to family income, and remittances

77.   The average monthly earnings of migrants are estimated at $543. Earnings vary
according to the host country and the type of migrant. Migrants to CIS countries get the
lowest earnings, while migrants to Western European countries and Israel have the highest
earning levels (Figure 10). Permanent migrants earn significantly more ($741) than non-
permanent ($500) or seasonal ($409) migrants. This finding is consistent with Ghencea and
Gudumac (2004), who observe that earning levels increase with the duration of permanence
abroad. In addition, they find that earning levels increase with the level of education of the
migrant and the nature of the job (legal or not). They also find that gender, once other
factors are taken into account, does not explain differences in retribution levels.

Figure 10. Earnings Received By Migrants 1/
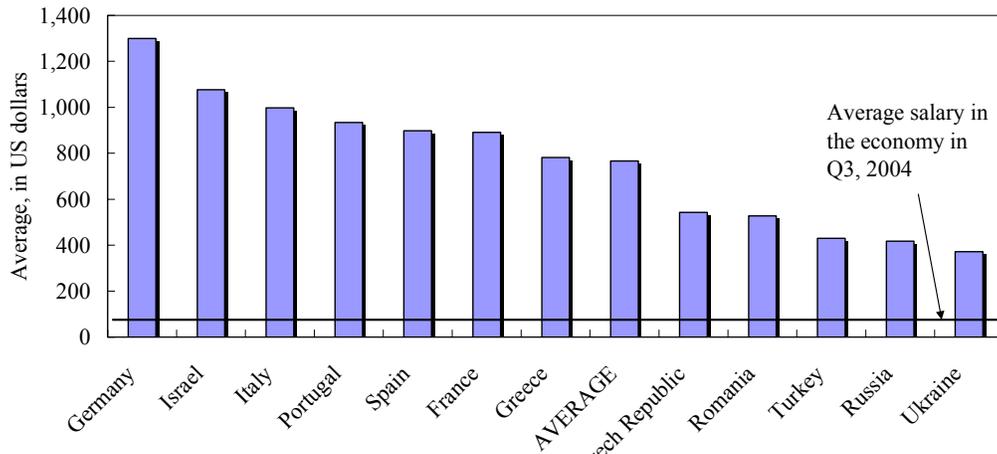
Sources: CBS-AXA, 2005; and Department of Statistics and Sociology.
1/ Reference period is 2003-2004.

78.   Most migrants transfer significant portions of their earnings home, often shortly
after departure. Almost 81 percent of migrants send money to their family. Those that do
not make remittances are either recent migrants (46 percent of those who do not send
money emigrated for the first time in 2004) or young migrants that often have no family
obligations and are probably accumulating savings either to set up their own family or to
settle down abroad (about 53 percent of those who do not send money are below 30 years
of age). Those that do transfer money home, tend to send large portions of their earnings—
71 percent send more than fifty percent of their earnings (Figure 11). Forty-nine percent of
migrants sent money within three months of departure. People departing to Russia, Turkey,
Italy, Spain, and the Czech Republic transfer money faster than people departing to other
countries, thus confirming the interviews' findings that it is easier to find a job in these
countries.

79.   Informal channels are the most common method used to transfer money. Forty-four percent of migrants use informal methods more often: train or bus conductors, bringing money personally, asking relatives and friends to carry money, or even sending money hidden in parcels handed to bus drivers. Transporting own funds is the most frequently used method (17 percent of total preferences).

Figure 11. Moldova: Percent of Earnings Sent to the Family

Source: CBS-AXA, 2005.

Thirty-four percent of migrants prefer to use formal channels: bank transfers, rapid transfers (such as Western Union, MoneyGram, Anelic, and Unistream), or post offices, with rapid transfers the most frequently used method (20 percent of total preferences). Migrants to Western European countries use more frequently bank and rapid transfers, while migrants to CIS countries and Central and South Eastern Europe prefer informal channels. The choice of transfer channel depends also on the category of migrant. For example, permanent migrants prefer rapid transfers, followed by carrying money with them; then they use bank transfers or bus drivers. Seasonal workers prefer first of all to bring the money themselves, then to use rapid transfers.

80.   The average sum of each transfer is $367, independently of the host country. The size of the transfer is instead positively correlated to the age of the migrant and negatively correlated to the year of first departure. Younger people transfer less, because they spend more in the host country and have less family obligations in the home country. As Moldovan migrants settle abroad, portfolio choice considerations become more important in determining the amount of funds remitted, as they start to save money in their host country.

81.   Survey estimates of remittances are consistent with balance of payments (BoP) data. According to the survey, Moldovan migrants transferred to Moldova an estimated $461 million in 2003 (23.5 percent of GDP), a figure that is statistically very close to the BoP estimate of $484 million. Permanent migrants are estimated to have transferred $154 million, almost the same figure reflected in the BoP for *remittances* ($152 million). Non-permanent migrants and seasonal migrants are estimated to have transferred $119 million and $187 million, respectively. Thus, the survey confirms that seasonal migrants (mostly, but not exclusively, to CIS countries) are the most important contributors to the total volume of transfers. Together, transfers from non-permanent and seasonal migrants, defining *compensations of employees* in the BoP, amount to $306 million. Again, this figure is statistically very close to the BoP estimate ($332 million).

82.   Estimates for the first 10 months of 2004 ($421 million) confirm that remittances continue to grow, and suggest that transfers from permanent migrants may be growing in importance. Since transfers usually peak before the winter holidays (as well as at end-August), it is highly likely that remittances in 2004 will be considerably higher than in 2003. At the same time, remittances from permanent migrants have increased to 36 percent of total inflows, compared to 33.4 percent during 2003. This possibly reflects the fact that a large number of Moldovans went abroad for the first time in 2002–2003, and that about 29,000 Moldovans obtained official status in Italy just before June 2002. Since most migrants to Western Europe tend to stay abroad permanently and remittances increase with the length of stay, remittances from permanent migrants may be increasing now with a lag with respect to the 2002–2003 migration wave.

Impact and use of remittances

83.   Remittances represent a large share of the income of the recipient family, thus raising its welfare. There is a positive correlation between the contribution of remittances to family income and the level of welfare of the recipient family. On average, remittances constitute at least 65 percent of the income of the recipient family in 41 percent of families with a migrant. Remittances cover 35–65 percent of family income for another 25 percent of families with a migrant. However, in many cases, when the family of origin is very poor to begin with, or the migrant is not yet remitting large amounts, even major contributions to family income are not sufficient to meet basic needs. In the qualitative research, all respondents indicated that they raised their consumption level—unless the emigration was recent or occasional—and the large majority of respondents observed that their situation improved considerably. Those emigration of a family member departure did not have financial problems, managed to upgrade their consumption level by, for example, buying a new car or renovating their house. This change in consumption levels has motivated friends and relatives to leave, or to prepare to leave.

84.   Remittances are mostly used to meet current consumption needs. Expenditures on basic consumption (e.g., food, clothes, utilities) are the most important use of remittances (Figure 12a). This result holds true throughout the "life cycle" of remittances: (i) before departure, as expectations are formed on how to use future transfers; (ii) during the first year of receiving remittances; (iii) during 2004 (the survey year); and (iv) in 2007, on the basis of expectations on future use. Throughout this "life cycle," housing investment tends to be the second most important use of remittances, followed by household durables and big-ticket family events (e.g., a wedding), and spending on education and health. This pattern of utilization of remittances is consistent with the stylized fact that the largest portion of remittances is spent on consumption and that the second largest is spent on houses, land, and related expenditures (paragraph 52).

85.   Particularly in the first years, only small portions of remittances are devoted to business investment, as migrants prefer to invest in housing and education. The low level of business investment is due to three factors. First, business investment ranks low among the reasons motivating migration. Second, few migrants (17 percent) think that they will be

able to save enough during the next few years to invest in their own business. Third, migrants have a cautious attitude toward investing in Moldova. This is very clear from the focus groups and interviews: only a small number of people expressed interest in opening a business in Moldova, often referring to bureaucracy, corruption, and the perception of a poor business environment. The preferred investment of migrants is the purchase of a house, or a second house for the children. From the focus groups it is also clear that migrants regard expenditures on education as a form of investment.

86.   The utilization pattern of remittances changes with the length of migration and the increase in welfare of the household. As basic needs (e.g., food and clothes) are met, an increasing portion of the remittances is oriented towards durables, investment in housing, savings, and business investment. Debt repayment is the second most important use in the first year, but becomes marginal over time as debts are settled. Spending on household durables increases over time, almost mirroring the decrease in expenditures on basic consumption goods. These two categories together account for a relatively stable 45 percent of remittances (Figure 12a).

87.   Families receiving remittances count on accumulating more savings in the future, provided transfers from the migrant member do not decline. Interestingly, the largest saving category throughout the remittances' "life cycle" is "money kept under the mattress" (Figure 13a). Although bank deposits increase more than any other saving category, recipient households would keep twice as much money "under the mattress" than in bank deposits even in 2007.

88.   Families receiving remittances would also considerably increase investment in business activities in the future, albeit to lower levels than housing and human investment. Indeed, business investment increases more than any other utilization category between 2004 and 2007 (Figure 12b above). This suggests that business investment is effected only at high income levels, reached after receiving transfers for a few years. Accounting for 4.2 percent of utilization of total transfers, microbusiness and purchases of land are the largest category of business investment (Figure 13b). Still, families intend to invest much more in housing (23 percent) and education and health (about 14 percent) in 2007.

Figure 12a. Moldova: Use of Remittances by Year

☒ Business investments or participation in business
(procuring land or business: e.g., minibuses or market
stands; purchase of assets for business: e.g. tractor,
cattle, pigs, fowl, sheep; other investments in business
or household/farm
☐ Savings

■ Housing investments (purchase of house or apartment,
building of house, repair of house/apartment)

☐ Human investments (payment for medical treatment,
education of children, etc.)

☒ Other consumption (household effects, e.g. washing
machine, furniture, purchase of car, organization of
wedding, funeral, christening; etc.)

■ Current expenditures (food, clothes, other household
expenditures, services, etc.)

☐ Debt repayment (money borrowed to go abroad and
other debt)

Figure 12b. Moldova: Use of Remittances by Category
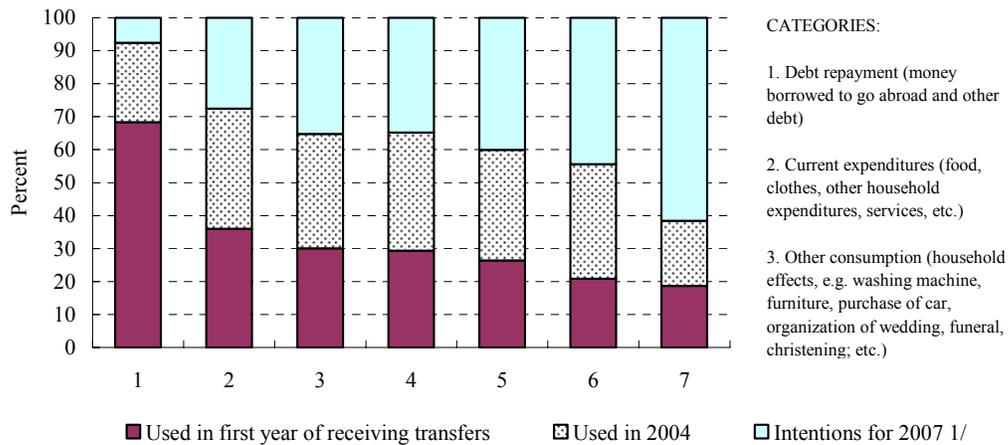
CATEGORIES:

1. Debt repayment (money
borrowed to go abroad and
other debt)

2. Current expenditures (food,
clothes, other household
expenditures, services, etc.)

3. Other consumption (household
effects, e.g. washing machine,
furniture, purchase of car,
organization of wedding, funeral,
christening; etc.)

■ Used in first year of receiving transfers   ☒ Used in 2004   ☐ Intentions for 2007 1/

Source: CBS-AXA, 2005.
1/ Provided the same level of remittances is maintained over the next 3 years.

Figure 13a. Moldova: Use of Remittances by Year: Breakdown by Type of
Savings
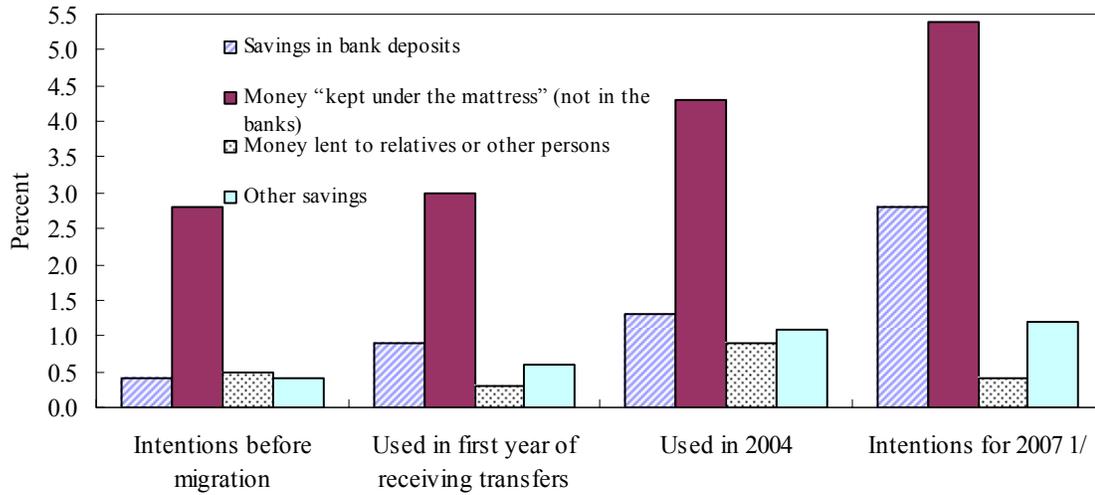
Figure 13b. Moldova: Use of Remittances by Year: Breakdown by Type of
Business Investment
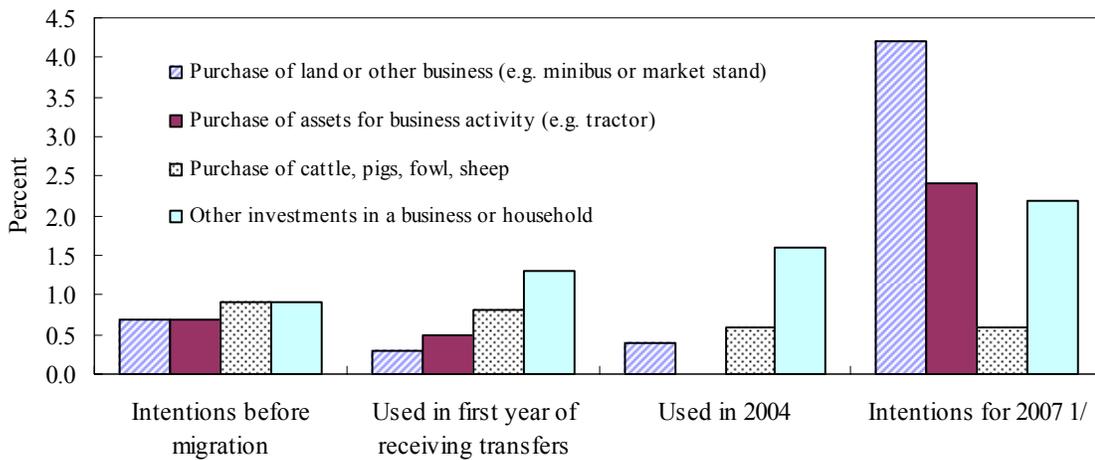
Source: CBS-AXA, 2005.
1/ Provided the same level of remittances is maintained over the next 3 years.

E. Conclusions and Policy Implications

Main findings of the survey

- The current migrant *contingent* is estimated at 571,000 people (39 percent of the economically active population). The migrant *potential,* which includes Moldovans who intend to depart in the near future, is estimated at around 690,000 people (48 percent of the economically active population).

- Remittances were estimated at $461 million (23.5 percent of GDP) in 2003, a figure statistically very close to the National Bank of Moldova's official estimates reported in the balance of payments. Estimates for the first 10 months of 2004 confirm the upward trend in remittances and suggest that transfers from permanent migrants may grow in importance.

- Most migrants move abroad temporarily, so both the number of people working abroad and their remittances are highly seasonal. Emigrating has become easier, as migrants can rely on the informational, financial, and logistical support provided by Moldovans already residing abroad.

- While there is a clear tendency for younger people to migrate, there is no evidence of a significant brain drain in the Moldovan case.

- The behavior of Moldovan migrants is consistent with the stylized facts from the literature on the motivation behind remittances. In particular, Moldovan migrants appear to have a strong attachment to their home country, and remit large portions of their earnings to their family. Thus, in the short-to-medium term, remittances are likely to remain a stable and countercyclical source of foreign exchange. In the long term, as more migrants settle abroad, portfolio choice considerations may become more important.

- Remittances are utilized in a manner consistent with the stylized facts from the literature on the use of remittances. Most remittances are used to meet basic current consumption needs and housing, with only marginal amounts invested in business activities. At the same time, migrants expect to be able to invest increasing portions of their future remittances in business activities. Savings from remittances are typically kept "under the mattress" rather than in bank deposits.

Policy implications

89.   It seems clear that, unless better economic opportunities are created at home, Moldovans will continue to emigrate. Since Moldovans migrate primarily to raise the consumption level of their households, and then to invest in their future through purchases

of housing and education services, encouraging them to channel their savings to more productive uses is a policy challenge.

90.   A conscious, determined, and sustained effort to improve the business environment could, however, facilitate the allocation into productive use of the increasing portions of remittances migrants intend to invest in the future. This is particularly important in a longer term perspective, as more migrants are likely to work abroad permanently and to start saving and investing in their host country. A poor business environment is the main reason for migrants' reluctance to invest in Moldova. The challenge will be to avoid complacency on account of stable flows of foreign exchange, and push the reform agenda forward.

91.   While migrants may not directly invest in businesses, it may be possible to increase incentives for them to deposit more savings in banks. In that context, the presence of strategic foreign investors would inject more competition in the market. In particular, banks from countries where there are large numbers of Moldovan migrants may be interested in opening branches in Moldova and providing packages of services to migrants and their families.

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III. EXTERNAL COMPETITIVENESS[30]

A. Introduction

92.   Badly hit by the 1998 regional crisis, Moldova's economy did not return to positive rates of growth until 2000. The pace of recovery picked up in subsequent years, with GDP growth averaging between 5 and 7 percent annually. However, the underlying domestic consumption boom and related increases in merchandise imports have given rise, over time, to concerns about the sustainability of the recovery.

93.   Importantly, recent trends have raised questions about Moldova's external competitiveness in general, and the appropriate level of the leu exchange rate in particular. With wages a fraction of the European Union average, Moldova has traditionally been regarded as a low-cost country, with a large potential—given right policies and development of a business-friendly environment—to attract direct foreign investment and boost exports. However, the steady appreciation of the Moldovan leu against the dollar, fast wage growth, and a dramatic widening of the trade deficit (from 23 to 32 percent of GDP between 2002 and 2003), have attracted policymakers' attention (Figure 1).

94.   This chapter assesses Moldova's external competitiveness in light of these recent developments. We use several approaches to estimate the appropriate level of the exchange rate: (i) purchasing power parity (PPP); (ii) constant equilibrium real effective exchange rate (REER); (iii) equilibrium wage from a panel regression; (iv) equilibrium wage from a production function; and (v) equilibrium REER in a small open economy, three-good model. **We conclude that Moldova does not face immediate risks of losing external competitiveness. Based on a number of indicators, its exchange rate appears undervalued, and is likely to continue to rise in real effective terms.**

95.   While the REER appreciation in recent years has been in line with the experience of other transition countries, it has been reinforced by several factors specific to Moldova. Particularly relevant are the exodus of working-age population, and the related large and growing inflows of migrants' remittances. Emigration has helped raise the *actual* wage (by reducing unemployment) and the *equilibrium* wage (by increasing the capital/labor ratio in the economy). At the same time, remittances have boosted national disposable income and domestic demand, leading to price increases in nontraded goods.

96.   Going forward, maintaining and improving external competitiveness in Moldova is inextricably linked to the overriding policy challenge of accelerating economic development. In that sense, competitiveness needs to be viewed not only in terms of safeguarding external sustainability, but also as Moldova's ability to build solid economic growth by attracting much-needed foreign direct investment.

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[30] Prepared by Milan Cuc.

Figure 1. Moldova: Assessing Competitiveness
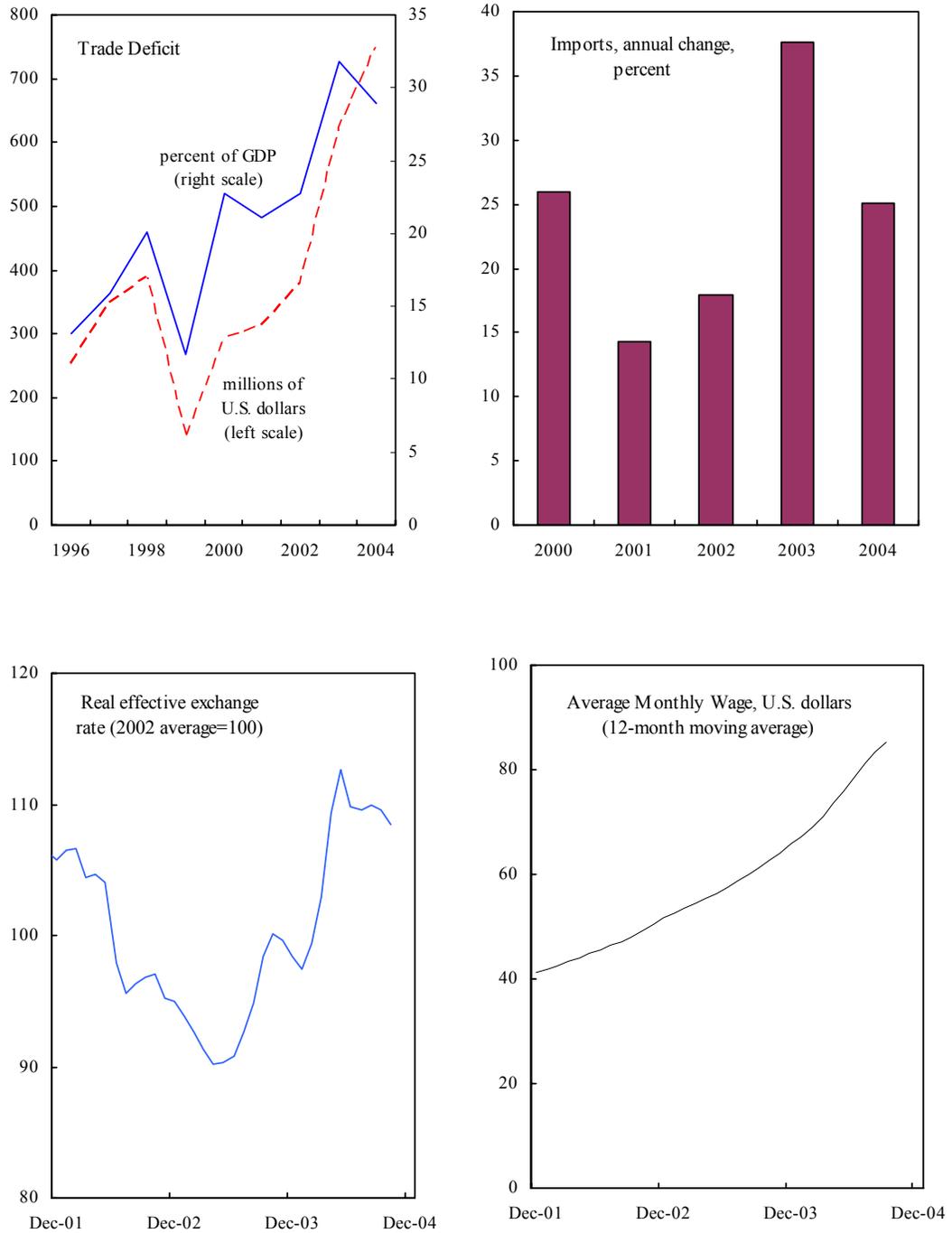
Sources: Moldovan authorities; and staff estimates and calculations.

B. Estimating the Equilibrium Exchange Rate

(i) Purchasing Power Parity

97.   The conventional approach to estimating a currency's equilibrium level is based on some form of purchasing power parity (PPP). This consists in constructing an index R, defined as the nominal exchange rate (E), multiplied by the ratio of an aggregate index of world prices (P^*) divided by an index of domestic prices (P):

$$R = E \cdot \frac{P^*}{P}$$

98.   In its most restrictive form, the equilibrium level of E is assumed to be that which equalizes the foreign and domestic price levels, expressed in a common currency. In other words, one that makes R equal to unity. A well-known example of this index is the Economist's McDonald's Big Mac standard: an over/undervaluation of a currency is calculated by comparing (i) the currency's dollar exchange rate that would obtain from equalizing the domestic price of McDonald's Big Mac to its price in the United States, and (ii) the actual dollar exchange rate. According to this index, the Moldovan leu was undervalued by 33 percent in May 2004.[31] The same idea lies behind the PPP-constructed exchange rates calculated for a broader set of goods and services. For example, based on the WEO data of PPP, the Moldovan leu was undervalued by 74 percent in 2003.

(ii) Constant Equilibrium Real Effective Exchange Rate

99.   Under a less constraining approach, the equilibrium value of R is allowed to diverge from unity, but remains constant at some level, at which the balance of payments is deemed to be in equilibrium.[32] For Moldova, it is difficult to select an appropriate reference year, given its tumultuous recent economic history, which can be traced in the movements of the leu real exchange rate against its main trade partners (Figure 2). After 1992, the country went through a difficult period of

Figure 2. Moldova: Real Exchange Rate vis-à-vis Main Trade Partners, January 1995–September 2004 (1995=100)

Source: IMF, International Financial Statistics.

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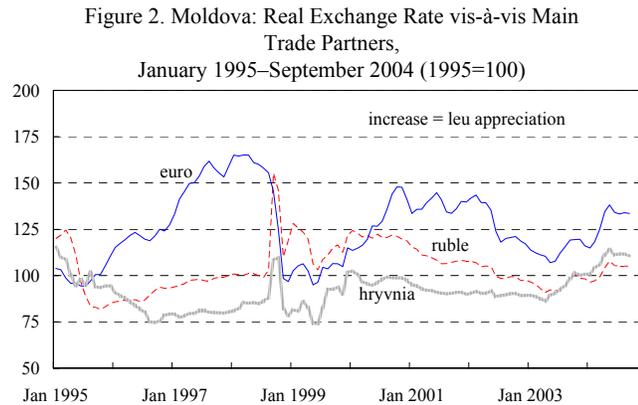
[31] The latest available data.

[32] This sustainable level could be different from zero. For example, with a growing GDP, a country could run a current account deficit that would leave the stock of foreign liabilities constant as a percentage of GDP.

post-communist transition, characterized by structural changes that affected both its domestic economy and the territorial composition of its external trade (Figure 3). Later, it was hit hard

Figure 3. Moldova: Foreign Trade Composition, 1994 and 2003

1994
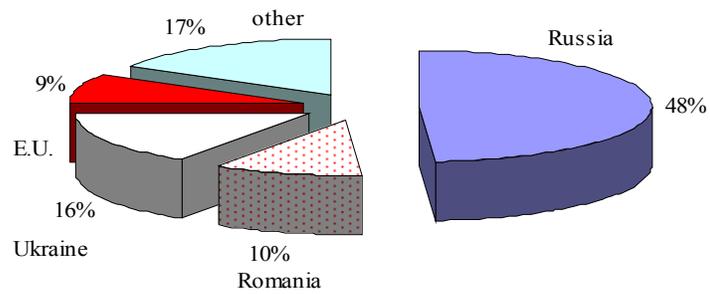
2003
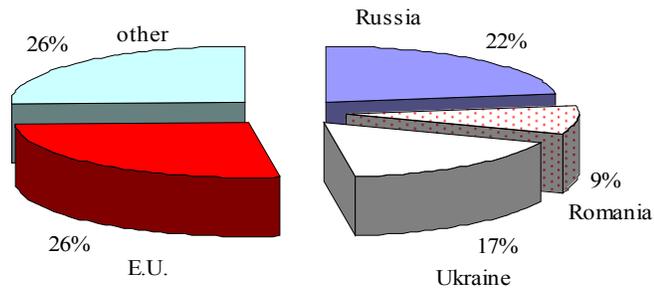
Source: IMF, Direction of Trade Statistics.

by the 1998 regional crisis, which led to a collapse in exports in 1998 and 1999, and a forced reduction in imports. A measure of stability returned with the resumption of economic growth in 2000.

100.   Some considerations favor 2001 as a possible reference year. The current account deficit narrowed to 2.5 percent of GDP; and both gross foreign exchange reserves and the REER remained relatively stable. In 2002, the REER—as well as the leu/euro and the leu/ruble exchange rates—began a decline that was not reversed until April 2003. Since then the REER appreciated markedly, and by November 2004 it was close to its 2001 average value. On this basis, it could be concluded that, in October 2004, the leu was at about its equilibrium level.

(iii) Equilibrium Wage Based on a Panel Regression

101.   The idea that the real exchange rate will tend to return to a previously established, unchanging equilibrium level, is not universally accepted in the economic literature.[33] The concerns are particularly germane when it comes to post-communist countries undergoing a transition to market economy with all attendant structural changes and relative price realignments. For example, substantial real exchange rate appreciations have been documented for CEE countries,[34] explained by: (i) the Balassa-Samuelson effect; (ii) growing incomes in the domestic economy, which lead to higher spending and a rise in the price of nontradables; (iii) recovery from the initial undervaluation. Considerations (i) and (ii) point to a relation between a country's income level and the extent of its currency "undervaluation" relative to its currency PPP level. This can be observed in Figure 4, which suggests that the leu was undervalued by about 74 percent, as mentioned in paragraph 7. One might therefore attempt to estimate the equilibrium exchange rate as a function of selected underlying fundamentals— including the level of average per capita income. As these fundamentals change over time, so will the equilibrium exchange rate.

Figure 4. Transition Economies: Exchange Rate Relative to Its Purchasing Power Parity, Percent, 2003
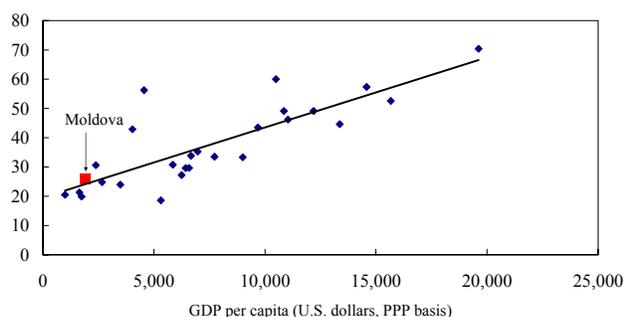
Sources: IMF, World Economic Outlook; and staff calculations.

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[33] The tendency of a variable to return to some average, constant value has been termed "mean reversion". Rogoff (1996) documents a slow reversion for exchange rates.

[34] See, for example, Schadler et al. (2004).

102.   An innovative approach used by Tiffin (2004) is to pool transition economies' data through a cross-section panel to estimate the equilibrium real exchange rate. The level of dollar wages in the manufacturing sector is used as a measure of the real exchange rate for the countries in question. The attractiveness of this approach lies in the fact that (a) manufacturing goods are well represented in international trade; (b) labor cost plays an important role in determining competitiveness; and (c) data on manufacturing wages are available and comparable (compiled by the International Labor Organization in a standardized format).

103.   The model is set up to estimate the equilibrium dollar wage in manufacturing as a function of selected "fundamentals": PPP-adjusted GDP per capita; share of agriculture in GDP; and the gross secondary-school enrollment rate. These variables serve as productivity proxies. The equilibrium wage estimated on the basis of these variables represents the wage that a country can afford based on its capital stock and overall level of development. Tiffin finds that, for CEE countries that recently acceded to E.U. membership, as well as for those of the Former Soviet Union (FSU), prices and wages are below the level that would reflect their true economic value. However, this undervaluation has been declining over time. In CEE countries, dollar wages approached their equilibrium values by the late 1990s. In FSU countries, the undervaluation has been more resistant, partly reflecting the overshooting following the 1998 regional financial crisis.

104.   Moldova's experience reflects broadly that of other countries (Figure 5). With the actual wage rising for most of the 1990s until 1998, the undervaluation gap narrowed, before widening sharply as a result of the 1998 crisis. Between 2000 and 2004, the gap was cut in half—from 52 to 25 percent—as the equilibrium wage increased by 26 percent and the actual wage doubled. The most recent data suggest that Moldova's exchange rate has still room to appreciate. Looking ahead, the experience of "advanced reformers" may serve as a guide to the likely future path of the real exchange rate of the Moldovan leu. Assuming economic growth takes firm hold in Moldova, the equilibrium wage would be expected to continue to rise. That, in combination with the gradual movement of the actual wage toward equilibrium, implies a faster rate for actual wage growth as well as for the real exchange rate appreciation.

(iv) Equilibrium Wage Based on a Production Function

105.   In the preceding formulation, the equilibrium wage determinants were variables chosen as proxies for the capital stock and overall level of development. Alternatively, one could attempt to model changes in the equilibrium wage as a function of changes in the capital stock or in the capital-labor ratio—based on a conventional cost-minimization framework with a two-factor production function (Box 1).

Figure 5. Actual and Equilibrium Wage, 1992–2004
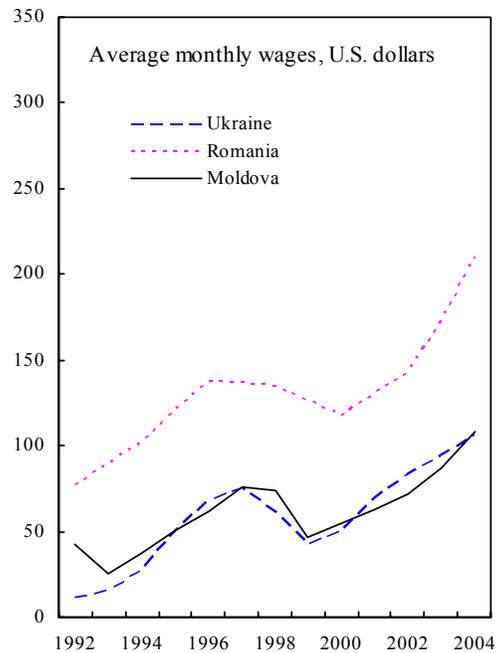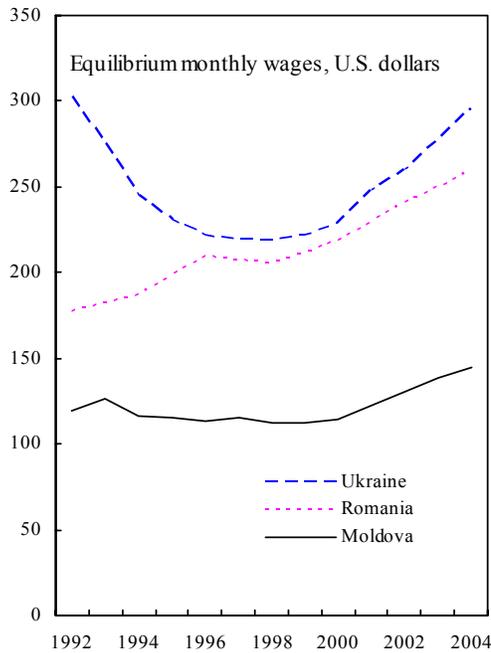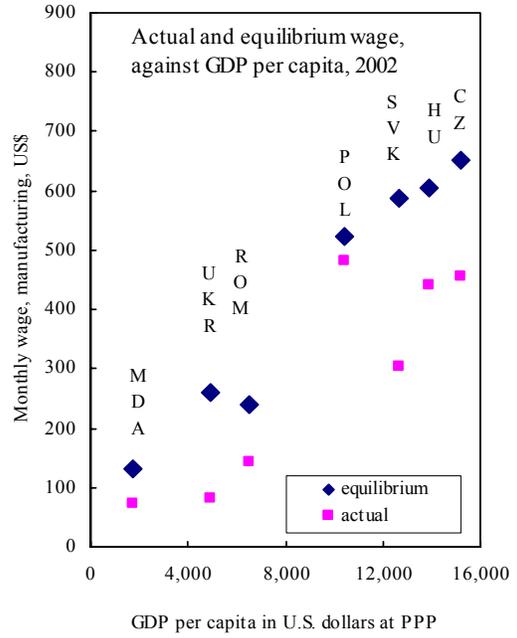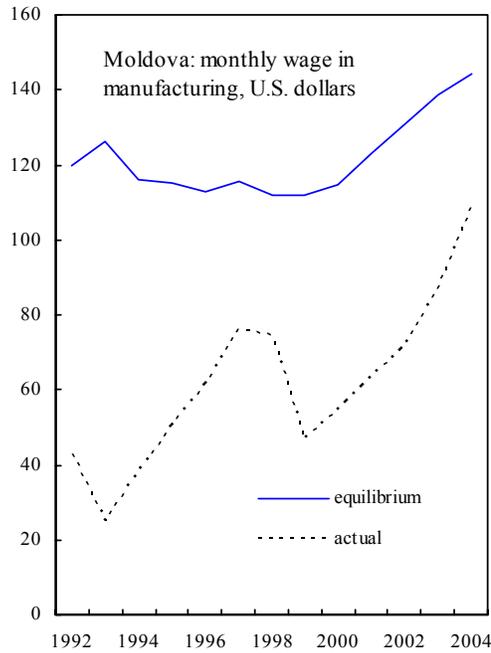
Sources: A. Tiffin; International Labor Organization; World Economic Outlook; and author's estimates and calculations.

Box 1. Estimating the Equilibrium Wage Based on the Capital/Labor Ratio

Assume a Cobb-Douglas production function

$$Y = A \cdot L^{\alpha} \cdot K^{1-\alpha} \qquad (1)$$

where: Y = output
        L = labor
        K = capital
        A, α = parameters

We obtain marginal products of labor and capital by differentiating (1) with respect to L and K:

$$\frac{dY}{dL} = \alpha \cdot A \cdot \left(\frac{K}{L}\right)^{1-\alpha} = \alpha \cdot A \cdot k^{1-\alpha} \qquad (2a)$$

$$\frac{dY}{dK} = (1-\alpha) \cdot A \cdot \left(\frac{K}{L}\right)^{-\alpha} = (1-\alpha) \cdot A \cdot k^{-\alpha} \qquad (2b)$$

where k = K/L

In equilibrium, the wage (w) will equal the marginal product of labor, hence from (2a) we can write:

$$w = \alpha \cdot A \cdot k^{1-\alpha} \qquad (3)$$

By differentiating (3), we obtain
$dw = \alpha \cdot A \cdot (1-\alpha) \cdot k^{-\alpha} dk$, and dividing through by w we get a percent change in w (=dw/w):

$$\frac{dw}{w} = (1-\alpha) \cdot \frac{dk}{k} \qquad (3b)$$

Differentiating k, we can write also
$$\frac{dk}{k} = \frac{dK}{K} - \frac{dL}{L} = \frac{I}{Y} \cdot \frac{Y}{K} - \delta - \frac{dL}{L} \qquad (4)$$

where: I = gross investment; δ = rate of depreciation of physical capital

By substituting (4) into (3b), we obtain

$$\frac{dw}{w} = (1-\alpha) \cdot \left(\frac{I}{Y} \cdot \frac{Y}{K} - \delta - \frac{dL}{L}\right) \qquad (5)$$

This implies that the changes in equilibrium wage will depend positively on the investment/output ratio, and inversely on the capital/output ratio, depreciation rate and labor force growth.

106.   Using data for investment and labor force for the period 1995–04, we estimate that Moldova's capital/labor ratio increased by 28 percent. Roughly two-thirds of this increase were due to the decline in the denominator (labor force), and one-third due to an increase in the capital stock through new investment (Table 1).

Table 1. Moldova: Capital/Labor Ratio, 1995–04	
(Cumulative change, percent, unless noted otherwise)	
Capital labor ratio	28.2
Capital	10.2
Labor force	-14.0
Sources: Moldovan authorities; and staff calculations.	

107.   Labor force data and capital stock estimates need to be treated with caution. The true extent of labor emigration is not known, and capital stock data are not directly available, but have to be estimated from annual investment flows using heroic assumptions. The paucity of data allows only to estimate the *change* in the equilibrium wage, rather than its level (cf. equation 5 in Box 1). In Figure 6, the average level for 1995–2004 is calibrated to correspond to the average level estimated by Tiffin

Figure 6. Moldova: Monthly Wage in Manufacturing, 1992–2004
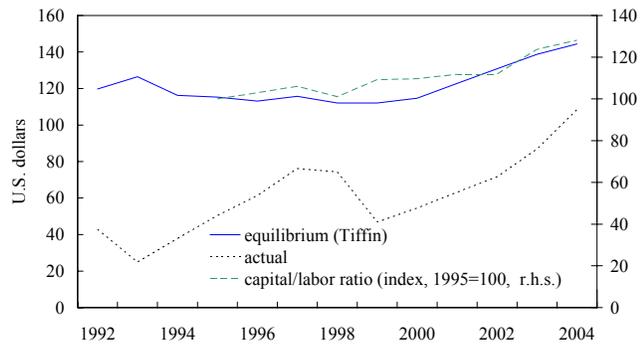
Sources: Tiffin; International Labor Organization; and staff estimates and calculations.

for this period. The exercise provides supporting evidence for the rising equilibrium wage in Moldova: the increase in the capital/labor ratio, and the implied increase in the equilibrium wage, are in line with Tiffin's estimates obtained through a panel regression.

(v) Equilibrium Real Exchange Rate in a Small Open Economy, Three-Good Model

108.   The single most important defining characteristic of Moldova's economic development in recent years has been the fast growth in remittances from abroad.[35] Unfortunately, none of the approaches outlined in the preceding discussion is equipped to model the equilibrium REER as a function of changes in sustainable income and capital flows in the balance of payments. It may be therefore useful to consider a model that would be better suited to analyze structural adjustments of the kind undergone by a small country receiving large amounts of foreign exchange inflows.

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[35] See Chapter I.

Box 2. Outline of a Three-Commodity Model [1]

A country produces two goods—a nontraded domestic good, D, and an export good, X. It consumes two goods—the domestic good and the imported good, M. The corresponding prices are Pd, Px, and Pm. Goods D and X are assumed to be imperfect substitutes in production—a characteristic captured by the economy's production possibility frontier, specified as a constant elasticity of transformation (CET) function. Profit maximization by producers implies that the relative supplies of D and X depend on their relative prices, Pd and Px, and on the elasticity of transformation, Ω. Goods D and M are assumed to be imperfect substitutes in consumption, with a constant elasticity of substitution (CES) function. The first-order condition for utility-maximizing consumers implies that relative demands for M and D will depend on their relative prices, Pm and Pd, and on the elasticity of substitution, σ. The domestic prices of the two traded goods (M and X) equal their world prices (π^m and π^x, respectively) times the nominal exchange rate (E). The world prices are exogenous (small country assumption). Finally, the balance of trade constraint states that the sustainable trade balance (exports minus imports) is set exogenously.

The model can be reduced to three equations:

$$\frac{M}{D} = c_1 \cdot \left(\frac{pd}{pm}\right)^{\sigma} \qquad\qquad (1)$$

$$\frac{X}{D} = c_2 \cdot \left(\frac{px}{pd}\right)^{\Omega} \qquad\qquad (2)$$

$$\pi^m \cdot M = \lambda \cdot \pi^x \cdot X \qquad\qquad (3)$$

where the constant terms in equations (1) and (2) represent the share parameters from the CES and CET functions. Parameter λ in equation (3) is the country's sustainable balance of trade, or the proportion by which imports can exceed exports.

By log differentiation, where $d\log(X) = \hat{X} = \dfrac{dX}{X}$, we obtain

$$\hat{M} - \hat{D} = \sigma \cdot (\hat{P}d - \hat{P}m) \;\dots\dots\dots\dots(1b)$$

$$\hat{X} - \hat{D} = \Omega \cdot (\hat{P}x - \hat{P}d) \;\dots\dots\dots\dots(2b)$$

$$\hat{\pi}^m + \hat{M} = \hat{\lambda} + \hat{\pi}^x + \hat{X} \;\dots\dots\dots\dots(3b)$$

The nominal exchange rate, E, is chosen as the numeraire, so that $\hat{E} = 0$ and $\hat{P}m = \hat{\pi}^m$ and $\hat{P}x = \hat{\pi}^x$. As the world prices are set exogenously, the only endogenous price in the model is the price of the domestic good (Pd), which also determines the real exchange rate (R). Solving for the real exchange rate, we obtain

$$\hat{R} = \hat{E} - \left[\hat{P}d - \frac{\left(\sigma \cdot \hat{\pi}^m + \Omega \cdot \hat{\pi}^x\right)}{\sigma + \Omega}\right] = \left(\frac{\hat{\pi}^m - \hat{\pi}^x}{\sigma + \Omega}\right) - \frac{\hat{\lambda}}{\sigma + \Omega} \;\dots\dots\dots\dots(4)$$

Equation (4) shows the real exchange rate—defined as the nominal exchange rate, adjusted for the inflation differential between the home country and its trading partners—as a function of the two right-hand-side terms: the terms of trade; and the sustainable balance of trade. Equation (4) makes it clear that the conventional approach—based on the assumption that there is some unchanging equilibrium level for the real exchange rate—is valid only if the two terms on the right-hand side are equal to zero: i.e., there is no change in the country's terms of trade, or in the sustainable level of foreign income or capital inflows.

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[1] Based on Devarajan et al. (1993).

109.   Box 2 outlines a model of a small, open economy with two tradable goods (export good and import good) and a nontraded good. Equation (4) suggests that the equilibrium REER changes in response to shifts in the terms of trade and in the sustainable income and capital flows. Between 1996 and 2004, Moldova benefited from a modest improvement in its terms of trade and a large increase in workers' remittances, which have been financing a progressively larger portion of its trade deficit (Figure 7).

Figure 7. Moldova: Import Coverage, Percent, 1996–2004
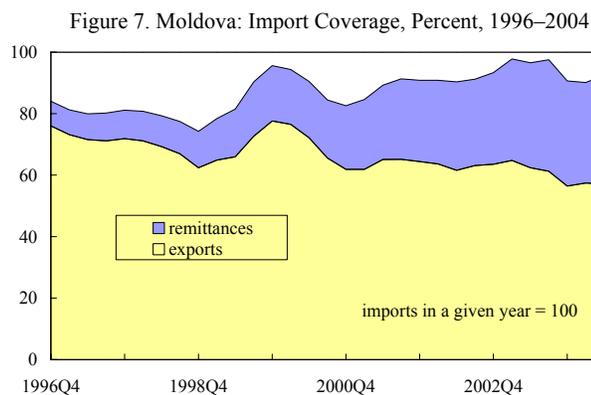
Sources: Moldovan authorities; and staff calculations.

110.   The model suggests that Moldova's equilibrium REER has increased in response to the rising inflows of remittances. Figure 8 shows the cumulative appreciation since end-1996, with the contribution from the change in sustainable trade balance corresponding to the influence of remittances inflows.[36] Under the assumption of elasticities of substitution and transformation equal to 0.75, the model estimates a cumulative appreciation of about one third in Moldova's REER between 1996 and mid-2004.

Figure 8. Moldova: Change in Equilibrium REER (Cumulative Q4 1996–Q2 2004, in percent)
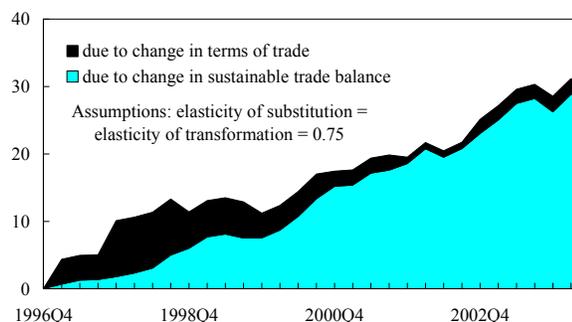
Sources: Moldovan authorities; and staff estimates and calculations.

111.   Admittedly, the estimated impact will depend on the values selected for the parameters of the model. To gauge the robustness of the model predictions, the results were calculated for alternative values of elasticities of transformation and substitutions (Table 2). **They suggest a range for the increase in the**

Table 2. Moldova: Cumulative Change in Equilibrium REER (Since 1996, in percent)

Transformation elasticity, Ω	Substitution elasticity, σ		
	0.50	0.75	1.00
0.50	51	39	32
0.75	39	32	27
1.00	32	27	23

Sources: Moldovan authorities; and staff calculations.

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[36] See equation (4) in Box 2.

equilibrium REER of 23 to 51 percent between 1996 and 2004.

112.   Figure 9 contrasts the predicted range for the cumulative appreciation of the equilibrium REER with the actual cumulative change in REER since end-1996. It suggests that the cumulative increase in the actual REER (10 percent) was below the increase estimated by the model for the equilibrium REER.

Figure 9. Moldova: Change in REER and Equilibrium REER,
Q4 1996–Q4 2004 (Cumulative, in percent)
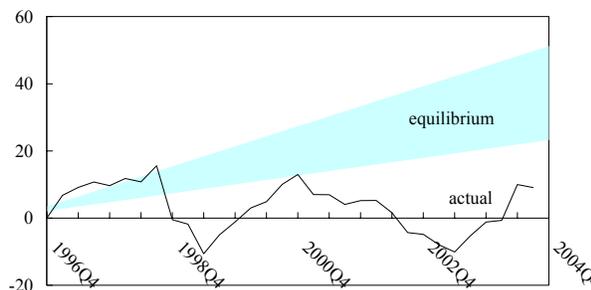
Sources: Moldovan authorities; and staff estimates and calculations.

C. Conclusion

113.   The preceding analysis reveals that the Moldovan leu is unlikely to be overvalued at present. According to the various approaches used here to calculate the equilibrium REER, **the leu remains below its equilibrium value despite the REER appreciation observed in 2003 and 2004.** The extent of undervaluation varies according to the method used, but its mid-point could be put in the 20 to 40 percent range. While the increase in dollar wages and the nominal appreciation of the leu—particularly against the dollar—have captured public attention, some aspects have received less emphasis: (i) the large undervaluation of the REER following the 1998 regional crisis, implying a large initial gap between the actual and equilibrium REER; and (ii) the role of balance of payments inflows (remittances) in raising the equilibrium REER.

114.   **Further REER appreciation is likely.** Absent other developments, the REER has some room to appreciate, and will likely do so if Moldova's economy operates close to its full potential, the labor market remains tight, and remittances continue to grow. Rather than viewing the leu appreciation as harmful to the economy, our analysis suggests that, by raising the returns in the nontraded sector relative to those in the traded sector, it could facilitate a reallocation of resources in the economy that could lay the foundation for long-term growth. With remittances providing an important portion of balance of payments financing, domestic production could be redeployed toward more goods and services needed for domestic investment. The hitherto neglected domestic infrastructure—transportation network, electricity transportation and distribution, communications—could benefit from this reallocation of resources. Over time, the modernization of the domestic infrastructure would help strengthen the economic potential by helping raise the economy-wide productivity growth.

115.   Understanding the reasons behind the real leu appreciation and its implications is important for selecting appropriate policy responses. Resisting nominal leu appreciation will be ineffective as a way of containing real exchange rate appreciation—which will be instead

obtained through higher inflation—and will be undesirable if the real exchange rate appreciation reflects changes in its equilibrium value. Our analysis also serves as a reminder that, in the long run, Moldova's competitiveness needs to be viewed as the ability of the economy to generate increases in incomes through higher investment and productivity growth. This, in turn, underscores the need to focus attention on structural impediments to higher private investment.

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IV. FISCAL REFORMS[37]

A. Introduction

116.   Moldova started to implement fiscal reforms in earnest from the late 1990s. Important results have been achieved in the following areas: reorganization of the State Tax Inspectorate (STI); establishment of a treasury system; modernization of the budgetary system (both budgetary procedures and presentation); adoption of a medium-term expenditure framework (MTEF); and improvement in general government reporting. These reforms have been supported by Fund and World Bank technical assistance.

117.   The experience with implementation of Fund advice has been mixed. Although a number of recommendations have been carried out, many others, of a more substantive and strategic nature—expected to bring long-term benefits—have not been put into practice. In particular, further steps are needed to strengthen tax administration and public finance management.

118.   This chapter outlines the main characteristics of Moldova's fiscal reforms (already implemented and under implementation), and the challenges ahead. Section B discusses tax administration reforms; Section C covers public finance management reforms; and Section D concludes.

B. Tax Administration Reforms

119.   Tax administration reforms have contributed to improvements in the efficiency of tax administration. The STI has implemented a number of measures recommended by the Fiscal Affairs Department (FAD) of the IMF.[38] Tax administration reform efforts have focused on reorganizing the STI, introducing a tax identification number (TIN) to uniquely identify taxpayers, establishing and developing the Large-Taxpayer Unit (LTU), developing the tax audit system, improving VAT administration, strengthening collection enforcement, and upgrading the STI's database system.

120.   While the STI's organizational structure is generally in line with international practice, the tax administration system needs comprehensive reform. The STI has been appropriately reorganized along functional lines. However, it has yet to develop a comprehensive strategy, with clearly established guidelines, and structured and systematic approach in managing reforms. Many of the adopted reforms did not live up to their potential

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[37] Prepared by Anita Angelovska-Bezoska.

[38] FAD has provided substantial technical assistance in tax policy and tax administration in Moldova. FAD's August 2004 Fiscal Strategy Brief highlights the main fiscal reform priority areas.

benefits because they were implemented without a modernization plan, clear and formal planning processes, management ownership, and adequate administrative capacity. Development and implementation of a modernization plan, a human resource strategy, and—in the long term—a full strategic management system, should make the STI more effective.[39] Further development and modernization will critically depend on the political commitment and ownership of reforms.

121. The LTU, in charge of tax audits and enforcement collection measures, was established in 1998. Gradually it has been reorganized and new functions have been added in order to build a full-fledged organization—a unit responsible for all tax administration functions for large taxpayers. This way special emphasis is given to a limited number of taxpayers with an important share in tax revenues. However, the LTU needs further upgrade of its organizational structure, additional skilled personnel to provide better service for taxpayers, and specialized tax audits based on risk assessment. These improvements should allow for a more efficient use of its resources and better results in tax collection.[40]

122. The tax audit system has been partially revamped. To improve audit performance, a new division has been established, with responsibility for the audit program, methodologies, guidelines, and oversight. However, audit case selection is still not completely based on a computerized analysis of taxpayers financial indicators, negatively affecting audit efficiency and collection efforts. In order to strengthen tax compliance, the audit program should rely, as much as possible, on objective selection criteria, and audits should be better targeted to different types of taxpayers.

123. Limited progress has been achieved so far in VAT administration. Some enhancements were made in controlling refund claims, and the VAT registration threshold was increased, allowing the STI's resources to be concentrated on a smaller number of taxpayers without jeopardizing revenue collection. Nevertheless, the VAT refund process remains cumbersome and lengthy, imposing an unnecessary burden on the private sector. Developing a more effective system at the lowest acceptable cost for the government and taxpayers will require simplifying and shortening the VAT refund procedure, discontinuing

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[39] The STI has started drafting a modernization strategy. The Dutch government will finance a resident expert to support this process.

[40] In terms of organizational structure and skilled personnel, the LTU is missing (i) a quality review team, to ensure objective and high standard audits; (ii) a risk and intelligence team; (iii) a specialized unit to deal with international tax issues; and (iv) an administrative support team.

the practice of offsetting VAT refunds against arrears,[41] and decentralizing VAT refund decisions.[42]

C. Public Finance Management Reforms

124.   The authorities have made commendable progress in preparing the MTEF. The MTEF includes a macroeconomic framework, outlines medium-term general government policies, and provides a basis for a more efficient allocation of public resources, according to the priorities identified in the authorities' Economic Growth and Poverty Reduction Paper (EGPRSP). The preparation of sector expenditure strategies and expenditure plans for education, health care, and social protection was an important step toward strategic planning and allocation of resources based on strategic priorities.[43] The authorities can benefit from expanding expenditure strategies and plans to other sectors and from enforcing intra-sectoral and inter-sectoral expenditure prioritization. More realistic revenue projections, contingency plans, and better alignment of the budgetary process with the MTEF and EGPRSP, will further improve the use of available public resources.

125.   While the budget preparation process for 2005 benefited markedly from the MTEF, budget efficiency and effectiveness still needs to be improved. The budget process still lacks strategic planning and analysis, as well as a more comprehensive expenditure prioritization. The authorities lack administrative capacity for developing comprehensive sectoral policies and priorities, and related expenditure ceilings. As a result, budget preparation is now input-oriented, instead of outcome-oriented. Budget institutions are mainly interested in how much they will get, and do not pay enough attention to the goals to be achieved with the allocated budget. With the adoption of the MTEF and the EGPRSP, the basis for future improvement has been established. The authorities have taken initial steps for program budgeting in a few sectors, but administrative capacity constraints in the Ministry of Finance and in other budgetary institutions have limited progress to date.

126.   Budget presentation has improved. In line with the recommendations of a recent ROSC mission, the Ministry of Finance has made progress in presenting to the parliament a comprehensive 2005 general government budget, including extra-budgetary funds (EBFs), special revenues, and foreign-financed investment projects, organized by functional classification. The authorities should also make an effort to present to parliament a comprehensive general government budget by economic classification, to enhance government fiscal transparency and fiscal control. To ensure greater consistency of the

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[41] About 95% of VAT refunds are offset against current and future tax liabilities.

[42] Currently, besides regional committees for VAT refunds, there is also a national committee. The STI has prepared a regulation for abolishing the national VAT refund committee, pending approval from the Ministry of Finance.

[43] Sector expenditure strategies and expenditure plans were prepared as part of the MTEF process.

overall fiscal framework, separate procedures for adopting the state budget and the budgets of the Social Insurance Fund and Health Insurance Fund should be avoided, as they complicate the general government budget presentation.

127.   Budget reporting has been upgraded, but still it is not comprehensive. Monthly reports do not include data for the EBFs, special revenues, and foreign-financed projects. The Ministry of Finance intends to start preparing comprehensive budget execution reports on a regular basis by functional classification in 2005. Comprehensive reporting will increase fiscal transparency and the quality of the decision-making process.

128.   The authorities have made significant headway in establishing and developing a treasury system. The treasury system consists of a central treasury, responsible for managing state revenues and expenditures, and the local treasuries, in charge of local government revenues and expenditures. The establishment of the treasury contributed to fiscal discipline, improved budget execution, reduced the stock of expenditure arrears, enhanced fiscal transparency and accountability, and improved fiscal monitoring and reporting. An important step toward strengthening fiscal discipline was the establishment of a system for registering procurement contracts concluded by central government institutions, and its gradual extension to local government institutions.[44] This system provides the basis for expenditure monitoring at various stages of the expenditure process. However, the authorities need to further develop and improve the treasury functions by providing up-to-date treasury software, establishing direct computer links between the treasury and budget institutions, upgrading the system for contracts registration (for instance, to widen the coverage to all types of expenditures), and developing cash and debt management.

129.   The introduction of a single treasury account (STA) established the foundation for improving cash management. The STA is a centralized account for collection of all state revenues and execution of all state expenditures (including extrabudgetary funds and special revenues). Through establishment of the STA, a major part of the public resources, previously spread on a number of bank accounts, was consolidated into one centralized account at the central bank. Although the STA is operational. The efficiency of cash management can be substantially improved. Currently the Ministry of Finance approves monthly spending plans for spending units, but does not manage to satisfy all cash needs on a daily basis. Therefore, the Ministry often resorts to cash rationing, with predefined expenditure priorities (wages and salaries, pensions, and scholarships). For greater consolidation and more efficient cash management, the authorities should integrate the resources of the Social Insurance Fund and the Health Insurance Fund, as well as foreign financed projects, into the STA.[45] This integration will help secure the government's cash

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[44] Before registering contracts, the treasury checks the budget allocation, thus preventing accumulation of arrears.

[45] Currently they operate outside the treasury system and their balances can not be used by the treasury to bridge short-term gaps between inflows and outflows.

resources, eliminating favoritism toward any commercial bank, and improving monitoring and reporting of general government financial operations. In addition to integration, the authorities should establish clear and transparent mechanisms for borrowing within the STA, strengthen the coordination between cash and debt management, consider using overdraft bank facilities, improve the coordination between the Ministry of Finance and spending units, and completely avoid idle balances on government accounts in commercial banks.[46]

130.   In recent years, the proliferation of extra-budgetary funds has complicated fiscal management. EBFs are earmarked funds created on the basis of specific taxes or fees with corresponding specific use in accordance with specific laws (e.g. export support fund, tourism support fund, ecology fund, text book fund). As earmarked funds, they are not subject to the same budgetary rules as regular budgetary items, in case expenditure cuts or budget reallocation within the approved annual budget are needed. This way they enjoy greater flexibility but hamper expenditure prioritization. To achieve sound fiscal management, the authorities need to start reducing and consolidating these funds with mainstream line ministry activities.

131.   Special revenues represent a significant share in total general government revenues and should be closely monitored. Special revenues are those collected by budget institutions from services provided for a fee, and spent by budget institutions for their regular functions. In 2003 they reached 10.5 percent of total revenues, and the estimate for 2004 is 10 percent. A significant part of the special revenues is collected and spent in the education sector. Although managed by the Treasury, special revenues complicate fiscal management in at least two ways. Fist, they may encourage budget institutions to focus more on activities that generate special revenues instead of on their core function, as well as to treat some of budget revenues as special revenues to retain control over their use. Second, cash management may be less efficient if these revenues are not fully consolidated in the STA on a daily basis. A detailed analysis of the sources of these revenues, the nature of their expenditures, and their concentration in certain sectors or budget institutions, would help define proper government policies and actions. In any event, to the extent possible, they should be integrated into the budget.

132.   The authorities are planning to step up monitoring of state-owned enterprises (SOEs). Following the recommendation of the ROSC mission, the Ministry of Finance has recently established a separate unit to monitor the financial operations of SOEs. To provide a better insight into their operations, procedures should be put in place to ensure approval of their financial plans, regular financial reporting, and external audits of their annual accounts.

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[46] There are still idle balances on the accounts of local treasuries in commercial banks.

D. Conclusions

133. Moldova has already implemented important fiscal reforms in the tax administration and public finance management area. These reforms contributed to improve tax administration and institutional fiscal management, notably in the treasury and budget system. The budgetary reforms benefited significantly from the preparation of a MTEF and from the strategic framework included as part of the EGPRSP.

134. Looking ahead, Moldova faces many fiscal challenges. Successful implementation of a comprehensive tax administration reform, further consolidation of public resources, and further development of the treasury and budget operations will all require strong commitment, as well as full awareness of the government about the need for reforms. Special emphasis should be placed on strategic management at the STI, VAT administration, collection enforcement, closure of EBFs, strengthening of cash management procedures, and closer alignment of the annual budget, MTEF, and the EGPRSP.

V. ENTERPRISE PRIVATIZATION[47]

A. Introduction

135.   Moldova's first privatization program was launched in early 1993 and implemented during 1993–1994. This was quickly followed by a second privatization program covering the 1995–1996 period. The dominant component of these first two privatization programs was mass privatization undertaken through the distribution of Patrimonial Bonds. Out of a total number of 1,306 "objects" (821 included in the privatization programs and 485 resulting from de-monopolization), 225 companies were entirely privatized, while partial privatization took place in 933 companies.

136.   The high expectations surrounding the use of Patrimonial Bonds were largely unmet. More than 3 million Moldovan citizens were shareholders of companies or investors in Privatization Investment Funds by the end of 1996. The Investment   Funds—a hybrid between a mutual fund and a holding company—ended up holding some 70 percent of the Patrimonial Bonds. Fund managers, however, did not have the incentives, power, experience, and capital to carry out the much needed restructuring of the enterprises. While 14 of the original 35 Investment Funds are still operating, they are in serious financial distress and their assets have continued to deteriorate.

137.   The third privatization program, covering the period 1996-97, marked the beginning of cash privatization in Moldova. The 1,042 objects included in the third program were categorized into three groups (called annexes). The first group contained 510 enterprises and stand-alone assets that could be privatized without special approval by Parliament. The second group contained 39 enterprises whose sale required individual privatization plans approved by Parliament. The final group contained 180 unfinished buildings. In addition, the program included the sale of residual state shares in 313 enterprises.

B. The Privatization Program as of 2001

138.   As a result of slow implementation, the 1996–1997 program was extended a number of times. By 2000, after the first program extension, only 295 enterprises and 10 unfinished construction projects had been privatized. In 2001, when the program was extended for a second time, Parliament simplified the privatization program by merging the first two annexes and authorizing the government to approve individual privatization plans without the need for Parliamentary action. The privatization program inherited by the

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[47] Prepared by Maya Sandu and Lawrence Bouton (World Bank). It covers the privatization of enterprises listed in the government's privatization program.

current government, as amended in 2001, included 482 enterprises and 160 unfinished construction projects. Reflecting the agricultural nature of the economy, slightly over 40 percent of the number of firms (30 percent of the value of the social capital) in the privatization program are in the agricultural sector (Table 1). The ten largest of these firms, mainly wineries, comprised nearly 50 percent of the total social capital in this sector. In the transportation and communication sector, over 90 percent of the total social capital in the sector is in one firm, Moldtelecom. Finally, among firms in the energy sector, the CET-2 power plant and the two Northern electricity distribution companies made up over 50 percent of the value of the social capital in the sector.[48]

139.   Even minority state ownership in partially privatized firms can have important implications for corporate governance. In terms of state ownership, slightly less than a quarter of the firms in the 2001 privatization program were completely owned by the state (Table 2). According to Moldovan company law, the ownership of at least 25 percent of the total capital in joint stock companies grants stakeholders a right to block certain decisions by imposing quorum requirements. This law confers a key position for the minority shareholders, who can prevent an extraordinary shareholder meeting from taking place through their refusal to attend, or block a proposal requiring ¾ majority by voting against it. The state holds a blocking position—between 25 percent and 50 percent of share capital—in 78 firms, while in 330 firms it holds the majority shares. In the remaining 69 firms, the state holds only a residual share (largely the legacy of mass privatization).

Table 1. Enterprises in the Privatization Program, as of 2001

Sector	Number of Enterprises	Social Capital (million of lei)	Average State Share in Enterprise (weighted average)
Agriculture	196	1,473.9	77.5
Construction	21	77.7	36.7
Energy	19	922.3	90.5
Industry	49	503.0	66.6
Local Public Administration	66	153.3	58.6
Printing Houses, Libraries	23	10.5	84.8
Social Service Delivery	29	34.5	46.7
Social Sphere	25	71.7	32.2
Trade and Public Nourishment	25	10.8	42.7
Transportation and Communications	29	1,080.7	96.3
Total	482	4,338.4	81.2

Table 2. Distribution of State Shareholdings, as of 2001

State Shareholding (% of total shares)	Number of Enterprises	Social Capital (million of lei)	Distribution of Shareholding by: Number of Enterprises	Social Capital
Less than 25%	69	351	14%	8.1%
25% to 50%	78	439	16%	10.1%
more than 50%	330	3,548	69%	81.8%
Total	477	4,338	100%	100.0%

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[48] The social capital of a firm recorded in the privatization program reflects its book value as of 1997. Current market values are likely to be substantially different than these recorded book values. As such, the social capital should be viewed as an indicator of firm size.

C. Changes to the Privatization Process Since 2001

140.   Before coming to power in 2001, the communist party had been very critical about the privatization implemented under previous governments. These programs were viewed as corrupt and showing little in the way of positive results for Moldova. In addition, the communists were strongly opposed to the privatization of enterprises in the strategic wine, tobacco, energy, and telecom sectors, and spoke out against the sale of state property to foreign investors.

141.   Upon assuming power, the government expressed its intentions regarding state property and privatization in its April 2001 program entitled "Economic Revival is the Revival of the Country." The program indicated that the state should become a full participant in the market economy, where state enterprises would play an important role. In this context, the establishment of state monopolies for the production and sale of certain goods was considered necessary. Moreover, the program sought to "delegate some of the functions of the Department of Privatization to the sectoral ministries and focus the Department's efforts on the enforcement of privatization contracts", stressing that "enterprise privatization would be carried out as proposed by sectoral ministries."

142.   Subsequently, the government announced that it was going to adopt different privatization methods to increase the transparency of the privatization process. It also decided to impose more responsibilities on the buyers of privatized firms by requiring investment commitments. As announced in the Revival program, the function of managing state property was transferred from the Department of Privatization to the line ministries, under the premise that the Department did not have sufficient capacity to perform its duties efficiently. While largely acknowledged as being true, unfortunately line ministries face similar capacity constraints. Insofar as the line ministries have a vested interest in excluding objects from the privatization program and keeping enterprises under ministerial control, the new arrangement contributed to a slower pace of privatization.

143.   The current government also amended the Privatization Law. The original Privatization Law, adopted in 1991, was aimed primarily at governing the mass privatization process. The amendments, adopted in March 2003, sought to clarify the roles and responsibilities of different government bodies, define new privatization methods, and specify a number of post-privatization activities. Although the new law did not address the shortcoming in state property management, leaving it in the hands of the line ministries, it was generally perceived as an improvement over the previous law. Nevertheless, expectations that the revised law would contribute to the acceleration of privatization have not yet materialized.

D. Privatization Performance since 2001[49]

144.   Since 2001, state shares in 59 enterprises of the 482 enterprises listed in the 2001 privatization program have been sold. These represent slightly less than 6 percent of total value of state share capital in the entire privatization program, and sold for less than $11 million. Only 13 of the 160 unfinished buildings were privatized over the 2001–2004 period. Given that most of these constructions were initiated before or at the beginning of the 1990s, it is likely that their monetary value is small and most of them would qualify to be sold only at a "symbolic" price. Of the firms privatized, the state had an initial shareholding of less than 25 percent in 17 firms, a shareholding of between 25 and 50 percent in 15 firms, and a controlling block of shares in the remaining 27 firms. Among these later firms, 5 can be categorized as "large" enterprises, with share capital of more than MDL 10 million. The three largest firms (Vismos, Călăraşi-Divin, and Nis-Struguraş wineries), were privatized with the support of the World Bank's Third Structural Adjustment Credit (SACIII). Among the larger firms, investment commitments in the amount of roughly $20 million were part of the privatization contract (the three wineries mentioned above accounted for about 60 percent of these commitments). Over the course of the entire privatization program, roughly 25 percent of the new private owners have fully complied with their purchase commitments.

Table 3. Privatized Enterprises, 2001-2004

	2001	2002	2003	2004	Total
Agriculture		16	7	3	26
Construction			5	2	7
Industry		1		2	3
Local public administration			2	4	6
Printing houses, libraries			1	1	2
Social service delivery	1	1	3	1	6
Social sphere		1	2		3
Trade and public nourishment		1			1
Transportation and Communications			1	4	5
Total	1	20	21	17	59

145.   A perceived failure to fulfill agreed investment commitments or other contractual obligations has resulted in the cancellation of 28 privatization contracts, with an additional 4 cases still pending in the courts. In 2003, for example the sale-purchase contract for the Dacia Hotel, privatized in 1999, was declared null and void as a result of irregularities and violations committed during the privatization process. In a number of other cases, such as Farmaco (pharmaceuticals), Moldova-Tur (travel agency) and Nis Struguras (wine producer), the privatization contracts were annulled after it was determined that the investors had failed to undertake agreed investments commitments.

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[49] Privatization in Transnistria has been underway since 2000, with thirty-eight large enterprises privatized, mainly to Russian investors. Transnistrian authorities report that in 2004, over $35 million was earned selling enterprises to private investors. Under a law passed at end-2004, effective January 1, 2005, all privatization agreements in Transnistria are considered invalid unless sanctioned by the Moldovan government.

146.   As part of the privatization process, and as envisaged under the program supported by SAC III, the government agreed to write-off state share-holdings in enterprises where the state held 10 percent or less of the total shares outstanding and whose book value was less than $50,000. Although the government decree enabling these write-offs was issued in May 2002, to date residual state shares have been transferred to only 18 enterprises. The government's effort to reduce its residual shareholding was addressed again in a September 2004 resolution. This new resolution allows the government to transfer its residual shareholdings, in the form of treasury bills, in those companies where the government holds less than 10 percent of the social capital and where the past five privatization attempts have failed. To speed up privatization, the government is currently considering the possibility of increasing the limits for writing-off residual shares from 10 to 33 percent.

147.   Since 2001, 27 enterprises (and a number of other "objects") have been excluded from the privatization program by Parliamentary decree. Among the excluded enterprises, the largest was the Cricova winery, declared a national heritage by Parliament at the end of 2003. A number of big Cereale (grain storage and processing) companies, one tobacco and several road and transport enterprises were also excluded from the program. The value of the states shares in the social capital of these excluded firms was slightly greater than the value of the state shares in the firms that were actually privatized.

E.   Unsuccessful Privatization in Telecom and Energy Sectors

148.   The government has made a number of unsuccessful attempts to privatize the state-owned telecom operator and the two remaining northern electricity distribution companies.[50] Following an unsuccessful attempt to sell "Moldtelecom" in 1998, another effort to privatize the company, with the assistance of a reputable international investment bank, was undertaken in 2002. Reflecting, in part, the depressed nature of the international telecom market, only one foreign company qualified to submit a tender offer, which was considered inadequate and thus was rejected by the government. Similarly, following an earlier unsuccessful attempt to privatize the two northern electricity distribution companies, they were again offered for sale in 2003. The privatization offer was cancelled, however, after only one bid was submitted. In its official declaration, the government noted legal restrictions on undertaking direct negotiations when only one bid was submitted. Following the cancellation, the individual privatization law for the energy sector was amended to reduce the required state share offered for sale in these companies from "75 percent +1" to "50 percent +1." The restriction on direct negotiations with a single bidder, however, was not addressed.

149.   In 2004, the pace of privatization slowed down to a crawl, as the government attempted to redefine its policy toward state property and privatization. In particular, the government is considering dividing enterprises into four groups: (i) those remaining under

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[50] The three southern electricity distribution companies were privatized to a Spanish investor, Union Fenosa, in 2000.

state property, to allow the state to perform its role in strategic sectors; (ii) those that can be offered for sale immediately; (iii) those that should be restructured prior to privatization; and (iv) those that can only be sold at a symbolic price.

F. Conclusion

150.   The modest performance in privatizing state assets in Moldova reflects a privatization process that has effectively stalled. Over the last four years, only 59 enterprises included in the privatization program have been privatized while 27 enterprises have been removed from the program. The general lack of interest on the part of strategic foreign investors in the privatization program reflects, in part, the perception that the business environment in Moldova is poor. Importantly, the cancellation of a number of privatizations, either for non-fulfillment of investment commitments or because of illegalities surrounding the original privatization effort, has contributed to denting investors' confidence in Moldova's privatization program.

151.   With limited access to foreign financing, the state budget is increasingly dependent on the mobilization of domestic financial resources, including privatization revenues. The original 2004 budget envisaged privatization revenues in the amount of MDL 356 million. By the end of 2004, however, this number was revised downward to MDL 85.6 million. For 2005, the budget includes privatization revenues in the amount of MDL 193 million. While the budget did not identify the enterprises that would be offered for sale, there are still a number of state enterprises that could attract investor interest. In addition to the telecom and energy companies, a number of large wineries, Cereale, and tobacco companies, as well as some enterprises in the light industry sector, remain in state hands.[51]

152.   In contrast to 2001, there now appears to be a greater interest in privatization on the part of government. This interest is reflected in the recently-adopted EGPRSP which includes acceleration in the privatization of industrial enterprises as a priority action.[52] At the end of 2004, in a meeting of the Privatization Committee chaired by the Prime Minister, a decision was taken to compile a much-needed inventory of state property. This analysis is the first step in the process of identifying which enterprises will remain under state property and which ones will be sold—either immediately, or after restructuring, or at a symbolic price. The decision also prohibits line ministries from promoting any proposals to eliminate

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[51] As of 2003, some 24 percent of the firms in the industrial sector had public or mixed ownership. These firms produced some 28 percent of total industrial output and employed 31 percent of the workers in the sector. (Statistical Yearbook of the Republic of Moldova, Table 15.2 – Main indicators of Industrial Enterprises Activity, by forms of ownership, 2004).

[52] Economic Growth and Poverty Reduction Strategy Paper (2004-2006), Section 6.6 Industry, Government of the Republic of Moldova, 2004.

enterprises from the privatization program. These and other efforts—most importantly actual privatizations—will be needed if Moldova is to foster confidence in its privatization program and improve its international reputation in this area.

VI. ENTERPRISE PROFITABILITY, INCOME TAX RATES, AND INCOME TAX REVENUES[53]

A. Introduction

153.   Notwithstanding reductions in corporate income tax (CIT) rates since the late 1990s, nominal revenue collections have been improving. Although CIT rates were cut by 3 percentage points in 2002 and 2003, nominal CIT revenue continued to increase every year, although it remained stable as a share of GDP (Figure 1).[54] This could be construed as evidence that more enterprises have been captured into the tax net. Indeed, the government considers the positive performance of nominal CIT revenue as an indication that tax rate cuts motivate enterprises to come out of the underground economy and/or declare more profits.

154.   This chapter explores the relation between CIT rates and CIT revenue. To verify whether we can substantiate the claim that lower CIT rates have encouraged enterprises to pay taxes, we assess if tax cuts have had an impact on *real*—rather than on nominal—*collection*. We derive collection in real terms both by deflating nominal CIT collection by a price index, and by dividing CIT revenue by enterprises profits. The advantage of using the second indicator is that it gives us an idea of how CIT revenue performed with respect to its base—profits.

Figure 1. Moldova: Corporate Income Tax Collection

Sources: Ministry of Finance; and Department of Statistics and Sociology.
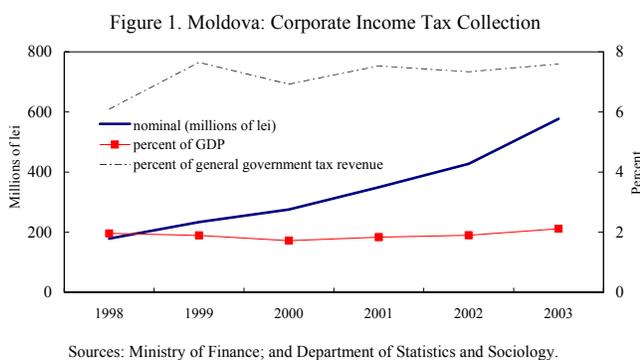
155.   The chapter is organized as follows. Section B explores the relationship between CIT revenue and enterprise profits in 1998-2003. Section C introduces a model of enterprise profits to analyze conditions we can establish a causal relationship between reductions in CIT rates and tax compliance by enterprises. Section D draws some conclusions.

B. Economic Recovery and Enterprise Profits

156.   The recent cuts in CIT rates coincided with a period of economic recovery following the 1998 regional crisis. When we consider CIT revenue in real terms (i.e., deflated by the CPI), it is clear that it started to improve already in 2001, before the 2002 reduction in tax rates (Figure 2). The boost in CIT collections followed the resumption of GDP growth from early 2000. Nevertheless, by 2003 the index of real CIT revenue was still 3 percentage points

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[53] Prepared by Edgardo Ruggiero and Milan Cuc.

[54] Following several cuts starting in 1998, CIT rates were reduced further, to 20 percent in 2004, and to 18 percent in 2005. An additional cut to 15 percent is planned for 2006, as envisaged in the medium-term expenditure framework covering the 2004–06 period.

lower than in 1997 because the
enterprise sector had been hit hard by
the 1998 crisis and started showing
signs of regional recovery only in
2000.

Figure 2. Moldova: Corporate Income Tax Rate vs. CIT
Collection Indices, 1997-2003

157.   To better capture profits
behavior, the analysis is based on
financial reports of enterprises,
banks, and insurance companies,
which include all CIT-paying
economic agents.[55] These are
provided, respectively to the
Department of Statistics and Sociology (DSS), the National Bank of Moldova (NBM) and the
State Insurance Supervision Agency (SISA). All registered enterprises have to report to the
DSS and no enterprise can be registered without the prior knowledge of the DSS; therefore
we assume that the *number of registered enterprises is equal to the number of existing
enterprises*. Since the data reported to the DSS are neither transmitted to the State Tax
Inspectorate (STI) nor used as a basis for CIT returns, this information has no implication for
enterprises' fiscal liability. Therefore, we can assume that the financial reports reveal the true
level of profits of enterprises, and that these revealed profits are not a function of the level of
CIT rate. We will refer to the profits reported to the DSS, NBM, and SISA as *economic
profits*—as opposed to fiscal profits reported to the STI.

158.   The combined DSS-NBM-SISA databases show that the level of economic
profitability of businesses increased dramatically in recent years (Figure 3a). With economic
recovery, businesses started to become profitable. For the first time since the early 1990s, in
2002 the volume of profits generated by economic agents was higher that the volume of their
losses—i.e., the sector as whole recorded a net income. The volume of net income generated
by profit-making economic agents more than doubled between 2001 and 2003. STI data on
profits tell essentially the same story as the combined databases used in this chapter—both
total profits and the number of CIT returns reporting profits as a share of total returns
increased markedly already in 2001, thus contributing to explain the turnaround in real CIT
revenue that occurred in that year (Figure 3.b).[56]

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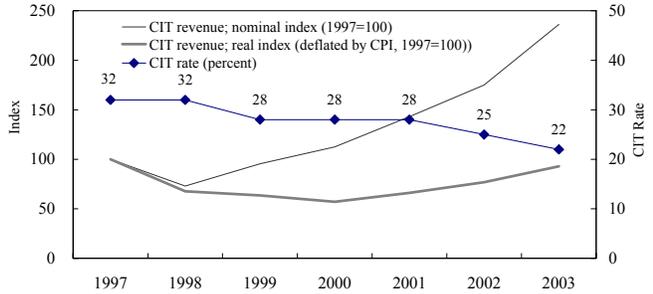
[55] In this chapter the terms economic agents, firms, companies, and businesses are used
interchangeably to indicate enterprises, banks, and insurance companies together. As of December 31,
2004, 16 banks and 33 insurance companies operated in Moldova.

[56] The STI dataset collects data from CIT returns, not from financial reports of economic entities.
Since economic entities often file two CIT returns in the same year to re-assess their CIT liability, the
STI dataset does not have readily available figures on the number of firms, which is needed for our
analysis.

Figure 3a. Economic Profitability of Companies 1/ (I)
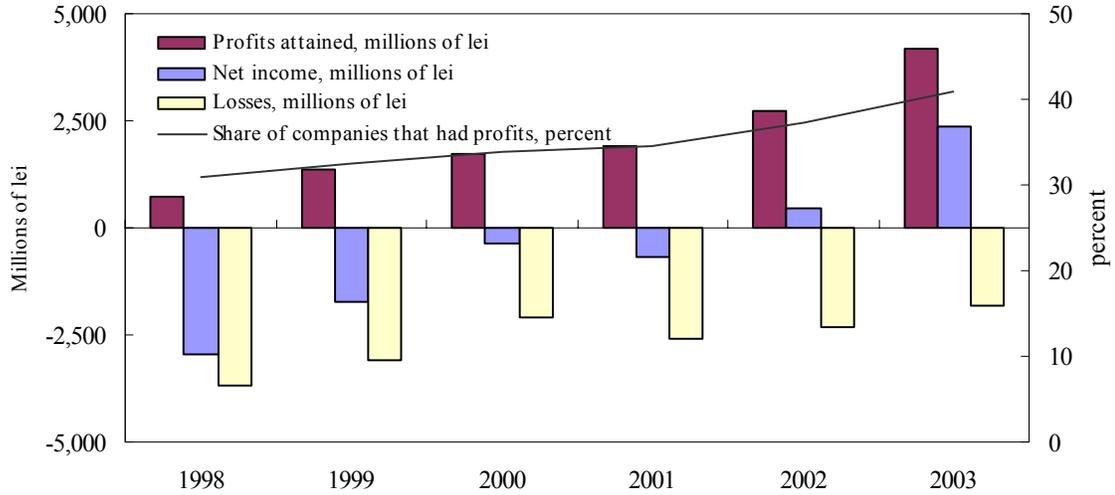

Figure 3b. Economic Profitability of Companies (II)
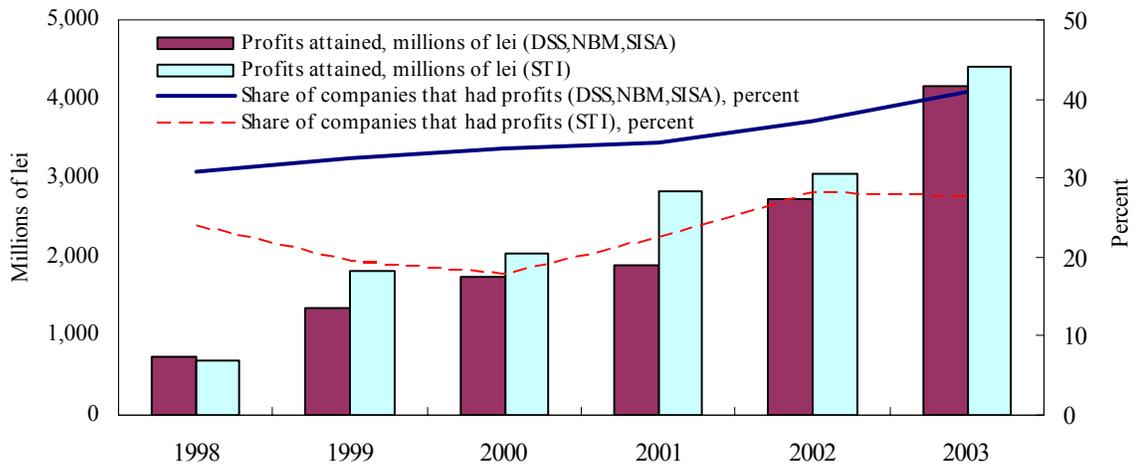
Sources: DSS; National Bank of Moldova (NBM); State Insuarance Supervision Agency (SISA); and State Tax Inspectorate (STI).

1/ Note: Only data from 1998 onward are shown because they reflect a new accounting system. As a result, the data reported before 1998 are not comparable.

159.   All variables contributing to the volume of profits—the number of registered firms, the percentage of firms reporting profits, and profits per profit-making firm—picked up in 1999 and gathered pace subsequently (Figure 4 and Table 1). Table 1 also suggests that, **in recent years, the most important factor driving profits has been the rate of growth of profits per reporting firm,** rather than the number of registered firms, or the ratio of the number of profitable firms to the total number of firms.[57]

Figure 4. Moldova: Components of Profits, Nominal GDP, and CIT Revenue Collected by General Government (Index, 1998=100)
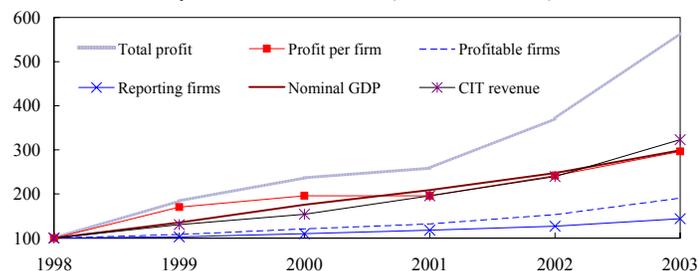
Sources: Ministry of Finance; DSS; NBM; and SISA.

Table 1. Moldova: Components of Profits, 1998-2003

	1998	1999	2000	2001	2002	2003
Total profits (MDL million)	737.2	1,358.2	1,743.6	1,906.7	2,733.0	4,162.8
Profit per firm (MDL thousand)	122.3	208.1	239.6	239.7	296.0	362.7
Profitable firms (in percent of total number)	30.9	32.6	33.9	34.6	37.3	40.9
Reporting firms (thousands)	19.5	20.0	21.5	23.0	24.8	28.1
Percentage change from previous year						
Total profits		84.2	28.4	9.4	43.3	52.3
Profit per firm		70.1	15.2	0.0	23.5	22.6
Share of profitable firms		1.1	1.1	1.1	1.2	1.2
Reporting firms		2.8	7.2	7.1	7.5	13.3
Memorandum items:						
Nominal GDP (percentage change)		35.1	30.0	18.9	18.4	21.0
Profitable firms (thousands)		6.0	6.5	7.3	8.0	9.2

Sources: Department of Statistics and Sociology, National Bank of Moldova, State Insurance Supervision Agency; and staff calculations

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[57] We can break down total profits (Π) into three components, according to the following formula:

$$\Pi = \Pi/F^R * F^R/F * F$$

where F is number of firms and the superscript R indicates "reporting profits." Thus, total profits can be decomposed into *profits per reporting firm* (Π/F^R); *reporting firms as a percent of total number of firms* (F^R/F); and *total number of firms* (F).

160.   Viewed against the background of improved business profitability, CIT collection performance does not appear as strong. To assess how CIT collection performed as the base on which CIT is assessed and paid increased, we computed the **Effective Rate of Collection** (ERC), which is the ratio between CIT collections and profits declared to the DSS, NBM, and the SISA (Figure 5). Thus computed, the ERC can be also interpreted as an indicator of real collections: the larger its distance from the CIT rate line, the lower the effectiveness of CIT revenue collection. The ERC line shows that the decline in real collections mirrored the decline in CIT rates—i.e., the distance between the CIT rate line and the ERC line remained constant. This means that **collection performance (CIT revenue per unit of CIT rate) did not improve as a result of lower CIT rates**. Thus, although CIT collections remained stable as a share of GDP, they declined as a share of economic profits. Therefore, it is at best unclear whether CIT rate cuts encouraged reporting of profits.

Figure 5. Moldova: Income Tax Rate vs. Effective Rate of Collection (In percent)
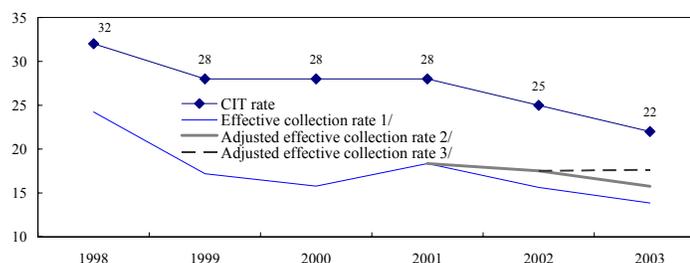
Sources: DSS; Ministry of Finance; NBM; and SISA.
1/ Ratio of CIT revenue (general government) divided by profits declared by economic agents.
2/ Implicit collections in 2002 (2003) at unchanged rate of 28 (25) percent.
3/ Implicit collections at unchanged rate of 28 percent.

161.   CIT collections in real terms would have increased with higher profitability of economic agents if CIT rates had not been cut. The two bolded lines jutting out of the ERC line in 2001 show how much CIT revenue would have been collected had CIT rates not been reduced (adjusted ERC lines).[58] The almost horizontal path of the adjusted ERC line II shows how much higher CIT revenue per unit of economic profits would have been had rates not been reduced. The distance between the CIT rate line and the Adjusted ERC lines narrows visibly, indicating that collection performance would have increased, essentially as a result of increased profitability, had rates been left at 28 percent.

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[58] The first (second) observation point in the middle ERC line shows how much CIT revenue would have been collected in 2002 (2003), had the CIT rate been left unchanged at 28 percent (25 percent)—i.e., for any given year, the base of the adjustment is the CIT rate in the previous year. The first and the second observation points in the upper line show how much CIT would have been collected in 2002 and 2003, respectively, had the CIT been left unchanged at 28 percent—i.e., for any given year, the base of the adjustment remains the 2001 CIT rate.

C. A Model of Business Profits

162.   In this section we develop a model of business profits to determine under what conditions lower CIT rates lead to improved compliance and a more-than-proportional increase in declared profits. We start from the basic national accounts identity:

$$Y = (\pi^R \cdot F^R + \pi^N \cdot F^N + w \cdot L)^{59}$$

Equation (1) states that GDP is the sum of business profits (reported and unreported) and labor income. Reported profits can be calculated as GDP minus unreported profits minus labor income:

$$\pi^R \cdot F^R = Y - \pi^N \cdot F^N - w \cdot L \qquad\qquad (2)$$

Profit tax revenue is defined as the tax rate times reported profits:

$$T = t \cdot \pi^R \cdot F^R = t \cdot (Y - \pi^N \cdot F^N - w \cdot L) \qquad\qquad (3)$$

as a share of GDP:

$$\frac{T}{Y} = t \cdot (1 - \frac{\pi^N \cdot F^N}{Y} - \frac{w \cdot L}{Y}) \qquad\qquad (4)$$

Differentiating (4) we can see how the profit tax/GDP ratio will change in response to changes in other factors:

$$d(\frac{T}{Y}) = dt \frac{\cdot \pi^R \cdot F^R}{Y} - t \cdot (d\pi^N \cdot \frac{F^N}{Y} + \frac{\pi^N}{Y} \cdot dF^N - dY \cdot \frac{\pi^{N \cdot} F^N}{Y^2} + dw \cdot \frac{L}{Y} + \frac{w}{Y} \cdot dL - dY \cdot \frac{wL}{Y^2})$$
$$........(5)$$

Equation (5) can be used to interpret developments over the 1998–2003 period. Figure 1 suggests that profit taxes as percent of GDP remained broadly constant throughout this period of observation:

$$d(\frac{T}{Y}) = 0 \qquad\qquad (6)$$

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[59] Y stands for nominal GDP; π for profit per firm; F for number of firms; w for average wage; L for employment; T for profit tax revenue; and t for profit tax rate. Superscripts R, N denote "reported" and "nonreported" profits, and "reporting" and "nonreporting" firms.

Combining (5) and (6), we obtain:

$$dt \cdot \frac{\pi^R \cdot F^R}{Y} = t \cdot (d\pi^N \cdot \frac{F^N}{Y} + \frac{\pi^N}{Y} \cdot dF^N - dY \cdot \frac{\pi^{N \cdot} F^N}{Y^2} + dw \cdot \frac{L}{Y} + \frac{w}{Y} \cdot dL - dY \cdot \frac{wL}{Y^2}) \qquad (7)$$

writing $\frac{dX}{X} = \hat{X}$, so that

$$\hat{t} \cdot \frac{\pi^R \cdot F^R}{Y} = (\hat{\pi}^N + \hat{F}^N - \hat{Y}) \cdot \frac{\pi^N \cdot F^N}{Y} + (\hat{w} + \hat{L} - \hat{Y}) \cdot \frac{w \cdot L}{Y} \qquad (8)$$

Equation (8) shows that for the tax revenue/GDP ratio to remain constant ($d(T/Y)=0$, as shown in Figure 1) in the face of a tax rate cut ($\hat{t} < 0$), one or two things must have happened:

(a) Total unreported profits grew at a lower rate than nominal GDP (first term on the right-hand side of equation (8)):

$$\hat{\pi}^N + \hat{F}^N < \hat{Y} \qquad (9)$$

and/or:

(b) Overall profitability in the economy, measured in percent of GDP, improved—i.e. nominal GDP growth exceeded the wage bill growth (second term on the right-hand side of equation (8)):

$$\hat{w} + \hat{L} < \hat{Y} \qquad (10)$$

163.   This allows us to consider alternative explanations for the observed behavior of tax revenue in the 1998–2003 period. The revenue/GDP ratio remained constant despite the tax rate cuts either because: (a) overall profitability (as percent of GDP) increased; or, (b) overall profitability did not increase, but tax compliance improved. Case (a) in itself does not rule out improvement in tax compliance, but requires additional analysis to confirm its presence.

164.   We use the conceptual framework outlined above to assess these alternative explanations. Table 2 summarizes the salient data for the period 1998–2003, suggesting a better fit for alternative (a): profits as a share of GDP rose from 41.5 to 45.3 percent of GDP during this period. Additional analysis is therefore required to explain the role of unreported profits.

Table 2. Moldova: Labor and Profit Shares, 1998–2003			
	1998	2003	percent change
Nominal GDP (Y), millions of lei	9,122	27,297	199.2
Profit tax revenue (T), millions of lei	179	578	222.9
T/Y, percent	2.0	2.1	7.9
Tax rate (t), percent	32.0	22.0	-31.3
Profits (gross operating surplus), millions of lei	3,787	12,366	226.5
in percent of GDP	41.5	45.3	9.1
Wage bill (W) 1/	5,335	14,931	179.9
W/Y	58.5	54.7	-6.5
Sources: Authorities' data; and staff estimates.			
1/ Total value added excluding profits: includes wage bill plus indirect taxes net of subsidies.			

165.   To operationalize the conceptual framework for this exercise, we rearrange equation (4) to obtain

$$\frac{T}{t \cdot Y} = 1 - \frac{\pi^N \cdot F^N}{Y} - \frac{W}{Y} \qquad (4b),$$

where $W = \dfrac{w \cdot L}{Y}$

Differentiating (4b), we obtain

$$d\left(\frac{T}{t \cdot Y}\right) = -d\left(\frac{\pi^N \cdot F^N}{Y}\right) - d\left(\frac{W}{Y}\right) \qquad (11)$$

To highlight the behavior of unreported profits ($\pi^N F^N$), we rewrite equation (11) as

$$d\left(\frac{\pi^N \cdot F^N}{Y}\right) = -d\left(\frac{W}{Y}\right) - d\left(\frac{T}{t \cdot Y}\right) \qquad (12)$$

Equation 12 states that the change in unreported profits as a share of GDP is the (negative) sum of two components: the wage share, and tax revenue as a share of GDP divided by the tax rate.

Using data from Table 2, we calculate that

$$d\left(\frac{W}{Y}\right) = \text{-0.038}; \ d\left(\frac{T}{t \cdot Y}\right) = 0.035; \text{ and, hence } d\left(\frac{\pi^N \cdot F^N}{Y}\right) = 0.003$$

166.   In other words, unreported profits increased slightly as a share of GDP between 1998 and 2003. To determine the change in unreported profits, we need information on the share of unreported profits in the initial period, which is not available. Table 3 presents the results under alternative assumptions for the initial share of unreported profits.

Table 3. Moldova: Change in Unreported Profits, 1998–2003						
Assumption						
unreported/total profits, 1998	**0.500**	**0.333**	**0.250**	**0.100**	**0.078**	**0.050**
Calculations						
unreported profits/GDP, 1998	0.21	0.14	0.10	0.04	0.03	0.02
change in T/(tY), 1998-2003	0.035	0.035	0.035	0.035	0.035	0.035
change in W/Y, 1998-2003	-0.038	-0.038	-0.038	-0.038	-0.038	-0.038
change in unreported profits/Y, 1998-2003	0.003	0.003	0.003	0.003	0.003	0.003
unreported/total profits, 2003	**0.465**	**0.312**	**0.236**	**0.098**	**0.078**	**0.052**
change, 1998-2003	**-0.035**	**-0.021**	**-0.014**	**-0.002**	**0.000**	**0.002**
Source: staff calculations.						

167.   Table 3 suggests that the effectiveness of tax rate cuts in enlarging the tax base—by bringing into the tax net companies that until then had avoided their fiscal obligations—depends critically on the initial share of unreported profits in total profits.[60] In 1998–2003, unreported profits may have declined as a share of total profits, particularly if their share was relative large in the initial period. However, it is possible that they may have increased somewhat, if their initial share was already relatively small. For example, if the initial share of unreported profits was one-third, this share would have declined by 2.1 percentage points—from 33.3 percent to 31.2 percent. In contrast, if the initial share was only 5 percent in 1998, the share of unreported profits is estimated to have edged up to 5.2 percent by 2003.[61]

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[60] If we assume that average profits per firm are the same for reporting and nonreporting firms, then the changes in unreported profits relative to total (or reported) profits are due to changes in the relative numbers of reporting and nonreporting firms.

[61] If the initial share of unreported profits in total profits was 7.8 percent, it remained unchanged.

168.   We can use this framework to assess the likely impact of a further cut in the CIT rate to 18 percent in 2005. Table 4 shows the estimates for the needed decline in unreported profits between 2003 and 2005 to (i) keep total profits as percent of GDP constant, and (ii) to keep tax revenue-to-GDP ratio constant. The objective of keeping the tax-to-GDP ratio unchanged becomes particularly challenging if unreported profits are relatively small. For example, with unreported profits of 10 percent of total profits, the number of nonreporting firms would need to be cut in half. If unreported profits account for 5 percent of total profits, they would need to be practically eliminated (brought down to 0.3 percent).

Table 4. Moldova: Change in Unreported Profits Required to Keep Tax/GDP Constant, 2003–05						
Assumptions						
corporate tax rate, 2003	0.22	0.22	0.22	0.22	0.22	0.22
corporate tax rate, 2005	0.18	0.18	0.18	0.18	0.18	0.18
unreported/total profits, 2003	**0.500**	**0.333**	**0.250**	**0.100**	**0.078**	**0.050**
Calculations						
unreported profits/GDP, 2003	0.23	0.15	0.11	0.05	0.04	0.02
change in T/(tY), 2003–05	0.021	0.021	0.021	0.021	0.021	0.021
change in W/Y, 2003–05	0.000	0.000	0.000	0.000	0.000	0.000
change in (unreported profits/Y), 2003–05	-0.021	-0.021	-0.021	-0.021	-0.021	-0.021
unreported/total profits, 2005	**0.453**	**0.286**	**0.203**	**0.053**	**0.031**	**0.003**
change, 2003-2005	**-0.047**	**-0.047**	**-0.047**	**-0.047**	**-0.047**	**-0.047**

Source: staff calculations.

D. Conclusions

169.   There is much merit in lowering tax rates. High tax rates have been found to impose a deadweight loss on the economy by giving rise to market distortions—particularly if accompanied by various tax exemptions and incentives—and to encourage the development of the informal economy. Hence, in transition economies where market forces are increasingly important in allocating resources, the Fund has advocated that the tax systems be as neutral as possible so as to minimize interference in the allocation process. Ostensibly, the authorities' strategy to lower tax rates responds to these considerations.

170.   However, cutting tax rates is risky in terms of revenue collection, because firms' response is uncertain *ex ante*. Will the hitherto nonreporting firms be enticed to join the formal economy? Will the lower tax rates help spur economic activity, leading to higher incomes and higher revenue collection? This chapter has investigated the first question—to what extent lower corporate tax rates have led to better compliance.

171.   The main findings are as follows:

- The recent reductions in CIT rates were set in motion immediately after the onset of a period of economic recovery, characterized by a surge in enterprise registration and profitability.

- Nominal tax revenue continued to grow, notwithstanding reductions in the CIT rate, although its growth appears less impressive in relative terms—when deflated by the CPI or when measured against enterprise profits.

- Available data do not allow us to unequivocally conclude that CIT reductions led to improved tax compliance in 1998–2003. Indeed, the set of conditions under which this may have happened is rather restrictive. In particular, the results depend on the initial number of nonreporting enterprises, which is not known.

- The analysis highlights the revenue risks from future tax rate reductions, particularly if (i) profits remain constant as a share of GDP; and (ii) the relative size of nonreported profits is small.

172.   Our analysis indirectly underscores the importance of complementing tax rate reductions with measures to broaden the tax base. That would not only help minimize the risk of revenue losses, but would be desirable on economic efficiency and equity grounds. Refraining from granting new tax incentives and exemptions, and rolling back the existing ones, is an area where the Moldovan authorities should now focus their attention.