

Ukraine: Selected Issues

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Selected Issues

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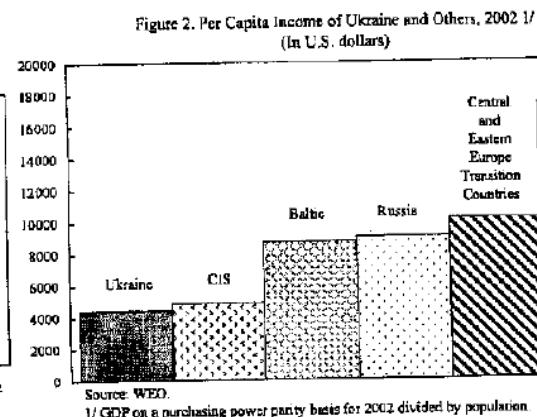
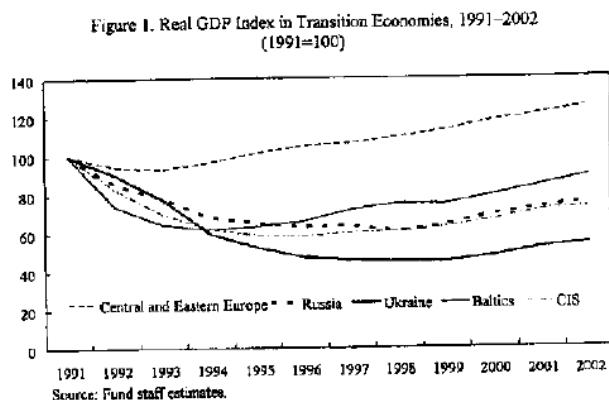
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I. LONG-TERM GROWTH PROSPECTS¹

1. This chapter examines the main factors explaining Ukraine's growth performance so far, assesses whether the recent recovery is sustainable, and provides a quantitative analysis of long-term growth prospects. It finds that the recent recovery is not yet self sustaining and estimates that long-run per capita GDP growth on the order of 4–5 percent per year would be possible only if structural reforms are accelerated.

A. Ukraine's Growth Experience So Far

2. The period following independence was characterized by a deep protracted fall in output. Over the 1990s, real GDP fell by approximately 55 percent on a cumulative basis. Ukraine suffered the largest cumulative decline in output among the transition countries, only surpassed by Georgia, Moldova and Tajikistan (Figure 1). As of 2002, Ukraine's per capita income was well below other transition economies and slightly below the CIS average (Figure 2).² Several factors contributed to this development:

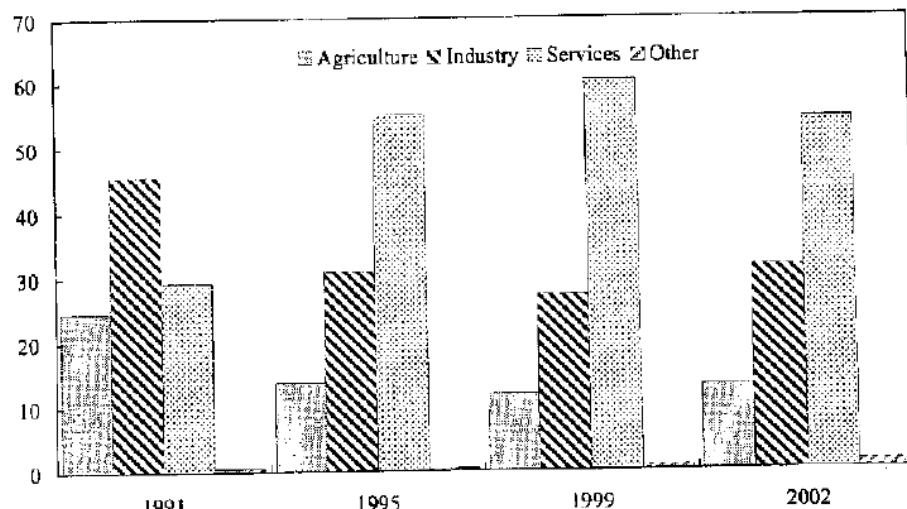


- **Unfavorable initial conditions:** Ukraine inherited a highly industrialized economy, heavily reliant on subsidies and excessively dependent on energy. Industry (mainly steel, chemicals, shipbuilding, coal, machine tools and weaponry) made up a relatively large share of output, amounting to close to 50 percent of output at the onset of the transition process. As a result of the loss of traditional markets, manufacturing output fell sharply, declining by over 60 percent in the first 5 years of transition. It also fell markedly as a share of GDP (Figure 3).

¹ Prepared by Sheila Bassett.

² Based on purchasing power parity and official GDP. As discussed in Chapter 2, the official statistics may underestimate the true level of GDP.

Figure 3. Ukraine: Share of GDP, 1991–2002



Sources: Ukrainian authorities; and Fund staff estimates.

- **Uneven macroeconomic management:** Prudent macroeconomic policies were not consistently pursued during the first decade of transition, prolonging the output decline. After initial progress reducing inflation and stabilizing the exchange rate, the macroeconomic performance deteriorated. The combination of policy slippages and adverse external shocks culminated in a financial crisis in 1998/99. An attempt to defend the exchange rate proved futile, and the currency depreciated sharply from September 1998 through December 1999.
- **Piecemeal reforms:** While good progress was made early on with trade and price liberalization, progress in deeper institutional reforms lagged behind. This compares with the experience of other CIS countries, but significantly lags progress made in more advanced transition countries. Improvements were made in the regulatory and legal environment of the financial sector. While progress was made in privatization, greater advances were made in small-scale privatization than large-scale privatization. Little progress was made in improving governance and in enterprise restructuring³ (Figures 4 and 5).

³ Restructuring was discouraged by substantial quasi-fiscal activities in the energy sector and tax privileges, as well as weak enforcement of bankruptcy legislation and little action to strengthen competition and corporate governance. In the case of banking, there was progress with liberalization of interest rates and limiting the use of directed credit, but banks remained weak with high nonperforming loans high, with lending mainly concentrated in traditional sectors.

Figure 4. Reform Progress in Transition Countries, 2002

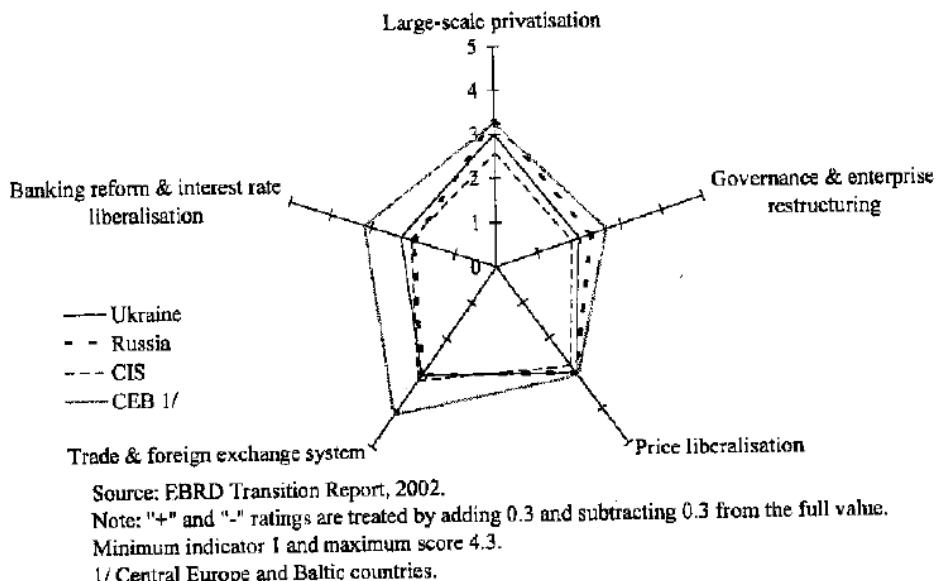
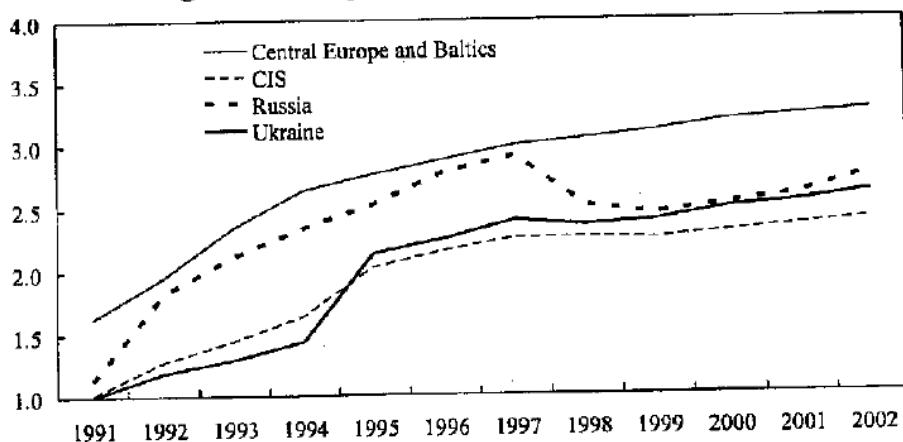


Figure 5. Average Transition Indicators, 1991–2002 1/



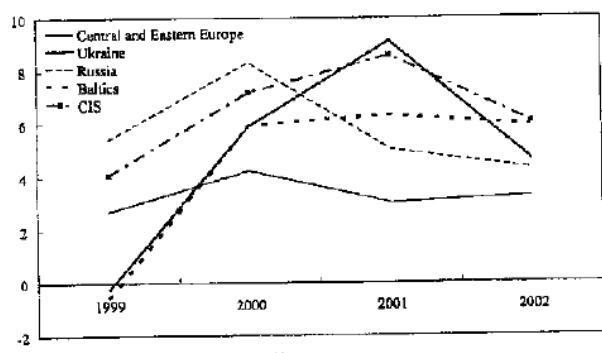
Source: EBRD.

1/ The index scores progress in transition on a scale from 1 to 4, with 1 meaning no reforms and 4 meaning full transition to a market economy.

3. **The economic recovery started in late 1999.** In 2001, growth reached 9 percent, and then slowed to below 5 percent in 2002, in line with other countries in the region (Figure 6). Growth has been largely export led (Figure 7). Russia provided an important engine for Ukraine's export growth in 2000. Since then there is evidence that Ukraine has been able to reorient its exports away from CIS countries, with exports of oil and machinery gaining at the

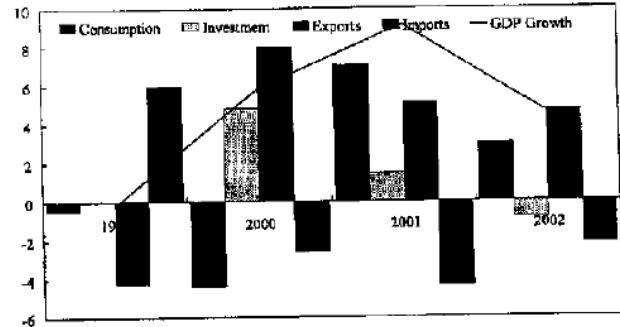
expense of traditional sectors, such as metals and chemicals. Consumer spending strengthened in 2001–02, fueled by higher real wages. Import substitution also appears to have played a role, reflected in strong growth in sectors that normally sell to the domestic market such as food products. Several key factors appeared to play a role in the economic recovery⁴:

Figure 6. GDP Growth in Ukraine and Others, 1999–2002



Sources: Fund staff estimates, and WEO.

Figure 7. Ukraine: Contributions to GDP Growth by Expenditure Category, 1999–2002



Sources: Ukrainian authorities, and Fund staff estimates.

- **Macroeconomic stabilization:** Prudent fiscal and monetary policies since end-1999 ensured a stable environment and helped to increase confidence in the domestic economy. This was reflected in rapid remonetization and the reduction in nonmonetary transactions. The fiscal position improved significantly, even registering a small surplus in 2002.⁵ At the same time, inflation was brought down to very low levels.
- **Excess capacity combined with low real wages:** Given the large decline in output compared to other transition countries, it is possible that there was an overshoot relative to productive potential.⁶ In addition, declines in real wages through 1999, including the sharp depreciation of the currency during 1998–99, finally made unused capacity

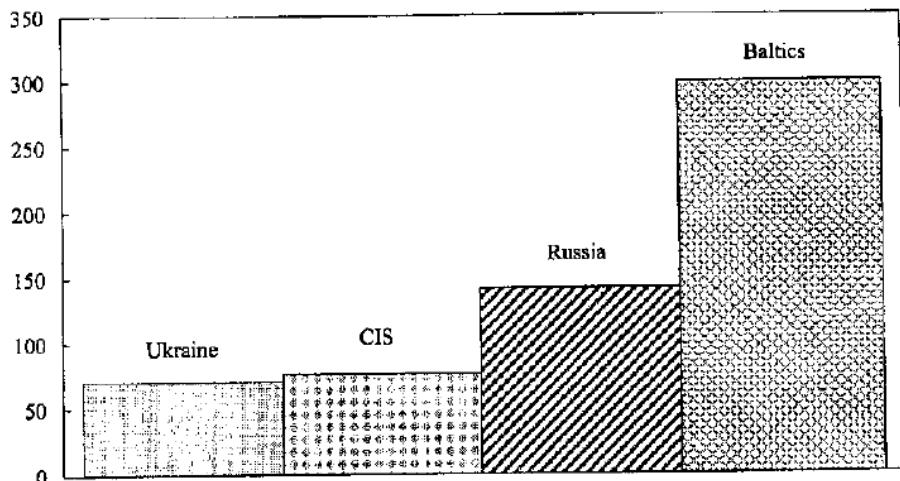
⁴ These factors are explored in “An Interim Assessment of Ukrainian Output Developments, 2000–01,” IMF Working Paper, WP/02/97, by J. Berengaut, E. De Vrijer, K. Elborgh-Woytek, M. Lewis, and B. Lissolvolik.

⁵ Some tentative regression results suggest that the change in the reduction in the fiscal balance was positively correlated with growth. In addition, foreign demand, measured by Russian GDP, also was found to be positively related to growth.

⁶ Some estimates suggest that annual growth in the order of 5% percent for 6 years could be achieved before reaching full capacity (see Berengaut, et. al., 2002). This is based on the assumption that economies at the start of the transition process faced similar degrees of distortion and that the subsequent decline in output mainly reflected the policy framework. This would imply that countries where output dropped further than average, experienced a type of “overshooting” relative to productive potential due to poor policy implementation.

profitable and helped competitiveness. While real wage growth has picked up significantly since then, the level of wages remains low relative to other countries (Figures 8).

Figure 8. Ukraine: Average Wages Relative to Russia, CIS, Baltics, 2002
(U.S. dollars per month)



Sources: Ukrainian authorities; and Fund staff estimates.

- **External factors:** Exports rebounded in 2000, reflecting strong demand from Russia—Ukraine's largest trading partner—which provided a ready market for exports in traditional sectors (Table 1). In addition, financial flows from Russia, including transfers and investment in Ukrainian oil refineries, supported the recovery.

Table 1. Russia's Role in Ukraine's Recovery
(in percent)

	1999	2000	2001	2002
Russia: growth of real imports (total)	-7	22	26	10
Ukraine: real export growth (total)	-10	21	12	8
Share of Russia in Ukraine's total exports	20	24	22	18

Source: Fund staff estimates.

- **Reforms in several key areas:** Progress was made in land reform in the agricultural sector. Since 2000, the government began leasing communal properties in the agricultural sector to individuals which contributed to higher output in the sector. Increased cash collections in the energy sector and the elimination of offsets and promissory notes in the fiscal area enhanced the remonetization process. There is also some evidence of learning about marketing in traditional industries. For instance, Ukrainian producers were able to reorient their exports to other countries, including Asia in 2002, as anti-dumping measures imposed by some trading partners threatened metals exports.⁷

B. Is the Recovery Sustainable?

4. **On the supply side, there is still significant excess capacity.** As a result, the factors of production are not yet fully utilized, suggesting that the recovery may continue for a while longer using the existing capital stock. Unemployment remains relatively high and output remains well below its level at the beginning of the transition process, in contrast to many other transition countries.⁸ There is some evidence of gains in productivity in the manufacturing sector, and low relative wages could preserve competitiveness for a while. Productive capacity has also increased in the agricultural sector, due to land reform. However, its steep decline in earlier years suggests that it too has unused capacity.

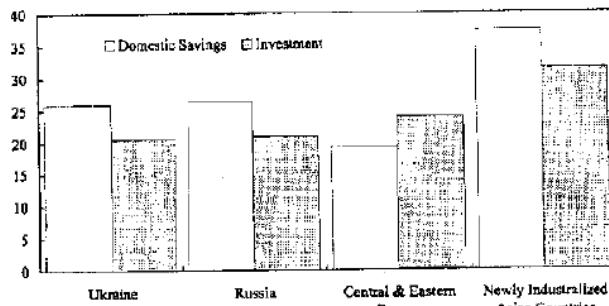
⁷ Since 2000, the share of exports to non-CIS countries has increased from about 69 percent to 76 percent, most of which went to the EU and EU accession countries, including Turkey, during 2001–02. Fuel and machinery and food items recorded gains in share of exports, while chemicals and metals registered declines.

⁸ As of 2002, Ukraine's output had risen to about 55 percent of its 1991 output level. This compares to 125 percent in the central and eastern European transition countries, 90 percent in the Baltics, and 75 percent in Russia.

5. Gross fixed investment has yet to play a major role in sustaining growth (see paragraph 13 below). Gross fixed investment growth was slower on average than output growth over 2000–02. The relatively low level of investment is not due to a lack of domestic savings. In Ukraine's case, the domestic savings ratio is significantly larger than the investment ratio, as reflected in the large current account surplus and low FDI. It contrasts sharply with the experience of the Central and Eastern European and Baltic countries, where investment exceeded domestic savings and was partially financed by foreign capital during the period 1995–2000. It also differs from investment performance of the newly industrialized Asian countries during their rapid growth period, when the average investment-to-GDP ratio was much higher than in Ukraine (Figure 9).

6. The lack of well-functioning institutions pose significant obstacles to new businesses and investment. The recent business investment survey conducted by the EBRD and World Bank suggests that after taking into account the improvement in macroeconomic conditions, the business environment has worsened in Ukraine.⁹ Small and medium-sized enterprises cite a lack of access to finance and policy instability as key factors inhibiting their development.¹⁰ FDI is discouraged by an incoherent, ineffective and nontransparent legal system. Moreover, frequent legislative, regulatory modifications contribute to a discretionary and unpredictable investment climate. At the same time, tax exemptions and quasi-fiscal activities in the energy sector that largely benefit the traditional sectors have created an uneven playing field for small and medium-sized businesses¹¹ (Figures 10 and 11).

Figure 9. Savings-Investment Balance, 2000-02 I/
(In percent of GDP)



Source: WEO.

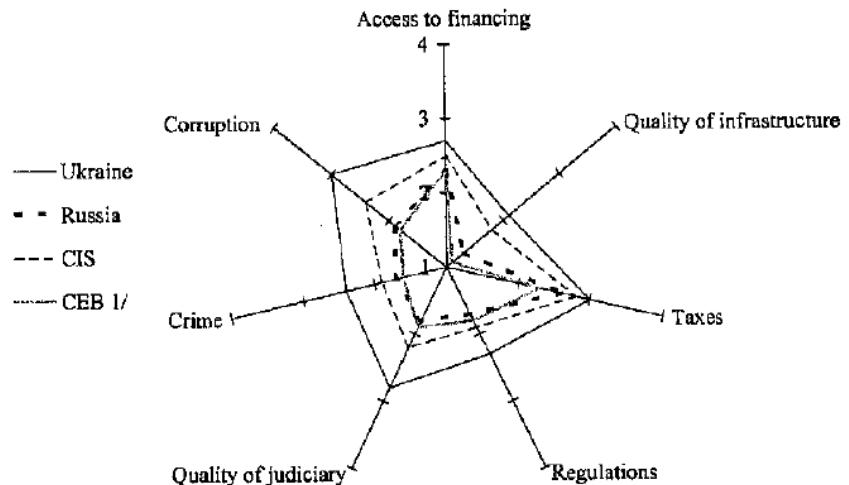
I/ Averages for 2000-2002, except Central and Eastern Europe where the average is for 1995-2000 and Newly Industrialized Asian Countries where the average is for 1988-95.

⁹ EBRD (2002).

¹⁰ EBRD (2000).

¹¹ See Chapter 3 on tax reform and Chapter 6 on the energy sector for further discussion.

Figure 10. Qualitative Reform in Business Environment, 2002

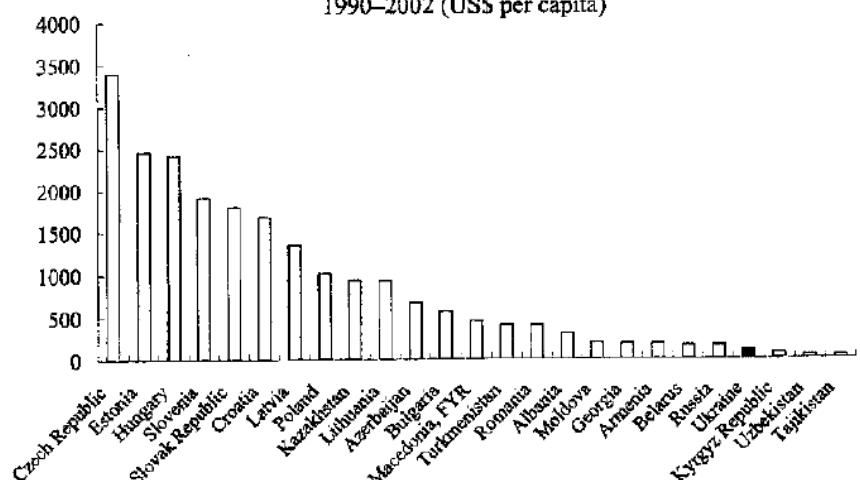


Source: EBRD Transition Report, 2002, Business and Enterprises Performance Survey, 2002.

Note: Ratings are from 1-4 with 1 indicating no obstacles and 4 indicating major obstacles.

1/ Central Europe and Baltics countries.

Figure 11. Cumulative Foreign Direct Investment in Transition Economies,
1990–2002 (US\$ per capita)



Source: WEO.

7. Experience suggests that new small and medium-sized firms are key to growth in the more successful transition countries.¹² New enterprises tend to be more cost efficient

¹² See World Bank, 2002, "Transition—The First Ten Years: Analysis and Lessons for Eastern Europe and the Former Soviet Union."

and demand oriented. They have an advantage in that they can freely develop new market opportunities in contrast to existing enterprises which may be encumbered by past business decisions, such as product lines, investment and location. They also tend to be more responsive and flexible to changes in the markets and more competitive due to small size and close relationship between ownership and managerial control.

8. **In Ukraine, the performance of private startups has been more successful than other types of enterprises.** Value added is higher in private start-ups compared with privatized and state-owned enterprises. Most of these enterprises are small (less than 50 employees). The number of SMEs rose significantly, by some 10 percent in 2000. These firms were mainly in the agricultural sector reflecting the transformation of collective farms to private farms; but there were also new firms in transport and property sectors. In addition, small businesses taxes, introduced in 1999, provide substantial tax relief to qualifying businesses, on account of high eligibility thresholds.

9. **Even though Ukraine's economic situation has improved, significant vulnerabilities remain.** These include the risks of a sharp downturn in the external environment and a possible loss of confidence that could limit the opportunity to borrow on international capital markets. This might result in a liquidity crunch as occurred in 1998–99. Rapid remonetization has also fueled very high credit growth in the banking sector that is increasing credit risk. Quasi-fiscal activities in the energy sector and arrears could undermine progress in budget consolidation.

C. Quantitative Assessment of Long-Run Prospects

10. **A number of recent studies have analyzed growth prospects for the transition countries.** Earlier work was based on the hypothesis of growth convergence, where poorer countries "catch up" with more advanced countries based on their investment rates in human and physical capital (Levine and Renelt, 1992). More recent work has tried to take into account the impact of institutional quality, as well as measurement problems relating to human capital and the hidden economy, and the initial scope for catch-up (Crafts and Kaiser, 2001). Table 2 below compares growth projections from 3 different equations. The first two equations (LR1, LR2) are based on the Levine-Renelt growth equation and are estimated over the period 1960–1989 and 1960–1999, respectively. The third equation (CK) includes an indicator of institutional quality: the rule of law indicator developed by staff at the World Bank.

11. **Ukraine's per capita income growth projections are in the range of 2–5½ percent per year (Table 2), depending on the model used and the sample period.¹³** The significant range reflects the sensitivity of these estimates to the period of estimation as well as the

¹³ Since population is projected to fall by 0.9 percent per year on average over the period 2000–2010, this implies GDP growth in the range of 1–4½ percent.

institutional quality indicator. The higher growth projections in the LR1 model reflect in part an earlier estimation period, which yielded a higher coefficient on investment and also increased the effect of the “catch up” variable. The CK model yields the lowest growth projections as it tries to capture the generally weak institutional framework of the transition countries through the rule of law indicator. The growth projections for Ukraine compare with a projected range of 2.8–5.5 percent average growth in the EU accession countries among the transition countries and an average of 2.2–5.1 percent for CIS. The effect of 2000 data on the projections is small mainly because the investment ratio changed little relative to 1998.

Table 2. Per capita Income Growth Projections 1/

	LR1	LR2	CK
Ukraine			
1998 data	5.4	3.3	2.1
2000 data	5.4	3.4	2.2
EU accession transition economies	5.5	3.4	2.8
CIS countries	5.1	3.4	2.2

Sources: Crafts and Kaiser, 2001; and Fund staff estimates.

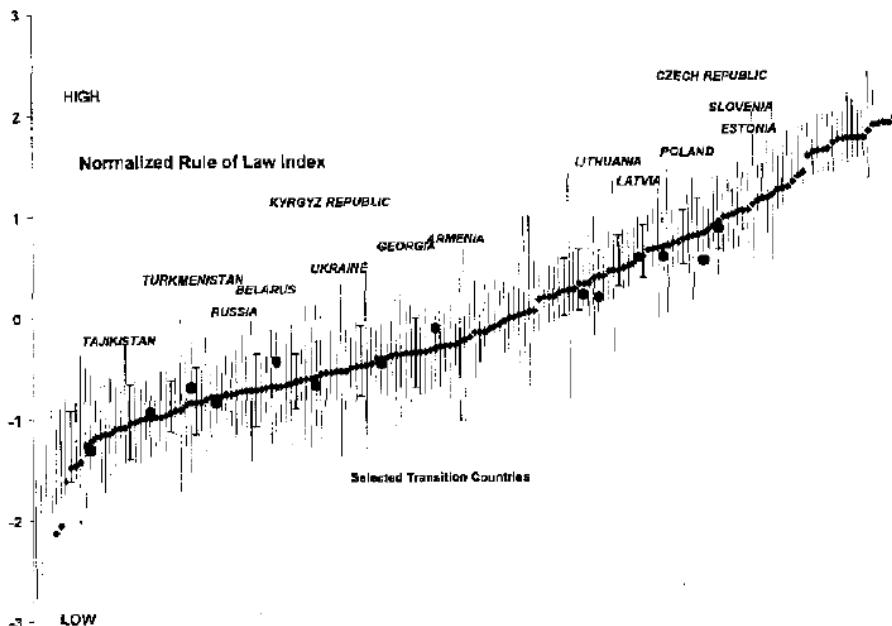
1/ Projections based on 1998 data, except Ukraine where both 1998 and 2000 data are shown.

12. **The growth projections suggest that investment-oriented reforms and significant improvements in institutional quality are needed to sustain high rates of growth.** This is particularly evident when institutional quality is factored into the growth equation (CK), given Ukraine's relatively low ranking on the rule of law indicator and the large positive coefficient (1.06) for the indicator of rule of law in the CK equation (see Figure 12). Thus, if Ukraine were to achieve an improvement in the rule of law indicator of 0.5 (still below the Baltics), per capita income growth could increase by an additional ½ percentage point.

13. **The literature on transition countries suggests that macroeconomic stabilization and structural reform are key to economic growth.** Havrylyshyn (2001) summarizes the five key points that emerge from recent studies on the determinants of growth.¹⁴ First, stabilization, especially the control of inflation, is a necessary first step before sustainable growth can occur. Second, while stabilization is a necessary condition, many of the studies identify structural reform (or market liberalization) as the most important factor. Third, initial conditions (e.g., overindustrialization and price distortions) and other factors specific to countries have some impact on growth. Fourth, institutions matter and increasingly over time. Fifth, the studies found that traditional factor inputs do not explain growth over time and across countries. Investment ratios have little or no explanatory power, in fact empirical evidence suggests that investment tends to increase only after growth has begun to recover. Efficiency gains appear to be the main source of initial growth. Aggregate investment becomes increasingly critical in sustaining growth as the recovery proceeds.

¹⁴ Oleh Havrylyshyn, Recovery and Growth in Transition: A Decade of Evidence, IMF Staff Papers, Volume 48, 2001.

Figure 12. Rule of Law Indicators, 2001



Source: "Governance Matters II: updated Indicators for 2000–01" by Daniel Kaufmann, Aart Kraay and Pablo Zoido-Lobaton, Jan 2002.

14. The growth accounting framework suggests that achieving per capita growth on the order of 4–5 percent per year would require significant reforms (Table 3). In this approach, long-term growth is decomposed into contributions from labor, capital and total factor productivity (TFP) growth. The shares of labor and capital are based on the Cobb-Douglas production function, with elasticities for capital and labor with respect to output equal to 0.3 and 0.7, respectively. This framework implies that long-term growth in Ukraine will largely depend on gains in investment and TFP growth, given the constraints posed by the demographic projections. While it may be possible to raise the contribution of labor through higher labor participation rates or by raising the effective contribution of labor¹⁵ through learning by doing, these factors may not be sufficient to offset the decline in the working age population. Thus achieving per capita growth of 4–5 percent would require reform measures to strengthen property rights and governance and raise investment. TFP growth would also be expected to be connected with increased FDI and improved institutional quality. Rough calculations for the transition countries suggest that TFP on average grew by 1.4 percent over the period 1995–2001, with Ukraine experiencing negative growth. For comparison, the Baltic countries had average TFP growth of 3 percent over this

¹⁵ The argument is that the effective contribution of human capital can be increased due to the experience of working in a market economy.

period and China had estimated TFP growth of 4 percent.¹⁶

Table 3. Ukraine: Growth Accounting Framework¹⁷

	GDP growth	Capital Stock (% change)	Labor (% change)	TFP (% change)	Investment to GDP Ratio (percent, average)
Baseline	4.0	8.5	-0.5	1.8	23.3
Upside	6.0	10.3	0.0	2.9	25.3
Downside	2.0	6.2	-0.9	0.8	20.1

Source: Fund staff estimates.

1/ The growth accounting framework is based on a Cobb-Douglas production function: $dQ = .3*dK + .7*dL$, where dQ is the change in output, dK is the change in the capital stock and dL is the change in labor. The residual of the estimated change in output from the Cobb-Douglas production function is total factor productivity (TFP). The capital/output ratio is assumed to be 1.5 percent and depreciation is assumed to be 5 percent. Investment to GDP ratio for 2002 was estimated to be 20.1 percent.

D. Summary and Conclusions

15. **Ukraine's recovery is not self-sustaining.** Unused capacity seems to be playing a significant role in the recovery, reflecting the large initial drop in output during the 1990s. Competitiveness is currently supported by relatively low wages. However, a poor investment climate is contributing to low investment, including FDI, compared to more successful transition economies. While it may be possible to extend the recovery for several more years, sustained long-run growth will require increases in investment and productivity, as wages rise and the capital stock ages and deteriorates further.

16. **Long-run per capita growth on the order of 4–5 percent per year would be possible, if structural reforms are accelerated.** This would imply catching up to the poorest EU country in about 50 years.¹⁷ Ukraine's business climate poses a significant bottleneck to investment and is poor in relation to other transition countries. Per capita growth above 4–5 percent might be possible, but this would require radical reforms.

¹⁶ Fund staff estimates based on data from the World Economic Outlook data base.

¹⁷ This is based on a 2 percent per annum increase in per capita GDP in EU countries. The income gap depends on the measure of GDP used. For this calculation, catch-up is based on a purchasing power parity measure of per capita GDP. This figure used for Ukraine is about three times the level of Ukraine's per capita GDP valued at the current exchange rate. While the size of the PPP adjustment seems large, this adjustment does not take into account the impact of underestimation of GDP due to the informal economy. Ukraine's informal sector is among the largest of the transition countries, according to recent studies. See Chapter 2.

17. **To achieve sustainable growth, Ukraine needs to advance on reforms to improve the business climate.** Significant increases in investment and productivity will be needed to sustain growth, as wages increase and the capital stock deteriorates. Ukraine's demographics and the weak institutional environment are likely to constrain long-run growth. Even so, Ukraine has the potential to attract significant FDI, if measures are taken to improve the business climate, given its proximity to EU accession countries, large resource endowment, relatively low wages, and its sizeable internal market. A long-run rate of real per capita GDP growth on the order of 4–5 percent would compare favorably with the experience of some of the more successful transition countries, such as Hungary and Poland, where per capita GDP growth averaged 5 percent, in the eight years following recovery.

18. **The reform agenda for sustainable growth over the medium term might include measures to:**

- Encourage a level playing field for business by eliminating tax exemptions and privileges; abolishing the use of Free Economic Zones; and eliminating VAT refund arrears.
- Measures to hold public institutions accountable; strengthen the judiciary and the enforcement of contracts; and strengthen corporate governance, including through the use of international accounting standards and financial disclosure.
- Reduce regulatory obstacles that impede trade, business formation, and restructuring. This should include efforts to reduce licensing and registration fees and strengthen the implementation of bankruptcy procedures for banks and other enterprises.
- Energy sector reform is needed to ensure that resources are allocated efficiently. In particular, quasi-fiscal operations should be reduced, including through tariff reform and resolving electricity sector debts of the state-owned oblenergos.
- Continue with privatization under open and transparent procedures. Establish an appropriate regulatory framework for the telecom sector and reduce the number of enterprises that are excluded from privatization. Continue with titling of land and development of a land cadastre to facilitate land ownership and its use as collateral for loans.
- Strengthen bank capitalization and banking supervision. Improve access to credit by SMEs, including by strengthening creditor rights.

II. MEASURING UKRAINE'S SHADOW ECONOMY¹⁸

19. This chapter discusses how the shadow economy has been measured in Ukraine and compares the results with studies of other transition economies. It also analyzes recent economic developments and indicators in Ukraine, with a view to assess the size of the shadow economy.¹⁹

A. Statistical Estimates of Ukraine's Shadow Economy

20. **Gathering information on the shadow economy is important for the conduct of economic policy.** The existence of a large informal economy may increase the risk of policy mistakes based on distorted data. Moreover, information on the shadow economy is important if the aim is to reduce such economic activities, which can inhibit competition and discourage foreign investment. Firms operating in the shadow economy may lose services related to banking and in other sectors, and their workers may have limited access to the social safety net services.²⁰

21. **Like most other transition economies, Ukraine has faced the challenge of reorienting its statistics from the so-called system of material production to the system of national accounts.** The process was made more difficult by transition-related structural changes in the economy, most notably deregulation and privatization. These developments affected statistical observations, data collection, and the recording of activities in the enterprise and household sectors. The most notable effect was that the number of economic units increased. The task of collecting data of these new (often small) enterprises has been a challenge and statistical agencies in many transition economies had to make drastic changes in their work methods.

22. **Ukraine's statistical authorities have started to impute informal activities in their recorded GDP data.** The State Statistic Committee (SSC) has developed a comprehensive framework for estimating the size of the shadow economy and has included estimates for the shadow economy in their GDP statistics starting in 1995. The total adjustment has amounted on average to 20 percent of GDP, including about 15 percent for

¹⁸ Prepared by Peter Löhmus.

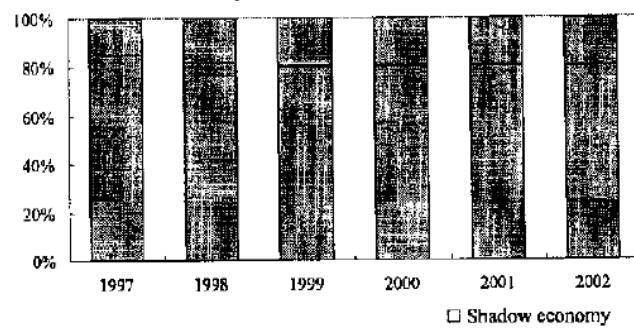
¹⁹ This text distinguishes the *shadow* (informal, unofficial) economy and the *legal economy*. Official GDP (or 'GDP'), includes both the legal economy and some part of the shadow economy, based on official estimates.

²⁰ Eilat, Yair and Zinnes, Clifford. The Shadow Economy in Transition Countries: Friend or Foe? A Policy Perspective. World Development Vol. 30, No 7, pp. 1233–1254, 2002.

household activities and 5 percent for enterprises (Figure 13). The biggest contributions to this estimate are from agriculture (almost half), followed by trade and industry.^{21,22}

Figure 13. Ukraine: Shares of the Legal and Shadow Economy

Recorded by Official Statistics, 1997–2002



Source: Ukraine Research Institute of Statistics.

□ Shadow economy
■ Legal economy

23. **The applied methodology may leave a part of the informal economy unaccounted for, especially activities by large enterprises.** Industry, dominated by large industrial companies, makes up 40 percent of Ukraine's GDP, compared to only 12–13 percent for agriculture. Anecdotal reports of asset stripping and other illegitimate activities in the industrial sector suggest that the shadow economy is not limited to small businesses.²³ According to Dean (2002), the comparison with other transition economies also suggests that the structure of Ukraine's adjustments to the official GDP overweight agriculture. Even a small change in the adjustor for industry would be significant; increasing the share of the industrial sector from the current 5 percent to 10 percent would raise Ukraine's officially reported GDP by 2–3 percent, or Hrv 5–6 billion.

24. **A detailed research project on the shadow economy is being implemented.** The existing analytical framework applied by the SSC has been supported analytically by its research arm, the Research Institute of Statistics (RIS). By adjusting internationally accepted

²¹ Dean, J. "Why Most Measures of the "Unofficial Economy" are Systematically Wrong: With Illustrations from Ukraine." Paper presented at the conference of the Institute of Public Finance, Zagreb, Croatia. October 18–19, 2002.

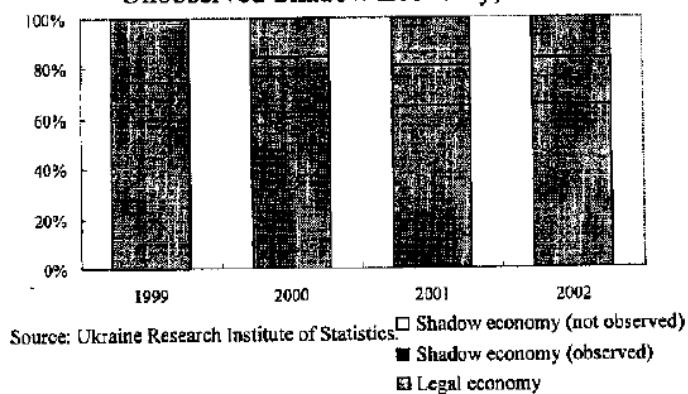
²² Based on information available to the staff, the share of shadow economy reflected in the official statistics ranges from 10 to 30 percent in the region, with the lowest in Belarus and the highest in Georgia, Moldova and Armenia.

²³ For instance, a significant share of foreign direct investment—mostly into large enterprises—are reported to originate from small countries known as tax havens. In 2002, these countries accounted for almost 20 percent of FDI inflows.

methodologies for regional specifics, the techniques applied by the RIS include financial, monetary (Guttman's method), electricity consumption, and incomes and expenses based methods. The institute has also initiated an analysis of aerospace photographs for assessing unreported activities in the agriculture, evaluating the size and quality of crops.

25. According to an unofficial and preliminary report of the RIS, the share of the shadow economy may be twice as large as in official estimates.²⁴ This estimate of the shadow economy would imply an upward adjustment of GDP by almost 25 percent (see Figure 14).²⁵

Figure 14. Ukraine: Shares of the Observed and Unobserved Shadow Economy, 1999–2002



B. Evidence on the Size of the Shadow Economy

26. A cross-country comparison of key indicators lends some support to the hypothesis that the size of the shadow economy and therefore nominal GDP is underestimated in Ukraine. In particular, in terms of tax collections and monetization, as measured in ratios to official GDP, Ukraine is not far off more advanced transition economies in Central and Eastern Europe (CEE) and the Baltics (Tables 4 and 5). This stands in sharp contrast to Ukraine's relatively low level of per capita GDP (Table 6) and wages (Table 7). For instance, tax revenue as a share of GDP increased to over 30 percent in 2002 is line with the average level in the CEE and Baltic countries, countries which are reportedly five times richer in terms of per capita GDP and wages. Broad money as a share of GDP is also relatively high. While anecdotal evidence suggests that Ukraine's banking sector is less

²⁴ In November 2002, a press release of the Ministry of Economy cited these unofficial results.

²⁵ The RSI estimates are not official and are part of a research project on the shadow economy in Ukraine. The changes in the methodology, proposed by the RIS, have to be approved by the Methodological Commission of the SSC before they could be used by the official statistics.

developed than Lithuania's,²⁶ both countries had about the same broad money-to-GDP ratio in 2002. It is also difficult to explain the high level of international trade relative to GDP in Ukraine, given its large size (Table 8).

Table 4. General Government Tax-to-GDP Ratios
in Transition Economies, 1997–2002 1/ 2/

	1997	1998	1999	2000	2001	2002
Ukraine	33.4	34.3	30.1	28.0	27.9	31.2
Russia	36.0	31.5	32.3	35.3	34.9	...
CIS	21.1	22.1	21.1	20.8	21.4	...
CEEC and Baltics	34.0	34.0	33.3	32.3	31.4	...

Sources: GFS and IMF staff estimates.

1/ Includes taxes collected by central and local governments.

2/ Unweighted averages for CIS, Baltics and CEE countries.

Table 5. Broad Money to GDP Ratios
in Economies of Transition, 1997–2002

	1997	1998	1999	2000	2001	2002
Ukraine	13.4	15.2	16.8	18.6	22.1	28.6
Russia	18.4	22.9	20.7	21.4	23.5	26.2
CIS	13.5	15.2	14.5	16.2	16.9	19.5
CEEC and Baltics	31.4	30.5	32.4	34.1	37.1	38.5

Source: IFS.

1/ Includes foreign currency deposits.

2/ Unweighted averages for CIS, Baltics and CEE countries.

Table 6. Per Capita GDP in Economies of Transition,
1997–2002 (In U.S. dollars) 1/

	1997	1998	1999	2000	2001	2002
Ukraine	990	832	633	632	765	850
Russia	2902	1920	1323	1778	2135	2402
CIS	889	814	673	750	782	...
CEEC and Baltics	3104	3399	3338	3349	3649	...

Source: WEO.

1/ Unweighted averages for CIS, Baltics and CEE countries.

Table 7. Average Wages in CIS and Baltics, 1997–2002 1/
(In U.S. dollars)

	1997	1998	1999	2000	2001	2002
Ukraine	77	62	43	42	58	71
Russia	167	114	64	80	113	140
CIS	64	64	52	57	68	...
Baltics	219	247	263	259	274	...

Source: EU2 Centralized Database.

1/ Unweighted averages for CIS and Baltics.

Table 8. Exports and Imports to GDP
in Economies of Transition, 1997–2002

	1997	1998	1999	2000	2001	2002
Ukraine (48.9 million) 1/	84	87	100	120	111	110
Poland (38.6 million)	51	52	49	50	46	...
Estonia (1.4 million)	168	170	159	192	185	...
Hungary (10.3 million)	110	115	116	136	138	...
Russia (145.1 million)	49	64	78	74	65	67

Source: WEO.

1/ Population (most recent available estimates, in millions).

27. Cross-country comparisons of the shadow economy suggest that Ukraine's unofficial economy is much larger than estimated by the official statistics. In a number of studies, Ukraine has the largest share of unofficial economy among the largest in the CIS, Baltics, and Central and Eastern European countries. Since 1995, the estimates from various

²⁶ On per capita basis (to avoid using GDP ratios), the banking sector assets are 3 times and the credits extended almost 4 times higher in Lithuania.

studies on the size of the shadow economy have been in the range of 50–120 percent of GDP.²⁷ As in most transition economies, the share of the unreported economy has been increasing in late 1990s. In a comprehensive cross-country study, Schneider²⁸ finds that the share of Ukraine's informal economy reached 51 percent of official GDP on average for 2000–01. As shown in Table 9, this is well above the unweighted averages of the group of the CIS and Baltics (45 percent), and the Central and Eastern European countries (29 percent). Based on most recent data, Dzvinka²⁹ finds that the share of Ukraine's shadow economy may have risen from 52 percent in 2000 to 60 percent at end-2001.

Table 9. A Comparison of the Shadow Economy
Relative to Official GDP, 1994–2001 1/

	1994–95	1996	2000–01	
	Schneider (2002)	Johnson et al. (1997)	Eilat, Zinnes (2002)	Schneider (2002)
Ukraine	47	90	115	51
Russia	41	69	54	45
FSU	40	67	71	45
CEEC	25	22	41	29
OECD	16	17

Sources: Schneider (2002), Eilat and Zinnes (2002), Johnson et al (1997).

1/ Electricity method is used in Schneider (2002) Johnson et al;

Eilat, Zinnes use modified total-electricity approach.

2/ OECD data are based on 2001–02.

C. Recent Trends

28. **There is no conclusive evidence on the dynamics of the shadow economy.** The above discussion indicates that the shadow economy and official GDP are most likely significantly underestimated. It is less clear whether the share of the shadow economy has been fluctuating or remained constant as implied by the SSC estimates included in the official GDP series. While the cross-country literature discussed above generally finds an increase in the shadow economy in recent years, other indicators suggest that the shadow economy may be in decline. There are also some indications that economic activities may move in and out of the shadow economy, distorting the official GDP growth rates.

²⁷ Some studies are not explicit whether their calculations allow for the fact that, as a norm, most countries attempt to incorporate at least some parts of shadow economy into their official GDP data.

²⁸ Schneider, F. "The Size and Development of the Shadow Economies and Shadow Economy Labor Force of 22 Transition and 21 OECD Countries: What do we really know?" Paper presented at the conference of the Institute of Public Finance, Zagreb, Croatia. October 18–19, 2002.

²⁹ Dzvinka, R. "How Does the Unofficial Economy Interact with the Official One?" Thesis. The National University of "Kiev-Mohyla Academy," 2002.

29. **The most common proxies for assessing the shadow economy have stabilized or declined** (Table 10). Non-monetary transactions have decreased significantly. The gradual decline in unemployment and stable labor force participation also point to a retrenchment of the shadow economy. The role of cash, widely used in unofficial economy, has also declined relative to bank transactions, though the evidence is not conclusive without data on foreign currency in circulation.

Table 10. Ukraine: Selected Economic Indicators, 1997–2002 (In percent)

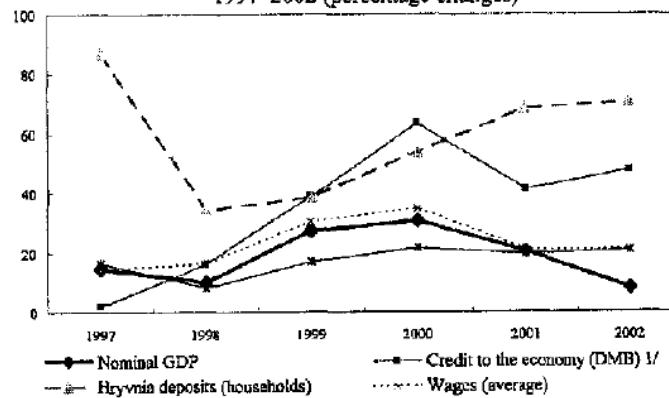
	1997	1998	1999	2000	2001	2002 I/
Unemployment (average)	9.8	11.3	12.4	12.2	11.2	10.0
Share of economically inactive people in the labor force	29.2	29.2	37.7	36.5	37.3	37.0
Share of cash in broad money	56.4	57.8	58.0	52.0	52.7	50.7
Share of non-cash transactions in industry	57.3	38.7	35.5	19.4
Share of shadow economy in the total estimated GDP (RIS estimates)	43.6	42.7	40.4	37.3	35.6	34.7
Share of shadow economy in the official GDP (RIS estimates)	15	18	20	20	20	20

Sources: Ukraine State Statistics Committee, Ukraine Research Institute of Statistics and Staff estimates and projections.

I/ RIS estimates are based on 9 months.

30. **Large fluctuations in economic growth rates give conflicting signals.** Recent trends in a number of economic indicators have diverged significantly from the official GDP growth rates (Figure 15). Following a buoyant 20 percent increase in 2001, nominal GDP growth slowed down considerably in 2002, to only 8 percent. This contrasts with continued high growth rates for wages (21 percent), taxes (21 percent), bank loans (51 percent) and private deposits (70 percent). Although structural reforms may have contributed to remonetization and improvements in tax collection, the size of the divergences suggests that the shadow economy may have grown more rapidly than official GDP, especially in 2002.

Figure 15. Ukraine: Selected Economic Indicators, 1997–2002 (percentage changes)



Source: Fund staff estimates and projections.
I/ Bank credits are mostly short-term, minimizing lag effects.

D. Conclusions

31. **The discussion suggests that Ukraine's GDP may be significantly underestimated.** Based on existing studies, the total economic activity not captured in the official statistics was probably at least Hrv 50 billion in 2002, or 23 percent of the official GDP. The evidence on the dynamics of the shadow economy is less clear cut.

32. **The possible underestimation of GDP has implications for economic policy.** For instance, the discussions on current tax reforms may be affected by the tax-to-GDP ratio, which would be lower if the estimate of the shadow economy is increased. In addition, a large unofficial economy also implies that movements in and out of informal activities may have macroeconomic implications. Monetary policy could be affected by large fluctuations in money demand, and the execution of fiscal policy could be hindered since an increase of the shadow economy can unexpectedly shrink the tax base. To the extent that the shadow economy is not captured by statistics, it may well distort the official growth rates, although it is not clear whether this has been the case in recent years.

33. **Structural reforms will be important in reducing the shadow economy.** To discourage informal activities and encourage growth, the government intends, *inter alia*, to reduce tax rates and provide tax amnesties for the return of illegally expatriated funds. However, recent literature suggests that institutional reforms could be more important than tax rate changes. Regulatory discretion and corruption are key determinants of underground activity in Ukraine, implying the need to enhance transparency and strengthen governance in public and private institutions.

III. TAX REFORM IN UKRAINE³⁰

34. This chapter studies taxation issues in Ukraine with a special focus on tax revenue structure and the nature and revenue costs of tax preferences. Section A discusses recent trends of Ukraine's tax system. Section B discusses the role of the tax revenue mix and draws lessons from comparisons with other transition economies. Section C evaluates tax preferences and possible options for their rationalization and other base-broadening measures. Section D provides some conclusions.

A. Trends in Ukraine's Tax System

35. **Ukraine's tax system performed poorly in recent years, in terms of revenue, economic efficiency, and social equity.** Taxes as a ratio of GDP fell by 6 percentage points of GDP between 1998 and 2001, before rebounding in 2002. Despite some positive tax changes, the economic efficiency of the tax system has been hampered by the lack of adjustment of specific excise rates for inflation, the introduction of poorly designed tax incentives, and the steady decline of VAT revenue. The accumulation of large VAT refund arrears in recent years also contributed to increase efficiency costs. The social equity effects of the tax system have likely deteriorated mainly as a result of the absence of adjustment of the personal income tax thresholds for inflation.

36. **Ukraine places a higher tax burden on labor than on consumption and capital.** In 2002, labor taxes represented 45 percent of total tax revenue, consumption taxes

³⁰ Prepared by Vincent Moissinac; the chapter benefited from contributions by Ihor Shpak.

32 percent, and capital taxes 22 percent (Table 11). Payroll taxes alone, levied at a total rate of about 40 percent, raised close to 30 percent of total tax revenue in 2002, compared to only 20 percent for the VAT. Non-tax revenue has remained consistently strong, contributing 14 percent of total government revenue in 2002. This reflects the extensive role of government in the economy. Fees collected by government agencies for providing services, mainly in the social sectors, amounted to 3 percent of GDP in 2002. The large size of the public sector is also reflected in capital and property revenue, which was 1 percent of GDP in the same year.

37. **The tax burden declined steadily in the aftermath of the 1998/99 financial crisis.** The revenue decline was driven by the erosion of revenues of the enterprise profit tax and the VAT. Tax administration weaknesses, amplified by frequent tax amnesties and a proliferation of tax exemptions, and the fast changing economic environment were the main underlying factors. The decline in profit tax revenue has been uniform across former Soviet countries. Ebrill and Havrylyshyn (1999) explain that it reflects falling profitability, common administrative difficulties, and the removal of Soviet-era type taxes (such as excess wage taxes). The fall of VAT revenue seems, however, more peculiar to Ukraine and mainly reflects administrative inefficiencies, extensive noncompliance in unreformed economic sectors such as energy, and base contraction as a result of the introduction of simplified tax regimes (see below). The rapid expansion of exports and, to a lesser extent, investment may have induced a natural reduction in the VAT base, but these effects remain limited (see World Bank 2002)

38. **Tax revenue recovered remarkably in 2002, partly as a result of improved tax administration.** Indirect tax revenues were boosted without any changes in rates, by requiring more systematically the payment of VAT and excises on imports at the border. The use of 90-day promissory notes for paying the VAT on imports was significantly restricted, leaving this option only for producers directly importing their production inputs. In the same vein, the authorities started to require the payment of excises on energy goods used in tolling arrangement (such as Russian gas refined in Ukraine then re-exported). Another positive VAT administration change was to require customs certification at the border to clear VAT refunds. In addition, most tax preferences for imports of foreign joint ventures (e.g. import duties and VAT exemptions) were discontinued during the year, following protracted legal proceedings.

39. **The 2002 rebound in tax revenue was also underpinned by a steady increase in personal income tax and payroll tax revenues since 1999.** The income tax increase has been highly regressive because it has partly resulted from the non-indexation of the non-taxable threshold and income brackets. Payroll tax revenue has recovered from the loss caused by the 1999 rate reduction, due to rapid wage increases and improved compliance, following the clearance of pension arrears and implementation of individual contribution accounts.

Table 11. Ukraine: Consolidated Government Revenue 1997-2002

	1997	1998	1999	2000	2001	2002
(In percent of GDP)						
Total revenue	36.7	35.6	31.9	33.4	33.5	36.5
Tax revenue	33.4	33.9	30.1	28.0	27.9	31.2
Capital	8.7	8.1	7.1	6.5	7.0	6.8
Profit tax	6.1	5.6	4.9	4.5	4.1	4.3
Resource extraction taxes	1.3	0.3	0.2	0.4	0.5	0.5
Energy transit taxes	0.0	0.4	0.2	0.3	1.1	0.8
Tax for industrial water use	0.2	0.1	0.1	0.1	0.1	0.1
Business licenses	0.0	0.5	0.4	0.3	0.3	0.3
Land tax	1.1	1.1	0.8	0.8	0.8	0.8
Other 1/	0.0	0.2	0.4	0.1	0.0	0.1
Labor	12.5	13.2	11.3	11.0	12.2	14.0
Personal income tax	3.5	3.5	3.4	3.8	4.3	4.9
Payroll taxes	8.9	9.7	7.9	7.2	7.9	9.1
Consumption	11.4	11.6	11.2	10.1	8.4	10.0
VAT	8.1	7.3	6.4	5.6	5.1	6.1
Excises	1.2	1.3	1.4	1.3	1.3	1.9
Pension fees 2/	0.0	0.0	0.0	0.6	0.6	0.7
Import duties	0.8	0.9	0.9	0.9	1.0	1.1
Other 3/	1.3	2.1	2.4	1.7	0.5	0.3
Unallocated taxes 4/	0.9	1.0	0.5	0.4	0.4	0.4
Non tax revenue	3.2	1.7	1.7	5.4	5.6	5.2
(In percent of tax revenue)						
Tax revenue	100	100	100	100	100	100
Capital	25.9	24.0	23.5	23.3	25.0	21.9
Profit tax	18.2	16.4	16.2	16.2	14.5	13.6
Resource extraction & other royalties	3.9	0.9	0.8	1.3	2.0	1.7
Energy transit taxes	0.0	1.1	0.7	1.1	3.8	2.5
Tax for industrial water use	0.6	0.4	0.3	0.4	0.5	0.4
Business licenses	0.0	1.4	1.4	1.2	1.1	0.9
Land tax	3.2	3.2	2.8	2.9	2.8	2.6
Other 1/	0.0	0.6	1.2	0.2	0.2	0.2
Labor	37.3	38.8	37.6	39.2	43.7	44.9
Personal income tax	10.6	10.3	11.3	13.4	15.4	15.7
Payroll taxes	26.7	28.5	26.3	25.8	28.3	29.2
Consumption	34.2	34.2	37.1	36.0	30.0	32.0
VAT	24.4	21.4	21.4	19.8	18.2	19.6
Excises	3.7	3.7	4.6	4.7	4.7	5.9
Pension fees 2/	0.0	0.0	0.0	2.2	2.0	2.2
Import duties	2.3	2.8	3.2	3.3	3.4	3.4
Other 3/	3.9	6.2	8.0	6.0	1.8	0.9
Unallocated taxes 4/	2.6	3.0	1.8	1.6	1.3	1.2

Source: Ministry of Finance.

1/ Depreciation deduction, fixed agriculture tax.

2/ Temporary excise surcharges (tobacco and alcohol products), tax on jewelry and cell phones, and taxes on foreign exchange and real estate transactions; these taxes are earmarked to the pension fund.

3/ Vehicle tax, road tax, and taxes for innovation fund.

4/ State duties, taxes for energy stabilization fund, and some local taxes.

40. **Earlier tax reforms focused on the VAT and reducing the payroll tax rate.** Positive changes were made to the structure of the VAT, by shifting to the destination principle (1997) and extending the use of accrual accounting to the energy sector (1999–2001). The elimination of a 12 percent payroll tax earmarked for the Chernobyl fund was also an important step (1998–1999).

41. **The authorities are working on comprehensive tax reforms that should produce a unified Tax Code.** Legal amendments were passed in late 2002 that change the structure of the enterprise profit tax (see Box 1). In addition, excise tax rates for petroleum products were unified and the administration of alcohol excise taxes was improved. A draft personal income tax law was approved in the second reading in March 2003. This law would establish a 13 percent flat tax as in Russia. The authorities also plan to reform the VAT law with a view to overhaul administration procedures (such as registering and refund release processes), reduce exemptions, and reduce the rate (currently 20 percent).

Box 1. Enterprise Profit Tax Reform in 2002

Parliament passed amendments to the profit tax law in late 2002.

The structure of the tax was changed:

- the standard rate is to be reduced from 30 to 25 percent starting in 2004;
- a fourth category of depreciable assets for computer and IT equipment is created and depreciation rates for existing categories are all increased by 60 percent starting in 2004;
- length limitations for loss carry-forwards were suppressed ;
- freight services provided by nonresident companies are now subject to taxation; and
- insurance service taxation was upgraded;
- the taxation of insurance activities and financial leasing was upgraded, including by fine-tuning the definition of taxable transactions.

Measures were taken to address tax avoidance:

- the tax administration was given powers to verify prices underlying tax liabilities using fully defined methods; and
- economic tests were introduced for deductions associated with payments to taxpayers enjoying tax breaks or non-resident status and the write-off of bad debts.

Administration was simplified by setting the tax on an annual basis.

B. Macroeconomic Aspects of Tax Reform

42. The economic effects of tax reform depend on the resulting tax burden and tax structure. Economic theory points to the importance of the impact of taxes on capital accumulation but with ambiguous predictions, made more uncertain by country idiosyncrasies. International comparisons are therefore a useful guide for tax reform deliberations.

Level and Composition of Tax Revenue

43. **Efficiency and equity considerations do not provide unequivocal prescriptions for the level of tax revenue or the tax mix.** In theory, the tax-to-GDP ratio should reflect the efficiency of public spending and the tax mix should take into account the effects of taxes on physical and human capital accumulation and labor supply. The conventional belief is that taxing income entails a higher efficiency cost than taxing consumption. Income tax, containing elements of both labor tax and capital tax, reduces the taxpayer's ability to save. Taxing consumption, while discouraging labor for leisure, is in theory neutral on growth because it does not affect the relative price of future consumption. These results are however not robust and the impact of taxes on human capital should be taken into account. For instance, Tanzi and Zee (1996) explain that growth-depressing effects of a tax on physical capital can be offset by faster human capital accumulation.

44. **The scope for tax reforms may be limited by country-specific constraints.** For Ukraine, a large share of agriculture in total output (11 percent to 12 percent), a large informal economy, and the fast growth of small business establishments may limit the scope for assessing high tax rates or relying on certain modern taxes, such as personal income taxes and, to a lesser extent, value-added taxes. Other constraints stem from limited tax administration capacities and political set-ups often less amenable to rational tax policy than in advanced economies.

45. **Against these uncertainties, international comparisons can help identify appropriate directions for tax reforms.** Tanzi and Zee (2000) find that economic development leads to both higher tax revenue levels and a shift in the composition of tax revenue from consumption to income taxes, from trade taxes to taxes on domestic goods and services, and from corporate to personal income. The propensity of developing countries to rely more on consumption taxes seems robust through time, with consumption taxes yielding about twice as much revenue as income taxes. This presumably reflects both difficulties to administer efficiently personal income taxes and the need to encourage capital accumulation. The reliance on capital taxation is also increasingly limited by the liberalization of capital movements.

Tax Structure Comparisons

46. **Transition countries have followed different reform paths.** In terms used by Aslund (2001), central European countries opted for systems reminiscent of socially-oriented market economies common in western European and Scandinavian countries. These tax system are characterized by high tax ratios, high VAT and payroll taxes, progressive income tax rates, and low profit taxes and import tariffs. In turn, the Baltic countries pioneered more liberal and simple tax systems, imposing a lower tax burden and with VAT as the main tax, high flat income taxes, and low taxes on payroll, profits, property, and foreign trade. Recent reforms in Russia were a step in that direction. More simple tax systems were adopted by countries like Georgia, Kazakhstan, and the Kyrgyz Republic in the mid-1990s. In the

aftermath of major revenue collapse, Georgia adopted a system with the same rate for the enterprise profit rate, the personal income tax (top rate), and the VAT, and low social security taxes. However, reforms in those countries were often hampered by the reintroduction of tax exemptions, thus limiting any dramatic revenue improvement.

47. Tax system comparisons of Ukraine with other transition economies indicate the following (Tables 12 and 13):

Table 12. Tax Revenue Composition (for Consolidated General Government)

Country	Year	Taxes on Income, Profits, and Capital Gains ^{1/}						Domestic Taxes on Goods and Services						Ratio of Corporate to Personal Income Taxes			
		Tax Revenue	Direct Taxes	Total	of which	Social Security Taxes	Other Payroll Taxes	Property Taxes	Indirect Taxes	Total	of which	Other Indirect Taxes	Other Taxes	Ratio of Income to Consumption Taxes			
(In percent of GDP)																	
Ukraine ^{2/}	2002	31.2	20.5	10.5	4.9	4.3	9.1	0.0	0.8	10.4	9.3	6.1	1.9	1.1	0.4	1.1	0.9
Russia ^{2/}	2002	34.9	18.9	9.8	3.3	4.3	7.7	0.0	1.4	14.7	11.8	6.9	2.4	2.9	1.1	0.8	1.3
Belarus ^{2/}	2002	42.1	21.0	6.6	3.0	3.0	12.0	0.9	1.5	20.6	18.5	8.5	2.3	2.1	0.5	0.4	1.0
Armenia ^{2/}	2002	14.6	2.5	2.5	0.9	1.3	0.0	11.2	10.5	7.0	2.6	0.7	1.0	0.2	1.4
Kyrgyz Republic ^{2/}	2002	17.6	7.2	2.9	1.4	1.5	3.7	0.0	0.6	10.3	9.7	6.4	1.4	0.6	0.1	0.3	1.1
Moldova ^{2/}	2002	26.4	12.4	4.1	2.1	1.9	7.4	0.0	1.0	13.9	12.4	9.2	3.0	1.5	0.0	0.3	0.9
Kazakhstan ^{2/}	2002	21.2	14.6	10.1	2.1	6.5	3.6	0.0	0.9	6.4	5.4	4.7	0.7	1.0	0.2	1.9	3.1
Georgia	2001	14.4	5.9	3.0	2.1	1.0	1.8	0.0	1.1	8.1	7.3	5.4	1.4	0.8	0.4	0.4	0.5
Estonia	2001	34.5	20.8	8.2	7.5	0.8	7.3	4.8	0.4	13.8	12.2	9.1	3.6	1.1	0.0	0.6	0.1
Latvia	2001	30.4	19.2	8.1	6.0	2.1	10.2	0.0	1.0	11.2	10.8	7.4	3.4	0.4	0.0	0.8	0.4
Lithuania	2001	27.4	15.3	7.9	7.3	0.5	6.8	0.0	0.6	12.1	10.7	7.3	3.4	1.4	0.0	0.7	0.1
Bulgaria	2001	28.8	15.6	7.5	3.6	3.9	7.8	0.0	0.3	12.7	12.0	8.3	3.7	0.7	0.5	0.6	1.1
Hungary	2001	38.7	23.5	9.9	7.6	2.3	12.6	0.1	0.9	14.8	14.0	8.4	3.6	0.8	0.4	0.7	0.3
Poland	2001	32.6	20.2	6.5	4.6	2.0	12.2	0.2	1.3	12.2	11.6	7.4	4.0	0.6	0.2	0.6	0.4
Romania	2001	28.3	17.1	6.2	3.2	1.9	10.9	0.0	...	11.3	8.8	6.4	2.4	2.5	-0.1	0.7	0.6
Slovakia	2001	30.2	19.1	6.7	4.5	2.2	11.9	0.0	0.5	11.1	10.7	7.4	2.9	0.4	0.0	0.6	0.5
European Union ^{3/}	2000	41.5	28.7	14.9	10.9	3.8	11.4	0.4	2.0	12.6	12.3	7.5	4.2	0.3	0.0	1.2	0.3
(In percent of tax revenue)																	
Ukraine ^{2/}	2002	100.0	65.5	33.7	15.7	13.6	29.2	0.0	2.6	33.3	29.8	19.6	5.9	3.4	1.2		
Russia ^{2/}	2002	100.0	54.2	28.1	9.5	12.3	22.1	0.0	4.1	42.1	33.8	19.8	6.9	8.3	3.7		
Belarus ^{2/}	2002	100.0	49.9	15.7	7.1	7.1	28.5	2.1	3.6	48.9	43.9	20.2	5.5	5.0	1.2		
Armenia ^{2/}	2002	100.0	16.9	16.9	6.3	8.8	0.0	76.4	71.5	47.8	17.8	4.9	6.6		
Kyrgyz Republic ^{2/}	2002	100.0	40.9	16.5	8.9	8.9	21.0	0.0	3.4	58.5	55.1	36.4	8.0	3.4	0.6		
Moldova ^{2/}	2002	100.0	47.2	15.4	8.0	7.4	28.0	0.0	...	52.7	47.0	35.0	11.3	5.7	0.1		
Kazakhstan ^{2/}	2002	100.0	68.9	47.6	9.9	30.7	17.0	0.0	4.2	30.2	25.5	22.2	3.3	4.7	0.9		
Georgia	2001	100.0	40.8	21.1	14.2	6.9	12.5	0.0	7.3	56.1	50.6	37.4	9.7	5.5	3.0		
Estonia	2001	100.0	60.3	23.8	21.7	2.3	21.2	13.9	1.2	40.0	36.8	26.4	10.4	3.2	0.0		
Latvia	2001	100.0	63.2	26.5	19.7	6.9	33.6	0.0	3.3	36.8	35.5	24.3	11.2	1.3	0.0		
Lithuania	2001	100.0	35.8	28.8	26.6	1.8	24.8	0.0	2.2	44.2	39.1	26.6	12.4	5.1	0.0		
Bulgaria	2001	100.0	54.3	26.0	12.3	13.5	27.1	0.0	1.1	44.1	41.7	28.8	12.8	2.4	1.6		
Hungary	2001	100.0	60.7	25.6	19.6	5.9	32.6	0.3	2.3	38.2	35.2	21.7	9.3	2.1	1.0		
Poland	2001	100.0	62.0	19.9	14.1	6.1	37.4	0.6	4.0	37.4	35.6	22.7	12.3	1.8	0.6		
Romania	2001	100.0	69.4	21.9	11.3	6.7	38.5	0.0	...	39.9	31.1	22.6	8.5	8.8	-0.4		
Slovakia	2001	100.0	63.4	22.2	14.9	7.3	39.4	0.0	1.8	36.8	34.4	24.5	9.6	1.3	-0.1		
European Union ^{2/}	2000	100.0	69.0	35.8	26.2	9.1	27.4	1.0	4.8	30.3	29.6	18.0	10.1	0.7	0.7		

Source: IMF Country Documents, GPS revenue statistics, OECD Revenue Statistics (2002).

1/ Includes taxes on mineral and natural resource extraction.

2/ Preliminary data.

3/ Unweighted average for EU15.

Table 13. Basic Tax Rates of Selected Countries

Country	Year	Profit Tax Standard Rate	Personal Income Tax			Social Security Taxes	VAT	
			Minimum Rate	Maximum Rate	Non-taxable Threshold 2/		Standard Rate	Other Positive Rates
(in percent)								
Ukraine	2002	30	10	40	4.3	39 to 40	20	none
Russia	2002	24	13	13	0.0	35.6	20	10
Belarus	2002	24	9	30	...	40.0	20	10
Armenia	2002	20	10	20	0.0	...	20	none
Kyrgyz Republic	2002	20	10	20	...	33.0	20	none
Moldova	2002	25	10	25	41.5	30.0	20	8.5
Georgia	2001	20	12	20	...	28.0	20	none
Kazakhstan	2002	30	5	30	...	21.0	16	none
Estonia 1/	2001	26	26	26	17.3	33.0	18	5
Latvia	2001	22	25	25	14.1	26.1	18	none
Lithuania	2001	24	33	33	19.8	31.0	18	5;6;9
Bulgaria	2001	23.5	18	29	...	42.7	20	none
Hungary	2001	18	20	40	...	46.0	25	12
Poland	2001	28	19	40	10.5	39.1	22	7
Romania	2001	25	18	40	...	60.0	19	none
Slovakia	2001	25	10	38	...	50.8	23	10

Source: IMF country documents.

1/ Tax levied only on distributed profits.

2/ As a percentage of per capita GDP.

- **Ukraine's tax-to-GDP ratio is not excessively high, but this is primarily due to low tax productivity.** The tax-to-GDP ratio may be lower than shown in Table 12, taking into account that GDP may be significantly underestimated (see Chapter 2). The productivity³¹ of Ukraine's main taxes is relatively low, reflecting narrow bases, numerous tax preferences, and extensive tax evasion.
- **Ukraine relies more heavily on profit and income taxes than other countries.** It has the highest profit tax rate and collects more revenue from the personal income tax than other CIS and central European countries. The taxation of gas transit and significant natural resource taxes³² are also factors behind the predominance of direct taxes.

³¹ The productivity of a tax is defined as its revenue in GDP terms divided by its standard rate. For the VAT, a more meaningful comparison should involve efficiency ratios, defined as final consumption divided by the VAT rate. Another complicating factor is that some CIS countries (e.g., Kazakhstan) are using the origin principle for taxing trade with other CIS countries.

³² Included as direct taxes because they are generally proportional to the value of production and can be assimilated to profits taxes.

- Payroll taxes are generally more significant in GDP terms than in other CIS and Baltic countries (with the highest tax rate), but are lower than in central Europe. Combined with high profit and personal income taxes, this contributes to high proportion of direct taxes in tax revenue.
- Ukraine's indirect taxes perform poorly as a percentage of both GDP and tax revenue. This reflects very low productivity of the VAT and the erosion of excise tax revenue due to insufficient adjustments for inflation. The VAT problem looks particularly serious. After adjusting for overdue VAT refunds, the net VAT revenue is only 5½ percent of GDP. All countries except Georgia and Kazakhstan raise more VAT revenue by at least 1½ percent of GDP, often with lower rates.

48. Ukraine's tax system has become more distorted than the norm in transition economies. Labor and physical capital are heavily taxed while consumption taxes produce relatively low revenue. Moreover, high tax rates are made necessary by narrow tax bases. Such patterns are likely to undermine medium-term economic growth. Country comparisons show that there is scope for tax reforms that would shift the tax burden from income taxes, comprising capital and labor taxes, to consumption taxes. The center of such reforms should be the VAT, whose underperformance has been pronounced. Adjustments in excise rates (mostly specific) may also be considered in conjunction with rates in neighboring countries and the strengthening of their administration. The revenue brought by such reforms would be available to finance uniform reductions for income taxes.

C. Tax Preferences

49. From a microeconomic perspective, the main source of tax distortions in Ukraine is the combination of narrow tax bases and high rates. Narrow bases are explained by weaknesses in tax administration, multiple tax exemptions and privileges, and simplified tax regimes conducive to tax avoidance. This section focuses on tax policy explanations.

Main Characteristics

50. Tax preferences are widespread and significant, with overall costs in 2003 projected at 3½ percent of GDP. The main non-standard tax preferences (excluding on personal income taxes and import duties) are estimated at 3 percent of GDP, a reduction of 2¾ percentage points of GDP since 1998 (Table 14). This reduction was driven by the discontinuation in 2000 of VAT zero-ratings for energy products and VAT exemptions for imported goods seen as "critical" for domestic production. The costs of VAT exemptions peaked again in 2002, owing to the growing economic significance of exemptions for pharmaceutical products and for publishing and printing industries. The temporary suspension of exemptions for publishing and printing industries is expected to reverse this trend in 2003. Profit tax incentives have been relatively volatile, reaching over 1½ percent of GDP in 2000 and falling to ¼ percent of GDP in 2003 thanks to the termination of tax breaks

for the metallurgy and investment deductions for the metallurgy, mining and chemical industries as well as the temporary suspension of tax credits for military housing.

Table 14. Ukraine: Costs of the Main Tax Exemptions, 1998–2003 1/
(In percent of GDP)

	1998	1999	2000	2001	2002	2003 Proj.
Total	5.7	6.0	4.4	4.0	3.8	3.0
Enterprise profit tax	0.8	1.0	1.6	1.2	0.8	0.2
VAT	3.7	4.0	2.1	2.2	2.5	2.3
Land tax	0.9	0.8	0.5	0.5	0.6	0.5
Excise tax	0.1	0.1	0.1	0.0	0.0	0.0
Other	0.3	0.1	0.1	0.1	0.0	0.0
Memorandum item:						
Profit tax revenue	5.6	4.9	4.5	4.1	4.3	4.9
VAT revenue	7.3	6.4	5.6	5.1	6.1	5.8
Costs of inventoried tax expenditures	4.3	4.4	3.5

Source: Ministry of Finance.

1/ Covers the main non-standard tax exemptions and some standard VAT exemptions. Excludes Personal Income Tax and Import duties preferences.

51. Focusing on non-standard tax preferences, recent inventories conducted by the State Tax Administration enable us to distinguish seven broad categories (Table 15):

- **Tax incentives for agriculture:** The agricultural sector receives large subsidies from special VAT regimes and the zero-rating of dairy products and meat (½ percent of GDP). Under these regimes, agricultural producers both retain the 20 percent VAT on their sales (including exports) and are eligible for tax refunds on their production inputs.
- **Tax incentives supporting specific domestic industries:** Schemes include import duties exemptions, VAT exemptions or zero-ratings, and sometimes profit tax exemptions or accelerated depreciation for industries like ship- and aircraft-building, airspace industries, and automobile industries. Excise tax rates discriminate between imported and domestically produced automobiles and some alcoholic beverages. Incentives provided to the construction sector, in the form of VAT exemptions for newly built housing, is the largest incentive in this category.
- **Some 11 free economic zones and 66 priority development zones covering 10 percent of Ukraine's territory:** These are aimed at attracting foreign investment and fostering regional development. Preferential tax treatments generally consist of five-year exemptions from import duties and VAT for imports of equipment and raw materials and a reduced profit tax rate, either an unlimited 20 percent or a three-year

full holiday followed by a three-year fifty percent tax break. Several zones also provide exemptions from payroll contributions to the unemployment fund and the land tax for periods no longer than five years. From a governance perspective, local authorities have significant discretion for the granting and administration of tax breaks within general frameworks established by parliament, especially in approving individual investment projects.

- **Tax exemptions aimed at supporting innovation, research, and education.** These are mainly VAT exemptions for research and development activities, academic and domestically-produced books, as well as peripheral services used by education institutions (e.g., catering).
- **Tax exemptions with social policy purposes:** These include VAT exemptions for medical products and transportation services, or profit tax and VAT exemptions granted to enterprises with disabled employees.
- **Highly preferential simplified tax regimes, established in 1999:** Though the purpose of small business tax regimes (not quantified in Table 15) is usually administrative simplification, Ukraine's simplified regimes provide substantial tax relief to qualifying businesses, on account of high eligibility thresholds (in terms of turnover and numbers of employees) and the substitution of a moderate proportional turnover tax or a fixed tax for most standard taxes including social security contributions and the VAT.³³ The agricultural sector also enjoys an extremely generous simplified regime, which consist of a proportional tax on arable land and planting fields. This single tax replaces all the main taxes except the VAT.

³³ Small incorporated businesses can choose either to pay a 5 percent turnover tax with VAT or a 10 percent tax and be VAT exempted.

Table 15. Ukraine: Inventory of Tax Expenditures, 2001-2003

	2001 Est.	2002 Est.	2003 Proj.
(in millions of hryvnia)			
Total revenue forgone	8866	9725	8554
Enterprise profit tax 1/	2573	1859	555
tax breaks for metallurgy and mining	571	100	0
deductions for investment in fixed assets for metallurgy and mining	194	0	0
deductions for investment in mining, metallurgy, electricity, chemical industries	263	431	0
tax credit for military housing	902	720	0
special economic zones (tax breaks and exemptions)	208	232	256
technoparks (exemption)	7	10	11
heat and power production (EPT-deductable tariff surcharges)	233	0	0
wind electricity (0.75 percent surcharge)	0	95	95
publishing and printing (exemption)	42	92	0
enterprises with disabled employees (exemptions/loophole)	32	33	36
free provision of coal to selected population groups	14	14	16
purchase and completion of construction (deduction)	0	10	11
exemptions granted by local governments	26	5	5
transfers to non-profit organization in regions	46	50	51
tax break for profits made by non-residents in Ukraine's territory (15 percent rate)	22	25	27
shipbuilding industry (exemption)	2	16	18
aerospace industry (accelerated depreciation)	1	1	1
reinvested profits from domestic production of baby food	1	1	2
oil exploration (tax deduction)	0	19	21
other	7	5	5
Personal income tax: occupation-based exemptions	524	605	787
Value-Added Tax 2/	4288	5228	5284
public services paid with fees (exemptions)	23	52	57
sales of baby food (exemption)	2	3	4
selected goods for disabled people (exemption)	23	24	27
pharmaceutical products (exemptions and zero-ratings)	861	1123	1238
spa treatments and accommodation for children (exemption)	55	74	81
services by daycare centers for children, boarding schools, and shelters (exemption)	5	5	5
catering for children at high and vocational schools and health institutions	29	29	32
newly built housing (exemption)	477	533	587
enterprises with disabled employees (exemptions and zero-ratings/loophole)	49	86	95
agriculture:	1401	1565	1724
- catering for workers provided by agricultural producers	5	5	5
- transfer of own products by agricultural producers to individuals	78	0	0
- earmarking of VAT on milk, meat, poultry, wool, dairy products, for producer subsidies	159	201	222
- earmarking of VAT for investment for eligible producers	806	1005	1107
- zero-rating of milk and meat sales by agricultural producers to processing enterprises	353	354	390
automobile industry: import exemptions and zero-ratings of their sales	77	130	143
aerospace industry: import exemptions and zero-ratings of their sales	15	32	35
shipbuilding industry: import exemptions and zero-ratings of their sales	5	2	2
military equipment industry: particular exemptions and zero-ratings	9	3	4
aircraft industry: exemption on imports, and zero-ratings when financed from budget	0	16	18
periodicals, domestically-produced books, and school books (exemptions)	354	377	415
technoparks (special regime in line with innovation law)	12	22	24
fundamental research, scientific, research-and design services financed from the budget	93	55	61
transportation services with regulated prices (exemptions)	168	172	189
special economic zones	135	155	171
imports used by publishing and printing enterprises (exemption)	158	446	0
funeral services	16	15	17
donations to charities	22	17	19
imports of retail trade enterprises	1	3	3
others	299	290	333
Domestic excise taxes	81	78	86
Import duties	350	695	518
printing and publishing	86	225	0
automobile, ship-building, aerospace, aircraft, weapons industries	24	32	36
free economic zones	241	438	482
Land tax	1028	1239	1300
Other	21	22	25
(In percent of GDP)			
Total revenue forgone	4.3	4.4	3.5
Enterprise profit tax 1/	1.3	0.8	0.2
Personal income tax	0.3	0.3	0.3
VAT	2.1	2.4	2.2
Import duties	0.2	0.3	0.2
Land tax	0.5	0.6	0.5
Other	0.1	0.0	0.0

Sources: Ministry of Finance, Ministry of Economy, and Fund staff estimates.

1/ Excludes exemptions allowed by foreign treaties and standard exemptions such as exemptions for non-profit organizations's incomes.

2/ Excludes exemptions for financial transactions, exemptions stipulated by foreign treaties, exemptions for education and healthcare,

and exemptions for government services.

Cost Effectiveness

52. **Tax incentives aimed at promoting industrial development and attracting foreign investment in Ukraine are poorly designed.** As explained in Zee et al. (2002), indirect tax incentives are often not economically justified³⁴ and prone to abuse, and should be limited to export-oriented activities. Ukraine has relied heavily on domestic zero-ratings and import duties exemptions to support non-export related activities, including in free economic zones. Free economic zones pose further problems. Leakages of goods from these zones into the domestic market have reportedly been extensive, owing to weak administrative controls. In particular, large quantities of commodities unrelated to the implementation of investment projects (e.g. meat and other food products) have been imported into economic zones. Contrary to best international practice, enterprises operating within these zones usually benefit from profit tax breaks. This has attracted activities unrelated to exports and introduced more opportunities for tax avoidance, notably through transfer pricing.³⁵ Moreover, such tax breaks are known to be less efficient than other forms of direct tax incentives, including investment allowances or accelerated depreciation.

53. **Tax exemptions with social purposes are poorly targeted.** As a general rule, VAT exemptions aimed at reducing prices of basic consumption needs are an inefficient way for assisting poor households, and income-targeted subsidies should be relied upon instead. VAT exemptions for pharmaceutical products are however found in other countries as a means to subsidize access to basic drugs. Countries usually have public health insurance systems that cover the costs of basic drugs (essentially prescription drugs), which makes the issue of VAT coverage irrelevant. In Ukraine (where there is currently no health insurance system) efforts should similarly focus on restraining these VAT exemptions to core medical supplies, covering drugs that would normally be classified as prescription drugs and a small number of other highly cost-effective drugs.

54. **Simplified tax regimes and extensive tax exemptions have undermined the tax system.** Simplified tax regimes have contributed to tax base erosion by providing tax relief to small to medium-sized businesses and altered the tax system's neutrality with clear incentives for businesses above the threshold to split into smaller units. More generally, the prevention of abuses and leakages linked to exemptions is likely to absorb a substantial amount of quality administrative resources. The diversion of these scarce resources may contribute to weaken tax collection as a whole.

³⁴ For instance, zero-rating inputs under the VAT should make little difference to the enterprises making the purchase as such VAT is creditable.

³⁵ Tax holidays common in economic zones provide strong incentives for taxed enterprises to enter into economic relationships with exempt ones inside these zones in order to shift their profits to the latter through transfer pricing.

55. Numerous exemptions are especially damaging for the integrity of the VAT. Exemptions introduce cascading and distort producer and consumer prices, thus defeating the purpose of the VAT as a neutral consumption tax. Exemptions weaken the VAT's feature of self-policy, adding to administrative costs.³⁶ Moreover, multiple zero-ratings and other special treatments undermine directly the VAT refund process. The special VAT regime for agriculture permits refunds without matching VAT payments to the budget. The recent decision to zero-rate domestic sales of imported natural gas is bound to complicate the matter further, by creating possible leakages in the VAT chain.

Reform Challenges

56. Reforms should focus on the elimination of tax incentives, starting with indirect tax incentives. Simplified tax regimes should be unified into a single regime, based on the VAT threshold and producing broadly the same tax burden as the standard profit tax. There is ample scope for streamlining socially-motivated VAT exemptions without affecting the poorest households, though this might require compensation through existing income-targeted social benefits.

57. Ukraine's taxation of agriculture should be brought closer to best international practice. It is currently the most nontransparent and preferential system among CIS and Baltic countries (see Box 2). The first-best policy would be for the agricultural sector to be taxed at the standard VAT rate, as is the case in several countries (including Chile, Denmark, New Zealand, Finland, and the United-Kingdom). Given possible collection difficulties, a higher tax free threshold may be needed to ensure that collection exceed administrative costs. A second-best approach would be to exempt the sector from VAT as a means of eliminating the effective subsidy as VAT refunds would thus not accrue.

58. The base for the personal income tax should be broadened. Besides suppressing occupation-based exemptions,³⁷ the definition of taxable income should be extended. In particular, the definition of income does not include explicitly (i) additional benefits such as employer-provided housing and the provision of discounted goods to employees; (ii) income from the sale of immovable property and certain financial assets such as company shares; (iii) amounts received by individuals engaged in agricultural or construction works in the countryside of a temporary basis; and (iv) interest income derived from bank deposits. As importantly, legal and administrative loopholes in personal income taxation need to be tackled. The investment income earned by foreign corporations that are controlled by

³⁶ One key strength of the VAT is the self-enforcing mechanism which provides an incentive for purchasers to require sellers to correctly report the terms of each taxable transaction since VAT claims of purchasers should be supported by valid tax invoices.

³⁷ Essentially members of the military and employees of law enforcement bodies.

Box 2: VAT Treatment of Agriculture in CIS and Baltic Countries

Estonia, Georgia, and the Kyrgyz Republic tax the entire agricultural sector at the standard VAT rate (18 percent, 20 percent, and 20 percent respectively). Georgia grants exemptions for various imports including pedigree animals, planting stocks, and pesticides.

Russia assigns a reduced VAT rate (10 percent) to a selection of agricultural products including dairy products, meat, fish, salt, sugar, vegetables and bread, and taxes other agricultural products at the standard rate (20 percent).

Belarus and Moldova tax the entire agriculture at reduced rates (10 percent and 5 percent, respectively). Belarus zero-rates and Moldova has exemptions for selected products.

Lithuania and Latvia assign lower flat-rate schemes to small farmers (6 percent and 12 percent, respectively) and tax other agricultural producers at the standard rate (18 percent). These flat-tax schemes, equivalent to “exemption with credits” for purchasers of agricultural goods, are in line with the sixth European Directive.

Armenia, Azerbaijan, and Turkmenistan exempt the entire agricultural sector.

Ukraine keeps agricultural producers in the VAT system and allows them to retain the VAT on their sales for investment purposes. In addition, certain products including dairy products and meat, are zero-rated.

residents of Ukraine is generally not included in the income of owners as the income is earned.³⁸ In the same vein, wages and salary paid to non-residents for employment or services performed in Ukraine may not be taxed if paid outside Ukraine. This reflects the absence of specific rules for determining the source of income. Base-broadening efforts should also focus on simplifying the current system of social deductions and allowances. Many of those deductions seem questionable or uncontrollable from a tax administration point of view. Base-broadening focusing on these reform aspects would significantly improve both the efficiency and equity of the tax system.

59. Further transparency efforts are necessary to overcome opposition to reform stemming from rent-seeking behavior. Those who capture rents in the form of tax incentives have an inherent interest to maintain the status quo. The tax incentive granting process should be made more transparent in all aspects including legal basis and economic consequences. The estimated revenue costs of tax incentives should be subject to public scrutiny in the budgetary process as tax expenditures. An increasing number of developing countries have established tax expenditure budgets that hold lawmakers accountable for the

³⁸ The failure to tax the investment income of such foreign corporations—usually established in tax haven countries—has contributed to the flight of investment capital from Ukraine.

cost-effectiveness of granting tax incentives to achieve policy objectives. Transparency also requires to minimize public officials' discretionary powers for granting tax incentives outside fully specified qualification criteria. In that regard, the accountability of local government officials managing special economic zones appears to have been particularly weak.

D. Conclusions

60. **Ukraine has ample scope for improving its tax system and harmonizing it with neighboring countries.** Based on other transition countries' experience, reforms combining reductions in the rates of direct taxes with the rationalization of tax preferences and measures to broaden incomes captured by the tax net may imply only limited revenue costs. Maintaining current revenue levels and fully rebalancing the mix between direct and indirect taxes may however also require further adjustment in excise rates.

61. **For tax reforms to be effective, tax administration will have to be strengthened.** The main explanation for the steady erosion of VAT revenue between 1998 and 2001 and the factor behind its rebound in 2002 are mainly administrative. Despite improving revenue performance, the integrity of the VAT is also negatively affected by the inability of the tax authorities to remain current on legitimate refunds. Addressing these problems is as important as making the appropriate legal reforms.

IV. THE FEASIBILITY OF INFLATION TARGETING IN UKRAINE³⁹

62. This chapter examines the inflation targeting (IT) framework, including initial conditions, empirical work on the various types of inflation targeting, experiences of some transition countries, and practical implications for adopting IT in Ukraine. While Ukraine's macroeconomic situation has improved, there are significant institutional shortcomings relative to countries that have adopted full-fledged IT regimes. This would make it difficult for Ukraine to adopt a full-fledged IT in the near future. With steps to strengthen the banking system and deepen financial markets, it may however be possible to adopt such a regime in the long term.

A. Background on the IT Framework

63. **Under an inflation targeting framework, the central bank commits publicly to pursue a quantitative target for inflation as its primary objective.** Its recent popularity stems in part from the drawbacks of other nominal anchors. For instance, in most developing countries the demand for money has been subject to strong fluctuations and structural breaks, which have made the relationship between monetary aggregates and the policy objective (a particular level of inflation or national income) unstable. These relationships have been particularly problematic in the face of free capital mobility and financial liberalization. In

³⁹ Prepared by Sheila Bassett.

addition, some recent experiences with exchange rate rules (currency board, crawling peg) have proven to be very disruptive by limiting the authorities' ability to respond to real shocks and increasing the damaging effects on the banking system, corporations, and government finances by reducing the need to hedge and risk of borrowing in foreign exchange.

64. **In view of the difficulties with other nominal anchors, countries have increasingly turned to inflation targeting.⁴⁰** Inflation targeting presents several advantages. It establishes price stability explicitly as the primary objective of monetary policy. It improves monetary policy transparency and accountability and hence credibility. It gives the central bank some flexibility in how it responds to economic shocks. It also allows for exchange rate flexibility which can help to absorb shocks.

65. **There are drawbacks.** The framework does not guarantee that the central bank will use the framework appropriately and the public must find the policy credible in order to bring about the desired impact on inflation expectations. Also, if the time horizon for targeting inflation is very short, there may be excessive fluctuations in the real exchange rate, output, and interest rates. A full-fledged IT framework requires relatively developed financial markets. In addition, there needs to be a proven instrument which can impact inflation so that the central bank can be reasonably confident about achieving a given inflation target. It is therefore difficult to implement in developing and transition countries with nascent financial markets and limited monetary instruments where transmission channels to inflation are not well understood.

66. **Inflation targets are based on country-specific factors such as the degree of central bank credibility and the country's vulnerability to shocks.** Within the IT framework, there is flexibility as to what price index to use (the CPI or a core inflation index),⁴¹ whether there is a target range or point, and the target horizon, which can be set year-by-year (Poland) or a path can be announced several years in advance (Czech Republic). While the exchange rate is generally floating in IT regimes, it still needs to be taken into account in countries where there is a significant pass through to inflation.⁴² The ability to use an IT framework depends also on whether there is significant dollarization. If there is a large

⁴⁰ The countries include nine industrial countries, 19 emerging market countries, of which two are transition countries (Hungary and Poland).

⁴¹ Most countries use the CPI because it is easily understood by the public. Alternatively some countries have opted for a core inflation index, since the CPI often contains components beyond the control of the central bank (administrative prices, terms of trade, and indirect taxes). It is important however that the core CPI correlate with movements in the overall CPI in the long run so that the inflation target reflects the public's purchasing power.

⁴² In some cases, countries have chosen to incorporate a band around the exchange rate, e.g., Hungary, reflecting the importance of the exchange rate in determining inflation.

amount of transactions conducted in foreign currency, it may be difficult to have find an instrument that would impact inflation. If dollarization takes the form of asset substitution, then larger adjustments to interest rates would be required to affect inflation, given the need to compensate for the substitution effect of interest rate differentials on foreign versus local currency. See Box 3 for a discussion of recent experience in Hungary and Poland.

Box 3. Experiences with IT in Hungary and Poland 1/

Both Hungary and Poland have full-fledged inflation targeting regimes. Hungary adopted an IT framework in June 2001, after the disinflation process had stalled under the previous narrow exchange rate band regime. In June 2001, all foreign currency restrictions were lifted and a change in the central bank law was adopted, which made price stability the primary objective of the National Bank of Hungary (NBH). The NBH announced that its medium-term objective was to bring inflation down to EMU-compatible levels by 2004/05 to qualify for the early adoption of the euro. The new framework met with much initial success. This was assisted by an appreciation of the forint following the widening of the exchange rate band, tightening of monetary conditions, and the guidance of inflation expectations afforded under the IT framework. The IT framework is formulated on the 12-month increase in end-of-year 'headline' inflation with a tolerance band of +/- 1 percent. The target horizon is 1–1½ years. The NBH benchmark interest rate is used as the primary instrument for influencing inflation. However, there is still a great deal of uncertainty about the monetary policy transmission channel and the impact of interest rates is relatively weak. This mainly reflects the large share of enterprises which rely on external borrowing, so that interest rate transmission mainly affects households and small enterprises which have low debt levels. The exchange rate channel is the dominant channel for monetary policy transmission, but there is significant uncertainty about the extent of pass through. Supporting fiscal policies are essential to allow the NBH to make inflation and not the exchange rate its priority, including by keeping the current account within safe limits.

Poland formally adopted inflation targeting in 1999 to anchor its monetary policy. It targets the headline CPI and the inflation target is set by the central bank. Despite successful disinflation, the inflation targets have been missed repeatedly. Inflation exceeded the target in 1999–2000 and undershot the target in 2001. This reflected external shocks, technical factors, and an unfavorable policy mix. Technical factors that contributed to the misses were narrow bands, short time horizons, volatility of targeted inflation, and learning by doing process. The loosening of monetary policy in response to the Russia crisis and the subsequent tightening contributed to misses in both directions. Despite the misses, 'inflation fighting credibility' does not appear to have been compromised, although a loose fiscal and tight monetary policy have strained the IT regime. Low growth and high unemployment have increased tensions between the central bank and the government. To improve future performance, widening the band, relying on core inflation, introducing escape clauses, and lengthening time horizons are options that might help. An environment of political consensus and instrument independence is necessary in order to achieve low inflation goals of the central bank.

1/ Based on input from Nancy Wagner (IMF); Selected Issues for Poland, June 2002; Selected Issues for Hungary, June 2002.

B. Practical Considerations for Adopting Inflation Targeting in Ukraine

67. **The NBU's stated primary objective is price stability.** Recently, it has pursued this objective by keeping the hryvnia/US\$ exchange rate stable since early 2000 and effectively constant since early 2002. Unsterilized foreign exchange interventions have been the main tool for stabilizing the exchange rate and injecting liquidity into the economy. So far, a strong increase in money demand has allowed money aggregates to increase rapidly without fueling inflation.⁴³ This has allowed the NBU to pursue multiple objectives of price stability, exchange rate stability, and building up international reserves.

68. **There are, however, significant risks in targeting the exchange rate.** Exchange rate flexibility may be needed in order to respond to possible shifts in the balance of payments and money demand, and to encourage better foreign exchange risk management by the private sector. Moving toward greater exchange rate flexibility would involve finding a suitable anchor for monetary policy.

69. **Since large shifts in money demand make it difficult to use rigid monetary targets, the NBU will need a framework that allows sufficient flexibility.** One alternative may be for Ukraine to move to an IT framework.⁴⁴ Such a framework could help the authorities to achieve their objective of price stability. However, the feasibility of adopting an IT framework hinges on initial conditions (Box 4), specifically the strength of the institutional framework, macroeconomic conditions, financial development and the effectiveness of monetary policy transmission channel.

Institutional Framework

70. **Inflation targeting requires that the primary objective of monetary policy is price stability and that all other objectives are subordinated.** Presently the NBU law states that the objective of monetary policy is to ensure the stability of the Ukrainian "monetary unit". However, the law is not clear about whether this relates to domestic price or exchange rate stability. In addition, the NBU law requires the central bank to support other economic objectives, such as macroeconomic stability, economic growth, and employment. In principle, the Ukrainian authorities work within a reserve money framework, subject to building up international reserves to a more comfortable level, and maintaining the stability of the exchange rate. Recent practice, however, has been to keep the exchange rate constant by intervening in the exchange rate market.

⁴³ The increase in money demand appears to be related to measures to strengthen payments discipline as well as increased confidence stemming from macroeconomic stability.

⁴⁴ The movement to an IT framework does not preclude using a reserve money framework, as long as it is reasonably flexible so that the central bank can meet its inflation target.

Box 4. Initial Conditions

The following initial conditions should be established in support of inflation targeting:

- The central bank needs the mandate to set inflation as the main objective and to have accountability in meeting the objective.
- Ensure that the inflation target is not subordinated to other objectives.
- The financial system is developed and stable enough to implement the framework.
- Proper tools to implement monetary policy in support of the inflation target.

The first condition requires that the central bank have a *de facto* mandate to pursue the inflation target and sufficient discretion/autonomy to set monetary instruments accordingly. For accountability and transparency, the public should be informed about the framework and conduct of monetary policy. The second condition requires that other policy objectives, such as fiscal and exchange rate policy be subordinated. This implies that central bank credit is strictly limited. It also implies that the external situation is sufficiently strong to avoid concerns about the current account dominating monetary policy. The third item requires that there be sufficient financial stability to enable monetary policy to pursue the inflation targets and not be sidetracked by concerns about the health of the financial sector. The fourth requirement requires the authorities to have a reasonable understanding of the links between the policy stance and inflation and that there are policy instruments which can be used to influence inflation.

Increasingly, however, the assumption that certain prerequisites need to be satisfied before inflation targeting can take place has been contradicted by the growing number of emerging market economies which have successfully adopted the scheme. Also, a number of the initial conditions for inflation targeting are important for the successful conduct of monetary policy *regardless* of the regime. However, the transparency and accountability associated with the framework make it a demanding regime and there may be a need to strengthen the overall policy framework to increase the likelihood that it will be successful.

71. **The central bank needs to be sufficiently independent to pursue the inflation objective.** Ukraine's central bank law provides for the NBU's independence, but there are areas that would need to be strengthened. The passage of the revised central bank law in 1999 substantially enhanced the legal framework for monetary policy formulation and implementation in Ukraine. However, the recent assessment of good practices on transparency in monetary and financial policies finds that there are areas that need to be strengthened in order to give the NBU greater autonomy in conducting monetary policy. It notes that the conditions under which central bank management can be replaced should require that objective criteria be met, and that a full public explanation be provided. In addition the calculation of central bank profits needs to be simplified and based on realized

historical profits.⁴⁵ Government borrowing directly from the central bank is prohibited under the NBU law. However, it is not clear that directed lending is prohibited.

72. Transparency and accountability of monetary policy need to be strengthened to improve the effectiveness of monetary policy. To carry out inflation targeting effectively, the central bank would need to be fully accountable and its inflation objective would need to be made clear to the public. The recent assessment by the IMF's Monetary and Exchange Affairs Department of transparency of monetary policies finds that it is, in many regards, adequate. However, the assessment finds that the central bank needs to be more transparent about the priority among its domestic and external monetary policy targets. The NBU provides information on changes in monetary policy via press releases and through its website, but it is neither detailed nor analytical. There are often significant lags in the publication of key reports, which contain more detailed information. In addition, statements by the NBU to the president or parliament on progress towards achieving monetary policy objectives are not often made available to the public.

Macroeconomic Conditions

73. Macroeconomic conditions have improved, but Ukraine's level of economic development is below that of countries with a full-fledged inflation targeting regime (Table 16, Box 5). Based on per capita income, Ukraine's economy is substantially less developed than the full-fledged inflation targeting (FFIT) countries,⁴⁶ although the range in the group is quite wide, including Columbia and New Zealand. A number of Ukraine's macroeconomic indicators compare favorably with the FFIT countries, including fiscal performance and the government debt-to-GDP ratio. Average inflation is higher, but this mainly reflects developments in 2000.⁴⁷ The rapid decline in inflation is reflected in the relatively high standard deviation. Compared to the FFIT countries, financial markets are significantly less developed, as indicated by the ratio of broad money to GDP and stock market capitalization. In addition, real interest rates are very high and the S&P debt rating is below the lowest FFIT country, reflecting greater perceived sovereign risks.

⁴⁵ In the past the NBU has provided advance transfers to the budget in anticipation of future profits.

⁴⁶ The cutoff for per capita income for the study on IT regimes was US\$720, more or less arbitrary, but designed to eliminate small and less developed countries. It is possible that GDP is significantly underestimated in Ukraine (see Chapter 2).

⁴⁷ If the period 2001–02 were used the average inflation would be about 6½ percent with a standard deviation of 7.

Table 16. Selected Macroeconomic and Structural Indicators: Ukraine and IT Regimes 1/

	RDIT	FFIT	ITL	Ukraine
Per capita inc. US\$ (2000)	34,329	7,795	1,720	831 (2002)
Avg. monthly infl (99–01) (Standard dev.)	1.0 (0.6)	4.5 (1.2)	11.3 (5.3)	13.7 (2000–02) (12.0)
Gov. bal/GDP (96–00)	-4	-1.0	-2.8	-1.5 (1998–2002)
Gov. debt/GDP (99–00)	66.3	37.5	50.4	36.0 (2001–2) 2/
Real int. rate (98–99)	5.1	8.1	12.4	22.5 (2001–2)
S&P Debt Rating (2001)	AA- (lowest)	BB- (lowest)	B (lowest)	B (2002)
Brd money/GDP (98–00)	118.7	56.2	41.6	23.6 (2000–02)
Stock market capitalization/GDP (98–99)	171.0	47.8	10.5	3.6 (2001)

Sources: Stone and Carare, 2002; Bankscope; Ukrainian Authorities; Fund Staff Estimates.

1/ The three regimes are Full-fledged inflation targeting (FFIT), Rainy day inflation targeting (RDIT)—sufficient credibility to allow discretion for rainy days, Inflation targeting lite (ITL)—multiple objectives and operating targets.

2/ Only includes official external debt and domestic government borrowing from the banking system.

Box 5. Types of Inflation Targeting

Recent empirical work looks at three different inflation targeting groups: 1/

- full-fledged inflation targeting (FFIT)—in this case, the inflation target prevails over all other policy objectives; the inflation forecast is the intermediate target; there is a strict institutional framework with transparency and accountability. The operating target is short-term interest rates (overnight to 3-month maturity). OMOs are used to maintain domestic liquidity conditions in line with the announced operating interest rate. This group includes 7 industrial and 11 emerging market economies (transition countries include Poland, Hungary and Czech Republic).
- Rainy day inflation targeting (RDIT)—sufficient inflation-fighting credibility to allow discretion for “rainy days”; low/stable inflation; no formal policy framework (vague about goals); Includes the U.S., Switzerland, Japan and Singapore.
- Inflation targeting lite (ITL)—an inflation objective is announced, but usually there are other objectives; operating target is mixed (short-term interest rates; exchange rate; base money growth). Nineteen emerging market economies fall into this group (transition countries include: Russia, Slovak Republic, Romania, Slovenia, and Kazakhstan). 2/

The study finds that the level of financial intermediation and fiscal financing are crucial factors for countries to move from ITL to FFIT. Financial markets must be sufficiently developed to absorb public borrowing requirements and borrowing from the central bank is strictly limited or prohibited. Movement to FFIT can be facilitated by reforms in the government security market; foreign exchange market; and domestic payments system. In addition, government debt, if it is high, should be reduced in order to strengthen credibility. Also, transparent and enforceable restrictions on central bank financing of the government usually need to be introduced (Central bank legal framework).

1/ Alina Carare and Mark Stone, *Inflation Targeting Regimes* (First Draft), July 2002, IMF Monetary and Exchange Affairs Department.

2/ The cutoff for inclusion in the groupings was per capita income of at least \$720 in 2000.

74. **Before adopting FFIT, countries tend to reduce inflation, consolidate their fiscal position, and experience significant financial deepening.** This suggests that emerging countries work hard to establish credibility prior to adopting FFIT.⁴⁸ Recent data for Ukraine suggest that the indicators are moving in the right direction, with inflation falling, fiscal balance improving, government debt falling. In addition, there is evidence of financial deepening, although markets remain relatively underdeveloped and banks are weak. However, in comparing Ukraine with the FFIT countries, the initial start point for Ukraine is still far less favorable than for the FFIT countries, particularly with respect to financial depth, as shown in Table 16.

Financial Development

75. **Financial markets are underdeveloped in Ukraine, reflecting low income levels and distrust in the financial system.** The EBRD's indicator of banking sector reform is 2+ on a scale of 1–4 (a score of 4 is the highest), which implies that Ukraine still has a significant way to go to develop its banking system. The average ratio of broad money to GDP ratio, while rising rapidly, was only about 24 percent over the period 1998–2000, substantially below that of the FFIT countries, 56 percent. In addition, real interest rates in Ukraine are high, pointing to weaknesses in the banking sector. The lack of developed financial markets and weaknesses in the banking sector imply that there is a relatively weak transmission channel for monetary policy.⁴⁹

76. **A high level of dollarization presents special challenges.** Dollarization poses risks to the banking sector. Moreover, dollarization could complicate the conduct of monetary policy (although recent empirical evidence suggests that this may not be the case). The extent of economy-wide dollarization in Ukraine is not known, as there are no reliable estimates for foreign currencies in circulation. Dollarization as measured by foreign currency deposits to total deposits has declined somewhat, but is still significant at about 30 percent. In addition, about 40 percent of the loans to the nongovernment sector are denominated in foreign currency. This leaves the banking system vulnerable to the indirect impact of an exchange rate depreciation, and to a potential loss of confidence that could trigger redollarization. Capital market openness remains limited.

77. **The primary and secondary government securities markets are thin and fragmented and still suffer from the financial crisis of 1998–99.** Consequently, the government has little flexibility in managing its domestic financing. Financial institutions lack securities for collateral and financial markets lack a benchmark interest rate and yield curve. At the end of 2002, the face value of all domestic government securities outstanding

⁴⁸ See Stone and Carare (2002).

⁴⁹ While a weak transmission channel did not prevent Poland and Hungary from adopting FFIT, their financial markets are significantly more developed than in Ukraine.

amounted to only Hrv 11.6 billion, equivalent to about 5 percent of GDP. This compares to Poland where treasury bills amounted to about 30 percent of GDP in 2002. The market is divided between restructured bonds (Hrv 9 billion at end 2002) that are mainly held by the NBU and carry a real return of 3 percent⁵⁰; and treasury bills (Hrv 2.4 million at end-2001) that had an average yield of 11 percent in 2002. The market is further fragmented due to multiplicity of maturity dates (in the first quarter of 2002, 20 different maturity dates were offered for sale) and frequent auctions.

78. **While the corporate securities market has been growing, market capitalization is low, and most significant trading occurs off-market.** Weekly trading volume in April 2003 amounted to about US\$10 million on the largest market (PFTS). Stock market capitalization is limited amounting to about 3½ percent of GDP in 2001.

Monetary Policy Instruments and Transmission

79. **The central bank has a number of monetary instruments.** These include: (a) certificate of deposits (CDs) that are issued to commercial banks on an auction basis for durations ranging from 1 to 180 days; (b) repurchase (repo) and reverse repo operations to manage banking sector liquidity on a day-by-day basis; (c) three types of regular refinancing facilities available to commercial banks: overnight loans, refinancing for up to 14 days, and refinancing for up to 180 days;⁵¹ and (d) reserve requirements on commercial bank's deposits. In addition, the NBU's discount rate serves as a benchmark interest rate for money market participants. Furthermore, the NBU intervenes in the foreign currency market to regulate liquidity in the system as a whole and to stabilize the exchange rate. Recently, unsterilized intervention in the foreign exchange market has been the main instrument of monetary policy. As a result, the use of repos and CDs has been limited so far.

80. **The banking system is weak and securities for pledging as collateral are limited.** The banking sector suffers from low profitability and high level of nonperforming loans. Under such conditions, the central bank may be constrained in implementing monetary policy by the need to extend liquidity to weak banks. In the current environment, banks do not have confidence in each other's liquidity, and there are few suitable securities to be used in repo-

⁵⁰ According to the restructuring agreement, the real return is subject to an adjustment for over or underestimation of the previous year's inflation. As a result of an overshoot of projected inflation in 2002 relative to the outturn, the interest rate derived under the agreement for 2003 resulted in a small negative rate. Consequently, the NBU is not receiving any interest from the government on these bonds.

⁵¹ Recently a long-term refinancing facility was added to provide credit for one to three years to commercial banks at the refinancing rate. This facility however is not for liquidity management purposes, but rather to provide long-term credit at below market rates.

collateralized operations. As a result, the interbank market remains underdeveloped and the effectiveness of monetary policy instruments in managing liquidity is limited.

81. The transmission of monetary policy to inflation is not well understood.

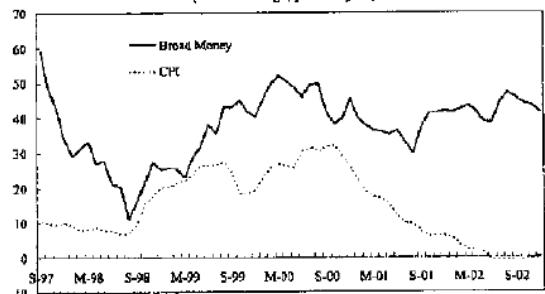
Analytical work prepared by NBU staff on inflation determinants finds that the CPI is influenced by several factors: currency in circulation (Mo), which has an impact mainly through food prices; the exchange rate, which affects the CPI immediately through imported goods; agricultural production, which has a strong seasonal impact on the CPI; and administrative prices. In addition, internal and external shocks impact prices, such as a poor harvest or higher meat prices in European countries.⁵² There is also an interrelationship between the components of the basket (including the impact of energy prices on goods which are energy intensive). The importance of the food prices in the CPI (they account for over 60 percent of the basket) makes it difficult to project, given the uncertainties concerning agricultural production. In addition, if one tries to measure underlying inflation to get a better idea of what is being driven by monetary factors, one is left with a very small portion of the CPI basket, after removing the effects of agriculture and administrative prices.

82. The lack of a strong correlation between money and prices is evidenced by the divergence between money growth and inflation (Figure 16). Recent empirical work finds that over the period 1996–2002 there is not a long-run relationship between inflation and money (in part because of strong remonetization), although in the short run there appears to be an impact on inflation of money lagged one period.⁵³ In addition, the relationship between short-term interest rates (lending rate) and inflation is not strong during this period (Figure 17). While the refinancing rate of the NBU seems to move with developments in inflation, short-term commercial bank interest rates have not been quick to respond to inflation developments. This most likely reflects the lack of well developed financial markets as well as the weakness of the banking sector, which has resulted in rising real interest rates. The relatively narrow focus of private sector credit in the economy would further serve to weaken the transmission channel of interest rates to consumer prices.

⁵² See Petrik, et. al., "Forecast of Consumer Prices in Ukraine."

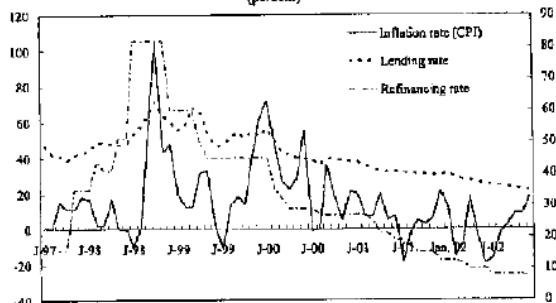
⁵³ Based on a draft paper by B. Lissovlik (IMF). Another empirical by Zholud (2002) finds that a depreciation of the exchange rate affects inflation; the pass through of an exchange rate depreciation is small, only about one quarter; the growth of monetary aggregates is not significant (can be related to *de facto* fixed exchange rate, dollarization, interest rate may be the policy variable); inflation is positively affected by real wage growth; and interest rates (nominal and real) are an important determinant. The significance of interest rates is somewhat of a surprise. The real interest rate's significance may be due in part to the correlation between inflation and the CPI used to deflate the real rate. In the case of the nominal interest rate, it appears that it plays a more significant role in explaining depreciation than inflation. This may reflect the NBU's attempts to target the exchange rate (e.g., tighten domestic credit when there are signs of depreciation).

Figure 16. Ukraine: Broad Money and Prices, 1997–2002
(Percent change, year-on-year)



Source: Fund staff estimates.

Figure 17. Ukraine: Interest Rate and Inflation, 1997–2002
(percent)



Source: Fund staff estimates; and Ukrainian authorities.

C. Conclusions

83. **The transparency and accountability of full-fledged inflation targeting makes it a challenging framework.** While Ukraine's macroeconomic situation has improved considerably, institutional weaknesses remain a serious obstacle. The banking sector needs to be strengthened and capital markets need to be developed in order to have a more predictable policy transmission mechanism, and to make the objective of price stability more credible. In addition, the lack of a clear political consensus and government influence in the central bank and in macroeconomic forecasts, including inflation, would significantly hamper the NBU's ability to conduct a credible inflation targeting framework. This suggests that adopting full-fledged IT is premature. However it does not preclude adopting such a policy in the future if appropriate measures are taken to develop financial markets and strengthen central bank independence.

84. **Moving towards IT would require steps to introduce greater exchange rate flexibility and to make more transparent the primary objective of monetary policy.** Greater exchange rate flexibility would imply that the NBU would intervene only to smooth temporary fluctuations or to build up reserves, but not to defend a particular rate. At the same time, moving away from exchange rate targeting would require finding a new anchor for monetary policy. While full-fledged IT would be very difficult to adopt in the near term, it would be desirable to make clear in the NBU law and in public reports that the primary objective of monetary policy is price stability. In trying to achieve price stability, the NBU could aim to focus less on the exchange rate and more on monetary aggregates, in particular net international reserves and domestic credit.

85. **Measures to strengthen the institutional framework would need to be taken by the government.** This would include dealing with problem banks and steps to deepen capital markets. Monetary instruments need to be refined (including allowing CDs to be used as collateral for repo and refinancing operations) and legal provisions need to be introduced to ensure the speedy processing in the liquidation process of specified securities (government bills and bonds, and central bank CDs) pledged by banks as collateral.

86. **The NBU would need to increase its capacity for policy design and analytical work.**⁵⁴ Further empirical work is required to quantify the relationship among policy variables (monetary aggregates, short-term interest rates) and inflation. In addition, the development of a core inflation index would be helpful. A change in the NBU law may be considered in order to clarify that the primary objective of monetary policy is price stability.

V. EXPORT PERFORMANCE AND TRADE POLICIES⁵⁵

87. This chapter analyzes Ukraine's recent export performance against the background of the trade policy environment, in which Ukraine attempts to foster its integration into the world economy.

A. Export Performance

88. **Several indicators would seem to suggest that Ukraine's export performance is satisfactory.** Ukraine is an open economy with both exports and imports of goods and services exceeding 50 percent of official GDP. Furthermore, buoyant economic growth in 2002 was driven in part by strong net external demand and over the last three years merchandise exports have increased by a cumulative 42 percent.

89. **However, over a somewhat longer time span export performance has been less impressive.** Merchandise exports, which amounted to \$16 billion in 1996, grew on average just 3 percent annually to reach about \$19 billion in 2002 suggesting that longer term real export growth has been modest.⁵⁶ Over the same period, relatively small amounts of foreign investments have been attracted and little progress has been made towards closing the income gap with market-driven economies (Table 17). With exports recovering from the negative effects of the 1998 crisis, the Ukrainian share of world export markets has been restored, but it still remains just 0.3 percent of total world exports. At the same time, Ukraine has succeeded in diversifying its export markets. With exports to non-CIS markets doubling and

⁵⁴ Note that Brazil was able to move relatively quickly to an IT regime by using the frameworks developed by other countries.

⁵⁵ Prepared by Lynge Nielsen.

⁵⁶ Whereas the balance of payments have been compiled from 1994 onwards, detailed trade statistics are only available from 1996 onwards. Pre-1996 trade data are difficult to interpret, inter alia, owing to the prevalence of barter trade in the early years following independence. As late as 1995, about one-third of all exports were bartered. The only major remaining barter trade takes place under an arrangement under which 50 percent of natural gas imports from Turkmenistan are paid for through the export of goods. In 2002, Ukrainian exports to Turkmenistan under this arrangement amounted to \$454 million (2½ percent of total exports).

that to the CIS dropping by more than a third, the share of exports destined for CIS markets fell from more than half in the mid-1990s to less than one quarter in 2002.

Table 17. Ukraine: Selected Trade-Related Indicators

	1996	1997	1998	1999	2000	2001	2002 Est.
(Share of world total in basis points)							
Exports (goods and services)	31	29	26	24	25	28	30
Goods	29	28	25	23	25	28	30
Services	36	36	28	27	25	27	29
Imports (goods and services)	33	32	28	22	23	27	27
Goods	38	36	30	23	24	28	29
Services	12	17	18	16	20	24	22
FDI	14	13	11	5	4	11	10
GDP							
At current market prices	15	17	14	10	10	12	13
Purchasing power parity adjusted	47	44	42	40	41	44	45
Population	90	88	87	85	83	81	79
(Share of total in percent)							
Exports 1/							
CIS	52	39	33	28	31	28	24
EU and EU accession countries 2/	26	29	36	37	37	40	42
Rest of the world	22	32	31	35	33	32	34
Fuel and energy products	9	8	8	9	9	10	12
Agricultural products and raw materials	21	13	11	12	9	11	13
Ferrous and nonferrous metals	33	41	42	42	44	41	39
Other products	38	38	39	37	38	38	36
Imports 1/							
CIS	61	57	54	57	58	56	53
EU and EU accession countries 2/	25	31	34	31	30	31	34
Rest of the world	13	12	12	12	12	13	13
Fuel and energy products	45	48	42	46	46	42	41
Non-energy products	55	52	58	54	54	58	59
(In billions of dollars)							
Exports (goods and services)	20	20	18	17	20	21	23
Goods	16	15	14	13	16	17	19
Services	5	5	4	4	4	4	5
Imports (goods and services)	21	22	19	15	18	20	21
Goods	20	20	16	13	15	17	18
Services	2	2	3	2	3	4	4

Sources: Ukrainian authorities, IMF Balance of Payments Yearbook, WEO database; and Fund staff estimates.

1/ Excluding informal trade.

2/ EU accession countries include ten countries in the accession process for membership in 2004 (Cyprus, The Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, The Slovak Republic, Slovenia) as well as Bulgaria, Romania, and Turkey.

90. The relatively poor export performance has been in part the result of a trading environment that has not been sufficiently supportive of efforts at integrating Ukraine into the world economy. Ukrainian exporters' efforts at building up market positions abroad have been countered by restricting market access. At the same time, Ukrainian trade policies have been biased against exports directly through the imposition of export taxes and indirectly through measures aimed at restricting imports.

B. Trading Partners' Trade Policies Towards Ukraine

91. Since independence, Ukraine has been faced with a plethora of anti-dumping investigations and measures in many of its export markets. For instance, over the January 1995–June 2002 period, out of a total 1,161 anti-dumping measures, WTO member countries imposed 37 measures on Ukraine. The 3 percent share of measures imposed on Ukraine (Table 18) is disproportionate to the 0.3 percent Ukrainian share of world exports, but it is partly explained by WTO members propensity to impose measures on metal trade (one-third of all measures) and the dominating role of metal products in Ukrainian exports (about 40 percent of total exports). The disproportionate levying of antidumping measures against Ukraine is also evident from the fact that only nine economies (Brazil, China, India, Japan, Korea, Russia, Taiwan Province of China, Thailand, and the U.S.)—all with substantially higher level of exports than Ukraine—were affected by more anti-dumping measures. Only 80 countries have had any anti-dumping measure imposed and relative to its importance in the world trading system, only Moldova has had more anti-dumping measures imposed than Ukraine.

Table 18. Ukraine: Anti-Dumping Measures Imposed by WTO Members, January 1995–June 2002

	1995	1996	1997	1998	1999	2000	2001	2002 1/	Total
(Number of measures)									
Total	118	84	119	162	182	235	159	102	1161
Of which: On Ukraine	5	0	3	5	7	8	6	3	37
Of which: Base metals and articles of base metals	49	22	44	60	81	82	64	26	428
(In percent of total)									
Of which: On Ukraine	4	0	3	3	4	3	4	3	3
Of which: Base metals and articles of base metals	42	26	37	37	45	35	40	25	37

Source: WTO.

1/ First half of the year.

92. WTO trading partners that have imposed anti-dumping measures against Ukrainian exports include Canada (3 measures), Chile (2), Colombia (2), EU (8), India (4), Mexico (4), Turkey (2), U.S. (5), and Venezuela (2). Whereas a broad range of countries has imposed anti-dumping measures, the product range has been relatively narrow; it has tended to concentrate on metal products, but it has also included chemical products such as ammonium nitrate. Table 19 provides a list of measures introduced in 2001 and 2002.

Table 19. Ukraine—Antidumping Duties Imposed by WTO Trading Partners in 2001–02

Product	Country of destination	Year of application	Measure
Flat non-coiled rolled metal	USA	2001	Duty—90.33%
Reinforced steel	USA	2001	Duty—41.69%
Ammonium nitrite	USA	2001	Duty—156.29%
Flat non-coiled rolled metal	Canada	2001	Duty—96%
Reinforced steel	Canada	2001	Duty—15.7%
Ammonium nitrite	EU	2001	33.25 Euro per ton
Steel wires and certain steel alloys	USA	2002	Anti-dumping margin—116.37%
Ferrosilicium	India	2002	Difference between \$740 per ton and cost of commodity
Carbamide	EU	2002	€8.85-16.84 per ton
Pipe products	EU	2002	30.9%-44.1%
Ammonium nitrite	Brazil	2002	19%

Source: Ministry of Economy and European Integration.

93. **WTO rules for the determination of dumping is based on a comparison of the normal value (the price of the product in the country of origin) and the export price.** While the recent surge in antidumping measures in the world metal market (particular steel) could in principle be the result of producers' increased price discrimination in favor of exports, this does not appear to be a satisfactory explanation. Indeed, the WTO ascribes the rising trend of anti-dumping measures in the steel sector as resulting from chronic excess supply in world markets, which has tended to put downward pressure on prices and fostered protectionist sentiments, especially in the U.S. and the EU.⁵⁷

94. **In the case of Ukrainian metal exports, it is difficult to quantify price distortions.** The metals industry is affected by a number of factors, including below-cost coal prices, VAT refund arrears, and various tax exemptions. However, it is difficult to quantify the net effect on metal producers. The use of the WTO rule for comparing domestic and export prices is complicated by the fact that the industry's production is increasingly marketed abroad. The share of production exported has increased from 43 percent in 1997 to 87 percent in 2002, making domestic price comparisons difficult. In cases where no domestic sales takes place, the subsidiary WTO rule calls for an evaluation of export prices relative to domestic costs, but trading partners have seldom conducted such evaluations prior to determining anti-dumping duties. Neither the EU nor the U.S. recognize Ukraine as a market economy and therefore do not consider domestic cost conditions relevant, focusing instead on cost data

⁵⁷ WTO Annual Report 2002, page 35.

from third countries.⁵⁸ In one particular incident, the U.S. and Canada both imposed countervailing duties on a particular metal product. Canada, which recognizes Ukraine as a market economy, assessed a duty of 16 percent, whereas the U.S. (using cost data from third countries) assessed a duty of 42 percent. The EU and the U.S. have both designated Russia and Kazakhstan as market economies, but Ukrainian efforts at receiving a similar designation has not met with success.

95. **Apart from the imposition of antidumping duties, Ukrainian exports are also subject to quotas and licensing based on intergovernmental agreements.** Agreements currently in place govern exports of various metal products to the EU, the U.S., Indonesia, and Russia; textiles to the U.S. and the EU, and wood products to Hungary.

96. **In recent years grain harvests have been very good and Ukrainian grain exports have increased commensurably.** In response to rising Ukrainian (and Russian) grain exports to the EU, the EU on 1 January 2003 established a 2.98 million ton quota for low and medium quality wheat. Country-specific sub-quotas were established for the U.S. and Canada⁵⁹, but Ukrainian and Russian efforts at also securing such quotas were not successful. With this new restriction in place, Ukrainian exporters are forced to diversify exports to other markets; with higher marketing and transportation costs, profit margins are bound to have been negatively affected. Ukraine also continues to be affected by other agricultural subsidies in trading partner countries.

97. **In general, Ukraine has trouble penetrating world markets, because protection is relatively high in exactly the product lines where Ukraine has a comparative advantage (e.g., metals, grains, and other agricultural products).** For instance, in addition to the above noted new quota on grain imports, the EU—expressing dissatisfaction with the scrap metal export tax and outstanding VAT refund arrears—has lowered the quota on ready-made rolled metals to 180,000 tons for 2003, from 355,000 tons in 2002. Furthermore, Ukraine is at a competitive disadvantage vis-à-vis Central and Eastern European countries that have received trade concessions from the EU not also granted to Ukraine. With the upcoming EU enlargement in 2004 this competitive disadvantage vis-à-vis prospective EU members in the current EU market will increase; at the same time, exports to prospective EU member

⁵⁸ In addition, with the lack of market economy status trading partners may choose not to impose firm- but country-specific duties. A Ukrainian exporter may therefore cause duties to be imposed on other firms which have not engaged in any dumping activity.

⁵⁹ The EU was obligated to provide the U.S. and Canada with set-asides in order to comply with previously granted market access concessions to these two trading partners.

countries may be negatively affected as these countries adopt the common EU tariff and other protection policies.⁶⁰

98. **It is difficult to quantify the effects of external market restrictions on the Ukrainian export performance.** But, for instance, the 1 percent drop in ferrous and nonferrous metal exports from the first half of 2001 to the first half of 2002 was related to increased market access problems in the U.S. and EU. Exports, however, rebounded strongly in the second half of the year as the industry succeeded in locating new markets, particularly in China and other Asian countries. While these efforts were successful in halting the decline in exports, the development of new markets may have reduced profit margins (which fell to 7 percent in 2002 from 14 percent in 2000). Furthermore, there are limits both to the extent to which the industry can continue to develop new markets and the increase in market share that governments in non-traditional market countries will permit. For instance, the governments of China and Ukraine have recently agreed to a Voluntary Export Restraint limiting the increase in the sales of certain metal products to China in 2003 to 10 percent over their levels in 2002.

99. **Trading partners' restrictions against Ukrainian metal exports are of significant concern given the importance of the metallurgical industry in the Ukrainian economy.** The metallurgical industry consists of about 250 companies employing close to 450,000 people (Table 20). The partly privatized industry was hard hit by the 1998 crisis, but it has since recovered and the industry is undergoing structural reforms including through the

Table 20. Ukraine: Metallurgical Industry
(In units indicated)

	1997	1998	1999	2000	2001	2002 Prel.
Number of companies	201	155	150	148	240	254
Number of workers	498,340	476,802	499,409	458,587	454,092	446,588
Average number of workers per company	2,479	3,076	3,329	3,099	1,892	1,758
Total production (in million of dollars)	14,879	11,390	7,239	6,673	6,980	7,322
Average production (dollars per worker)	29,857	23,888	14,495	14,550	15,372	16,395
Exports (in percent of production)	43	56	88	96	92	87
Net profits or losses (in percent of production)	2	-3	3	14	8	7
Average production per company (million dollars)	74	73	48	45	29	29

Source: Ministry of Economy and European Integration.

⁶⁰ For instance, the free trade agreement with the Baltic states will lapse when these countries join the EU.

breaking up of conglomerates into independent firms. However, labor productivity remains very low reflecting in part run-down production structures. The industry is in need of new investments, but whether such investments would be forthcoming would depend critically on the prospects for external market access (most of the production is exported).

C. Ukrainian Trade Policies

100. **The Ukrainian trade intervention policies include import duties (mostly ad valorem), a few export taxes, and various non-tariff barriers (NTBs).** In 2002, the weighted average import duty rate was 7 percent (with duties ranging from 0 to 70 percent), but the effective import duty rate was only 2 percent reflecting the widespread use of exemptions. Export taxes are levied on cow hides, live animals, sunflower seeds and scrap metal whereas NTBs include the levying of differential excises on certain domestic and imported products and tax exemptions in support of domestic automobile, aircraft and ship-building industries in addition to agriculture. Furthermore, the delayed refunds of VAT on exports constitute an implicit export tax equal to the cost of extending an interest-free loan to the government for the duration of the delayed payment.⁶¹ The discriminatory implicit tax increases the scope for corruption and undermines the rule of law. Moreover, the incidence of the tax is relatively higher for smaller and less integrated companies, which have relatively larger VAT refund claims. In other words, the tax falls most heavily on the type of companies which may offer the best prospects for future export—and thus economic—growth. Finally, Ukraine also restricts imports through the imposition of anti-dumping duties and quotas.

101. **There exists a political consensus in Ukraine about the need to pursue an outward-oriented transition strategy as reflected both in the adoption of the fairly liberal Customs Code in 2001 and the ongoing determined pursuit of WTO accession.** However, the wide dispersion of tariffs and the existence of export taxes and NTBs suggest a propensity to actively manage some trade to the benefit of influential constituencies. In such an environment, the number of ad hoc restrictive trade measures, each benefiting narrow constituencies, will tend to accumulate over time and come to dominate the core of an otherwise liberal trading system.⁶² Not only does such a trading system tend to become less liberal over time, it also heightens the uncertainty about the rules of the game and thus constitutes a significant disincentive to new investments whether foreign or domestic.

102. **During 2002, various minor adjustments to the 2001 Customs Code were implemented most of which went in the direction of lowering the level of protection.** Import protection of textiles was also liberalized in the context of implementing an

⁶¹ The implicit tax can at most amount to 17 percent, which would apply in the limiting case of a company which adds no value to the product it exports and is never refunded the VAT.

⁶² As an example thereof, one can consider the export taxes. The taxes on hides and live animals were introduced in 1996, which was followed by the sunflower tax in 1999 and the scrap metal tax in 2003.

understanding that provided better market access for Ukrainian light industry export to the EU. The tax breaks afforded the metallurgical industry were eliminated in the context of adopting the 2003 budget, but the simultaneous introduction of the €30 per ton export tax on scrap metal helped secure the industry lower input prices. At end-2002, Ukraine had in place 13 anti-dumping and other protective measures restricting 10 different products from 16 countries (Table 21). Out of a total of 35 measures 29 were imposed in just four product categories (artificial furs, electric bulbs, syringes, and polyethylene).

Table 21. Ukraine: Special Quotas and Antidumping Duties in Place as of end-2002

Product	Country of Origin	Duration	Measure
Artificial fur, piled cloth	Belarus, Lithuania, China, Poland, Russia, USA, Latvia, Hungary	September 14, 1999—September 14, 2003	Quota—1,026 tons
Artificial fur, piled cloth	Belarus	February 23, 2001—February 23, 2006	Duties—179.7% (artificial fur) and 53.29% (piled cloth)
Electric bulbs	Russia, Belarus, Hungary, Poland	August 5, 1999—August 5, 2003	Quota—3.9 million items
Electric bulbs	Russia	December 7, 2000—December 7, 2004	Duty—97.50%
Certain products made of polyurethane	Estonia, Latvia, Russia, Belarus, Poland, Czech Republic, Hungary	March 2, 2000—March 2, 2004	Quota—292 tons
Syringes with or without needles made of plastic materials	Russia, Slovak Republic, Belgium, Ireland, Poland, Germany, Spain	June 8, 2001—June 8, 2005	Quota—810,398.5 kg
Fiber boards	Belarus	July 17, 2002—July 17, 2007	Price from one producer was accepted. Duty for another producer—68.75%
Pointworks (turnouts)	Russia	July 10, 2002—July 10, 2007	Duty—59.4%
Rubberoid	Belarus	July 17, 2002—July 17, 2007	Duty—75%
Baking soda	Russia	July 10, 2002—July 10, 2006	Quota—2,500 tons
Portland cement	Russia	October 10, 2002—October 10, 2006	Quota—150,000 tons
Automobiles	Russia	December 9, 2002—December 8, 2006	Quota—15,777 items
Electric bulbs	Kyrgyzstan	July 3, 2002—July 3, 2003	Duty—38.31%

Sources: Ministry of Economy; and European Integration.

D. The Road Ahead

103. More than one half of Ukrainian exports are concentrated in metal and agricultural products, which are facing varying degrees of market access problems worldwide. Energy exports (12 percent of total exports) do not face such problems, but

Ukraine is a net energy importer and it is not clear whether Ukraine has any comparative advantage in such exports over the long-run.⁶³ As the share of remaining exports would appear to be too narrow to sustain a significant expansion of exports over the medium term, the policy challenge is to improve market access for products where Ukraine has a comparative advantage (metals and agricultural products).

104. Ukraine's international trade relations suffer from the absence of an agreed legal framework. Trade relations with the EU and Russia, in particular, suffer from the three parties imposing ad hoc trade intervention measures against each other on an ongoing basis. Accession to the WTO would provide the needed legal framework for the further integration of Ukraine into the world economy and it is important that Ukraine join as soon as possible. Besides providing a stable legal framework within which trade relations can be fostered, the WTO accession will also lead to immediate benefits in terms of improved market access. However, even if Ukraine succeeds in joining the WTO shortly, the immediate outlook for improved market access is clouded by the EU enlargement slated for 2004, which may well entail negative trade diversion effects in the short run.

105. In the context of acceding to the WTO, Ukraine will also lower its import protection, which should help strengthen the tradables sector. Although current and prospective average tariffs are fairly low, trade could be liberalized over and above what is expected in the context of acceding to the WTO. On fiscal revenue grounds, a case could possibly be made for maintaining the current low effective duty rate, but further reforms of the import tariff regime should aim at lowering significantly the maximum tariff (currently 70 percent) while limiting import duty exemptions. Furthermore, all export taxes—implicit or explicit—and NTBs should be repealed as early as possible. Anchored in the WTO, a trade protection system with low maximum tariffs, no NTBs and no impediments to exports could provide a much-needed framework of stability and certainty to exporters, importers, and investors alike; it would also tilt incentives away from rent-seeking activities towards entrepreneurial activities. In such a framework—buttressed also by broader structural reforms, including tax reforms—there would be brighter prospects for sustained export growth over the medium term than what export performance up to date would seem to suggest.

VI. ENERGY SECTOR⁶⁴

106. This chapter gives an overview of Ukraine's energy sector and provides an analysis of quasi-fiscal operations in the electricity, gas, and coal sectors.

⁶³ Energy exports consist mostly of oil products produced from imported crude oil and sold in adjacent countries.

⁶⁴ Prepared by Robert Tchaidze; this chapter benefited from substantial contributions by Maxim Kryshko.

A. Overview

107. **The energy industry is a significant sector of the Ukrainian economy, representing about a quarter of gross industrial production.** Despite the reform efforts over the last decade, the sector remains plagued by numerous difficulties. The main problems include inefficient management, lack of transparency, hampered privatization, inappropriate tariff setting mechanisms, and the continuing build-up of tax and supplier arrears.

Gas

108. **The Ukrainian gas sector is dominated by the state-owned holding company Naftogaz, established in May 1998.** Naftogaz consists of several subsidiaries, the main three being a distribution company (Gas Ukrainy), a transit company (Ukrtransgas), and an exploration unit (UkrgasProduction). The complicated structure of the holding company makes it difficult to assess its financial position. Currently Naftogaz is undergoing a three-stage audit, with the third stage to be implemented in 2003, although the results of the second stage are yet to be released. The consulting firm KPMG has been hired to develop a financial rehabilitation plan for Naftogaz, which has accumulated substantial arrears to external suppliers in the 1990s and currently is the biggest delinquent taxpayer, with the stock of tax arrears amounting to Hrv 4.1 billion (almost 2 percent of GDP).

109. **Ukraine's proven gas reserves stand at about 1 trillion m³.** Naftogaz produces domestically about 18 billion cubic meters (bcm) of gas per year, although the World Bank estimates that the potential is twice as high.⁶⁵ The costs of producing 1 thousand cubic meters (tcm) of gas are officially estimated at \$11. The remainder of domestic demand (85 bcm in 2002) is mostly met by commercial imports from Turkmenistan and gas received as transit payments from Russia (see Table 22).

110. **Ukraine hosts a system of 37,100 km of gas pipelines, 72 compressor stations, and 13 underground storage facilities.** These are used for transporting gas from Russia to Western and Central Europe as well as to southern parts of Russia and other CIS countries. An agreement with the Russian gas company Gazprom envisions transportation of about 110 bcm yearly into Europe in 2002–2012 (full capacity of the trans-Ukrainian pipeline system is 175 bcm). As compensation, Ukraine receives gas in proportion to the volume of the overall transit. The value of the compensation is calculated based on a fee of \$1.09 per 100 km of one thousand cubic meters gas transported, while the volume of the transit fee gas

⁶⁵ For comparison, annual production capacities for Russia and Turkmenistan, Ukraine's main gas suppliers, are about 580 and 80 bcm respectively. Their proven reserves are 48 and 2 trillion m³, respectively.

is calculated based on a notional price of \$50 per tcm. In the second half of 2002, the fee was raised but subsequently lowered again in 2003.⁶⁶

Table 22. Ukraine: Gas Volume Balance, 2000–02

	2000	2001	2002
(in billions of cubic meters)			
Total Supply	77.3	79.5	84.6
Gas Handled by Naftogaz	53.7	65.7	71.9
Transit gas	25.2	25.8	25.7
Imports from Central Asia	1.7	17.3	17.6
Other Imports	8.6	0.0	0.2
Domestic Production	17.5	17.7	17.8
From Underground Storages	0.6	4.9	10.6
Gas Imported by Itera 1/	23.7	13.8	12.7
Total Demand	77.3	79.5	84.6
Demand for gas handled by Naftogaz	53.7	65.7	71.9
Technological Needs	7.7	7.0	7.3
Domestic Consumption	44.0	47.9	48.2
Export	1.0	0.3	1.6
Into Underground Storages	1.1	10.6	14.7
Gas handled by other companies	23.7	13.8	12.7
<i>Memorandum Items:</i>			
Total Gas Imports	59.2	56.9	56.2
Gas purchased from Turkmenistan	1.7	31.1	30.3
Share of Turkmen gas supplied by Itera 2/	...	44%	42%
Transit of Russian gas to Europe 3/	109.3	104.3	95.3
Transit of Russian gas to CIS countries 3/	11.3	19.1	14.9

Sources: Ukrainian authorities; Naftogaz; and Fund staff estimates.

1/ Gas imported by Itera is calculated as imports other than those handled by Naftogaz.

2/ Due to poor payments, Turkmenistan ceased gas imports to Ukraine until October 2000.

The gap was filled by Itera and special agreement with Gazprom, providing for 7.5 bcm.

3/ Data for 2002 are preliminary.

111. **There are plans for an international consortium to manage the Ukrainian gas trunk pipeline.** In late 2002, it was announced that an international consortium involving Ukraine, Russia, and possibly West European countries, would be created to manage the pipeline. One rationale for establishing this consortium apparently is to ensure the viability of the trans-Ukrainian pipelines, which for the last six years experienced chronic

⁶⁶ Consequently, the price of gas was also temporarily raised to \$67, and hence, the average annual price of gas received as a transit fee in 2002 increased to \$58. Overall, these adjustments seem to have no effect on the volume of gas transferred to Naftogaz.

underinvestment according to Naftogaz management. With the creation of the consortium, it is hoped that annual investment in the amount of \$200 million could be secured. The consortium was registered in Kyiv as a limited liability company with statutory capital of \$1 million, in which Naftogaz and Gazprom each own 50 percent. Several foreign investors have expressed interest in joining in the project, among them Germany's Ruhrgas.

112. In addition to the gas received from Russia as transit payments, Ukraine imports gas commercially from Turkmenistan. Part of the purchased gas is transferred as a transportation fee to a company responsible for delivering Turkmen gas to Ukraine. Eventually this part of the gas is imported into Ukraine, although it is recorded as of Kazakh, Uzbek, or Russian origin. In 2001–2002 transportation of Turkmen gas to Ukraine was handled by the Russian company Itera, which received 41 percent of transported gas in exchange for their services. In late 2002, the contract for transit of Turkmen gas to Ukraine was awarded to a Hungarian firm, Eural Trans Gas KFT, which seems to have been established in December 2002 solely for this purpose.⁶⁷ The price for Turkmen gas in 2002 was \$42 per thousand cubic meters, out of which half was to be paid in cash and half in terms of goods and services. Taking into account the 41 percent gas transit fee paid to Itera, the effective price of Turkmen gas at the Ukrainian border was equivalent to about \$36 in cash and \$36 in kind (a true market value of the in-kind component is hard to assess, although it is likely to be considerably lower).

113. Naftogaz has repeatedly run payment arrears on gas received from Turkmenistan and Russia. As of end-2002, arrears to Turkmenistan were \$443 million (just over 1 percent of GDP) and to Gazprom \$1.4 billion (3½ percent of GDP). An agreement between Ukraine and Russia in October 2001 provided for the restructuring of gas debts to Gazprom over 13 years. Naftogaz issued Eurobonds in the sum of \$1.4 billion that are to be handed over to Gazprom and will be serviced at an annual rate equal to LIBOR + 1 percent and redeemed during 2004–2013. The transfer is supposed to take place by mid-2003.

114. Naftogaz remains the largest delinquent taxpayer in Ukraine. The company ran substantial arrears on due payments to the state budget (taxes, royalty, rent from transiting Russian gas to Europe): Hrv 2.2 billion or about 1 percent of GDP in 2001, and Hrv 1.8 billion or a little more than ¾ percent of GDP in 2002. Part of the explanation for the continued accumulation of arrears to the budget, despite improved cash collections from customers, may be that the share of the transit fee to be transferred to the budget increased substantially, from Hrv 1 billion in 2000 to Hrv 2.2 billion in 2002, while the volume of gas transited via Ukraine hardly changed. Another potential problem may be that Naftogaz does not receive the transit payment in monetary form. Another reason suggested by Naftogaz management is the significant time lag between when payments to the budget and external

⁶⁷ There were announcements made by Naftogaz management that Eural Trans Gas KFT would be acquired on parity basis by Naftogaz and Gazprom.

gas suppliers become due and when consumer payments are received.⁶⁸ As shown below, a more likely reason for the continued accumulation of arrears is that gas tariffs remain below cost recovery. Poor governance and insufficient oversight by the state has also undoubtedly contributed to the gas sector's cash flow problems.

Electricity

115. **The electricity market in Ukraine was reorganized in the mid-1990s.** A competitive pool model was adopted with independently operating energy generators, distributors, and a wholesale market. The following agents are present in the market:

- state-owned energy generators—Energoatom, which operates four nuclear power plants; five large and several smaller thermal power stations; and two hydro power stations;
- the wholesale electricity market—a state-owned company Energorynok, which purchases energy from generators and sells it to distributors;
- distributors—26 regional (*oblenergos*) and 2 city (Kyiv and Sevastopol) companies, out of which 14 are privatized;
- a state regulator—National Energy Regulator Committee (NERC), which oversees and ensures proper functioning of the electricity market, sets the prices, and licenses participants of the market;
- a number of combined heat and power stations (CHP), some of them operated by distributors and some established as independent enterprises;
- numerous independent licensed traders, which deliver electricity to large industrial consumers at unregulated prices, paying oblenergos for electricity transmission.

116. **NERC sets the wholesale price for electricity based on the forecasts of electricity generation at nuclear, thermal, and hydro power stations.** It also sets tariffs for transmission and retail sales and defines the algorithm for the distribution of proceeds between the participants in the market. Oblenergos are supposed to coordinate their financial plans (including investment and non-energy generation activities, e.g., metal export) with the commission and get penalized for unjustified deviations (there were cases when retail and transmission tariffs were reduced due to non-purpose spending of funds without permission from the regulator). For privatized oblenergos, tariffs are set so that they would allow for a

⁶⁸ In late 2002, parliament adopted a law that establishes a zero percent value added tax rate for sales of gas imported in accordance with international treaties and agreements, effectively shifting a part of Naftogaz' tax burden onto final consumers.

17 percent return on investment within the first 7 years after privatization, and 11 percent for the following 5 years.

117. **NERC is also involved in setting gas tariffs.** Until recently it was setting retail tariffs for households and budgetary organizations only. Since January 2003, it is also setting the caps on retail tariffs intended for sale to industrial enterprises. However, the NERC is not in practice fully independent in its tariff setting capacity.

118. **In August 2002, steps were taken to ensure the stability of electricity supply.** Energoatom is required to provide a constant supply of about 45 percent of the total electricity produced (78 billion kWh in 2002) and is subject to penalties for deviations in either direction. NERC is meant to ensure full payments for supplied energy. During peak hours, energy is being purchased first from the thermal stations, and then from the hydro stations. Payments to these producers are determined by the level of funds collected by the wholesale market and thus may fall short of a hundred percent.

119. **A plan for restructuring the industry developed in 1996 envisioned first the privatization of oblenergos and subsequently of thermal power stations, while nuclear and hydro power stations were to remain state owned.** The sale of oblenergos was designed to ensure timely payments by final consumers, replenishment of the working capital, financial rehabilitation, and overall profitability of the companies. Six oblenergos were sold to domestic investors in 1998. In 2001, six more companies were sold to AES (of the United States) and VSE (of Slovakia) companies. Some government agencies and officials claim that privatization did not yield the expected results since there does not seem to be much of a difference between the best-performing state-owned and the best-performing privatized oblenergos. However, a study in early 2002 by the State Privatization Fund argues otherwise.

120. **Privatization of the remaining oblenergos has been impeded by the large unresolved debts in the industry.** A law on debt restructuring has been under consideration in parliament for some time, but there has been little progress. Another obstacle to privatization is a global decline in interest towards energy sector investment.

Coal

121. **Low coal prices imply that substantial implicit subsidies are being passed to enterprises in other industries.** Domestically produced coal is used intensively in domestic industries, such as steel. While in 2002 the world prices of steam and coking coal were \$42.7 and \$56.3 correspondingly, the respective prices for coal produced in Ukraine were \$26.6 and \$23.6.

122. **The coal sector is almost completely state owned.** About 200 coal mines are operating under 18 holdings and 7 production associations. The government plans to transform them into 21 open joint-stock companies that are to be partially privatized. The

authorities have stated that they will attempt to proceed with the privatization of the first of them, Pavlovgradyuhillia, in 2003.

123. **Most coal mines are making losses and the budget transfers subsidies to the industry amounting to about 5 percent of central government expenditure or about 1 percent of GDP** (Table 23). Bankruptcy proceedings have been brought against 165 enterprises of the coal-extractive sector, including 104 coal mines. While one of the factors attributing to the dire state of the sector is low output prices, even with adjusted prices some mines would still remain loss-making.

Table 23. Ukraine: Coal Sector, 2000–2003

	2000	2001	2002	2003
(In Hry millions)				
Subsidies to Coal Sector	1,909	1,908	2,074	2,609
Reported Losses of the Coal Sector Enterprises 1/	2,019	1,522	1,106	...
Central Government Expenditures	36,257	40,407	43,205	...
GDP	170,100	204,200	220,600	243,500

Sources: Ukrainian Authorities; and Fund staff estimates.

B. Quasi-Fiscal Deficit (QFD) in the Energy Sector

124. **Quasi-fiscal activities are defined here as operations carried out by public enterprises that have a direct impact on the financial position of these enterprises and would not prevail in competitive markets without government intervention.** Quasi-fiscal operations can in principle be duplicated by budgetary measures in the form of an explicit tax, subsidy, or direct expenditure. A quasi-fiscal deficit (QFD) may arise for several reasons:

- Mispricing—if output prices are below full cost recovery, often with an aim of subsidizing certain consumer groups;
- Poor enforcement of payment collection—when payments by consumers of the services are not being made in full or being partly made in a noncash form, likely to have market value lower than that accounted for;⁶⁹
- Output losses—to the extent that underinvestment and poor oversight by the state are responsible for output losses above the normal technical losses.

⁶⁹ To account for potentially low market value of noncash payments, they are discounted by 50 percent throughout this section.

100. **The obvious result of a shortfall arising from these factors would be lower profits.** However, if the quasi-fiscal deficit is substantial, the enterprises may face losses and cash flow problems, and be forced to run up tax arrears, wage arrears, payment arrears to input providers, or by underinvesting. Alternatively, the government may step in and finance the deficit through explicit subsidies. To the extent that the quasi-fiscal deficit creates arrears and debts, the state may face a potentially high and increasing quasi-fiscal liability.

125. **Estimation of the QFD is complicated by the lack of consistent data.** In particular, it is very difficult to estimate cost-recovery tariff levels, as they should include not only costs of inputs, but should also allow enterprises to generate enough funds to cover tax and social payments, service debts, and undertake the necessary maintenance and short-run investment. For similar reasons, no data on the appropriate level of investment are available. Given these constraints, this chapter uses different approaches for evaluating the QFD in the four sectors—gas, electric energy, heat energy, and coal:

- As the only available data for coal sector are explicit budgetary subsidies, those are used to proxy the QFD, assuming that the subsidies finance the deficit in full;
- For the gas sector, data on tax and payment arrears owed by Naftogaz were used to estimate the QFD from “below-the-line”, assuming that these arrears are used to finance the deficit;
- For the heat and electric energy providers, consistent data were not available on tax and payment arrears, and the QFD was estimated using data on payment arrears by final consumers, assuming that this was the main source of the deficit.

126. Table 24 provides the estimates of the QFD in each of the four sectors.⁷⁰

127. **The QFD in the electricity sector has been falling over the last few years, driven by improved payments collection.** Further improvements are unlikely until structural reforms targeting the two worst paying consumer groups—households and public utility companies—are implemented.

⁷⁰ Table 8 of the Staff Report uses this data to calculate the overall public sector deficit (netting out the explicit subsidies and the tax arrears).

Table 24: Quasi-fiscal Operations in the Energy Sector, 2000–2002

	2000	2001	2002 Prel.
(In percent of GDP)			
Quasi-Fiscal Deficit in the Energy Sector	5.2	3.9	3.4
Gas	1.8	1.3	1.5
Electricity	2.4	1.5	0.8
Heat	-0.2	0.1	0.1
Coal	1.2	0.9	0.9
Energy Sector Debt (including tax arrears)	12.2
Gas	6.4
o.w. external	4.5
Electricity	5.8
Memorandum Items:			
Average Gas Tariff, US\$ per thousand cubic meters	40.4	43.9	44.1
Average Electricity Tariff, US cents per kWh	2.7	3.0	3.1
Cash Collection Ratio, gas sector, percent 1/ 2/	49.2	87.1	88.3
Cash Collection Ratio, electricity sector, percent 1/	52.1	75.5	87.2

Sources: Ukrainian authorities; and Fund staff estimates.

1/ Cash payments by final consumers as a share of total billing.

2/ Data provided by Naftogaz.

128. While cash collections have improved dramatically in the gas sector, Naftogaz still has problems paying its tax liabilities and servicing external debt.⁷¹ Apart from the possible reasons cited by Naftogaz management, the data suggest that another reason may be mispricing of gas sold to final consumers. Gas delivered to consumers by Naftogaz has three sources—domestic production, with reported cost of \$11 per tcm; gas imported from Turkmenistan, which costs about \$36 in cash and about \$36 in terms of goods and services; and finally gas received from Gazprom as a transit fee, with an accounting price of \$50. Taking into account the volumes of gas supplied from each of the sources in 2002, and adding a delivery fee of 52.5 Hrv per tcm within Ukraine, produces an average price of \$50 per tcm (see Table 25).

⁷¹ While payment ratios have been increasing dramatically, tax payments stayed roughly constant, which casts some doubt on reported collection figures.

Table 25. Ukraine: Gas Pricing, 2002

	Volume, bcm	Price/Cost, \$ per tcm
Domestically produced gas	17.8	11
Transit gas	25.7	50
Turkmen gas	17.6	54
Weighted average price	61.2	40
Delivery fee (within Ukraine)		10
Effective tariff, \$ per tcm		39
Mispricing, \$ per tcm		11
Domestic Consumption, bcm		48
Total mispricing, mln of \$		514
Total mispricing, percent of GDP		1.2

Sources: Ukrainian authorities; Naftogaz; and Fund staff estimates.

129. The average gas tariff in 2002 was \$44 per tcm, but taking into account collection ratios, the effective tariff was \$39, implying mispricing of \$11 per tcm. That, after including payment arrears by final consumers,⁷² would translate into an overall quasi-fiscal deficit of 1.6 percent of GDP in the gas sector, which is broadly consistent with the estimate based on tax and payment arrears of 1.5 percent shown in Table 24.

C. Cross-subsidies

130. Table 26 illustrates the size of cross-sectoral subsidies in the gas and electricity sectors in Ukraine in 2001–2002. The average effective tariff is calculated as the ratio of total payments to the overall consumption. Then, for each consumer group, the average effective tariff is compared to the economy-wide one—lower tariff implies a cross-subsidy, while higher one implies an implicit tax.

131. The gross transfers between consumers in both the gas and the electricity sector stand at about ½ percent of GDP each. Both gas and electricity consumption are heavily taxed in agricultural sector, while in the rest of industry electricity tariffs are quite close to economy-wide average but gas tariffs are above the economy-wide average. As one would expect, population receives indirect subsidies on both electricity and gas consumption. While budgetary organizations do receive subsidized gas, their electricity tariffs are substantially above the average.

⁷² Payment arrears by final consumers constitute 0.4 percent.

Table 26. Ukraine: Cross-subsidies in the Energy Sector, 2001–2002

Electricity	Consumption, min kWh	2001					2002				
		Cash Payments, Hrv mln	Non-cash Payments, Hrv mln	Effective Tariff, Hrv per 100 per kWh	Cross- Subsidy, Hrv mln	Consumption, min kWh	Cash Payments, Hrv mln	Non-cash Payments, Hrv mln	Effective Tariff, Hrv per 100 per kWh	Cross- Subsidy, Hrv mln	
Industry	61,988	7,753	1,337	13.6	-188	62,879	9,302	596	15.3	-227	
Agriculture	3,452	634	12	20.0	-231	3,273.7	760	12	23.4	-278	
Rail/Roads 1/	5,125	137	775	10.2	157	5,421.8	713	230	15.3	-20	
Housing Communal Services	11,243	1,145	202	11.1	247	11,437.6	1,424	104	12.9	229	
Budgetary Institutions	4,861	808	137	18.0	-230	4,985.2	902	70	18.8	-194	
Residents incl priv and subsidies	18,787	1,997	47	10.8	475	19,920.0	2,223	18	11.2	739	
Overall 2/	112,326	13,574	2,652	13.3	1,087	115,073	16,577	1,152	14.9	1,145	
Gas	Consumption, million cubic meters	Cash Payments, Hrv mln	Non-cash Payments, Hrv mln	Effective Tariff, Hrv per 100 per cu m	Cross- Subsidy, Hrv mln	Consumption, million cubic meters	Cash Payments, Hrv mln	Non-cash Payments, Hrv mln	Effective Tariff, Hrv per 100 per cu m	Cross- Subsidy, Hrv mln	
Industry	5,020	1,458	65	297	-447	7,236	2,012	66	283	-541	
Agriculture	54	13	0	233	-1	13	5	0	401	-3	
Communal and industr.heat.enterpr.	9,258	1,611	44	176	293	9,421	1,311	168	148	563	
Genco's	4,465	1,094	41	250	-185	4,077	1,257	0	308	-409	
Kyivenergo	3,188	549	9	174	109	3,358	569	0	169	129	
Selffinancing communal service	134	46	3	354	-20	112	36	2	335	-14	
Budgetary institutions	911	121	28	148	55	922	163	3	181	25	
Residents incl priv and subsidies	15,426	2,558	39	167	632	15,491	2,769	17	179	442	
Overall 2/	42,151	8,654	228	208	1,089	42,273	8,659	256	208	1,160	

Sources: Ukrainian authorities; and Fund staff estimates.

1/ Although the calculations suggest a sharp increase in electricity tariff faced by railroad industry, it is just a reflection of a sharp decrease in a share of non-cash payments (from 91 percent to 25). Tariffs based on nominal bill and full collection, without discounting the noncash payments, hardly changed.

2/ Overall Implied Subsidy entries correspond to total level of cross-subsidies.

D. Conclusion

132. **The large quasi-fiscal deficits and debts in the energy sector highlight the importance of structural reform.** The total quasi-fiscal deficit in the electricity, gas and coal sector is estimated at 3½ percent of GDP in 2002, although lack of data prevents a complete analysis. The main problem appears to be the gas sector, with a deficit of about 1½ percent of GDP, whereas the deficit in the electricity sector has fallen significantly and the deficit in the coal sector is explicitly financed through budgetary subsidies. While some progress has been made in raising cash collection rates, the overall pace of reform has been slow in recent years. The main priorities are restructuring the debts of the energy sector, adjusting tariffs to cost recovery levels, strengthening governance, and raising transparency. These steps are crucial to set the conditions for moving ahead with privatization and further sector restructuring.

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