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External Shocks and Performance Responses during Systemic Transition

The Case of Ukraine

Ukraine has been suffering from severe external shocks that complicate its transition to a market economy and require a judicious choice of policy measures.

F. Desmond McCarthy
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Summary findings

Ukraine encountered many economic problems in its first years of independence. Most serious among external shocks were the collapse of trade with the former Soviet Union and sharp price increases for energy imports. External shocks resulted in an income loss in the current accounts equivalent to about 14 percent of GDP a year in 1992 and 1993.

Ukraine did not adopt an appropriate strategy for dealing with the impact of these shocks. Its main policy response has been to continue borrowing, increase arrears, postpone adjustments, and restore administrative interventions. Not only has this policy exacerbated the economic crisis, it has led to massive capital flight and rapid expansion of the underground economy.

With the limited information available, McCarthy, Pant, Zheng, and Zanalda try to identify the major sources of external shocks and to estimate their impact on the current account. They also evaluate Ukraine's policy responses.

Based on examination of the experience of other countries in addressing adverse shocks, the authors recommend the following policies:

• Full commitment to systemic reform and macroeconomic stabilization.

• Privatization, price liberalization, development of a competitive market system, and reform of the legal system.

For the particular situation of Ukraine, they emphasize the importance of:

• Growth-oriented structural adjustment that reflects Ukraine's comparative advantages, including the development of nontraditional industries with high value-added and low energy intensity.

• Greater economic (especially energy) efficiency.

• Integration into world systems of trade and finance.

• Prudent borrowing and debt management strategies, as well as policies to encourage private foreign direct investment and to make more efficient use of foreign debt.

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I. Introduction

Ukraine has suffered substantially from adverse external shocks ever since its independence from the former Soviet Union (FSU) in 1991. What were the major sources of these shocks? How large was the impact of the external shocks on the balance of payments in general and on the current account balance in particular? How did the economy react to these shocks? What was the policy response? While this paper does not attempt to provide a definitive answer to all of these questions, it does offer some insights both qualitatively and quantitatively.

As a young republic deprived of independent policy making for over seven decades, the Ukrainian government started its systemic transformation with only limited experience in formulating strategies to confront significant domestic problems and external instability. The breakup of the FSU and CMEA disrupted the input-output linkages forged in the central planning regime. Collapse of the inter-republic trade and payments systems further hindered exchanges of goods and services among republics to sustain output and income. Moving to international prices for inter-republic trade subjected Ukraine to a remarkable terms-of-trade loss[1]. Moreover, repeated price hikes of imported energy not only created sizable trade deficits for Ukraine but also contributed to an overall shrinking of economic activities in the country. Macroeconomic uncertainties and lack of progress in economic reforms limited Ukraine's access to external financing. The policy response to these shocks has been characterized by stop-and-go and increased administrative interventions designed to maintain the country's production and trade patterns. These policies have not worked: real GDP has fallen by about 40 percent during the last three years and capital flight intensified.

The purpose of this paper is, with limited information[2], to: (a) identify major sources of external shocks; (b) estimate the impact of identified shocks on the current account of BOP; (c) examine Ukraine's performance responses to these shocks; (d) review some successful and unsuccessful international experiences in coping with external shocks; and finally (e) suggest some policy recommendations to lessen the impacts of external shocks over the short to medium terms. The basic methodology[3] is adopted from Balassa and McCarthy (1984), which provides a simple but robust way of decomposing the observable aggregate impact into effects caused by individual recognizable external shocks. The current accounts with the FSU and with the rest of the world (ROW) are treated separately to figure out regional sources of different shocks. Four broad classes of shocks are considered: (i) energy price shocks; (ii) non-energy terms-of-trade shocks; (iii) export demand shocks; and (iv) the accumulated cost of extra-financing caused by shocks in previous periods. Five kinds of economic performance responses are considered: (i) improvements in services accounts; (ii) economic contraction; (iii) export promotion/diversification; (iv) import substitution/compression; and (iv) external financing.[4]

The main conclusions of this paper include that adverse external shocks did affect

the Ukrainian economy substantially, while the performance response was not very effective. Rough estimates show that external shocks could account for up to about half of 40 percent loss of GDP over the past three years. The rest of this loss may be attributed to other efficiency losses and lack of structural adjustments in many sectors of the economy. As energy prices reach the world levels, it becomes critical that policy makers address these issues.

The rest of the paper is organized as follows. Section II briefly discusses recent macroeconomic development in Ukraine and some basic characteristics of Ukraine's trade structure. Section III examines major sources of external shocks. In Section IV, a simple conceptual and computational framework is given for the quantitative analysis of the impacts of the shocks and the responses of the economy.

Broad estimates of the impacts of and responses to external shocks for the past two years are also presented. Section V illustrates cross-country experiences in dealing with external shocks. Section VI concludes this paper by summarizing the main findings indicating some areas that warrant policy consideration.

II. Some Aspects of the Ukrainian Economy in Transition: 1991-93

In this section, recent macroeconomic development in Ukraine and also its trade structure are briefly reviewed. This helps explain why the economy is highly vulnerable to external shocks and how these shocks have such a pervasive effect on domestic economic activity.

2.1 Recent Macroeconomic Development: A Brief Review

During the Soviet era, Ukraine was heavily industrialized and at the same time the "bread basket" of the whole Union. In 1990, the year before independence, industry and agriculture contributed over 40 percent and 30 percent of the total net material product, respectively. The economic structure was shaped to serve the political purposes of the central planners, and was, to a large extent, geared to meet military needs. With a dominating state ownership of production means, little concern was given to economic efficiency in output production and resource allocation.

Heavy heritages of the collapsed socialist system and weak policies toward macroeconomic stabilization and structural adjustments made first years of economic transition in Ukraine very painful. According to official statistics, total output declined by about 14 percent in 1992 and 18 percent in 1993. Industrial output is estimated to have fallen by almost 40 percent in the first half of 1994. Real GDP in 1993 was less than 60 percent of its 1989 level[5]. Though the official unemployment rate remains negligibly small, probably as much as one-third of the labor force of 24 million is either on short-time working, indefinite unpaid leave or underemployed. Domestic investment practically halted. Following partial liberalization of prices in 1992 and accompanied by lax fiscal and monetary policies, the annual average inflation rate increased from about 1400 percent in 1992 to 5000 percent in 1993, with monthly inflation close to 50 percent through the second half of the year. However, in the first quarter of 1994, the monthly inflation rate came down sharply, remaining at single digital level since March. This was attributable in part to a significant tightening of monetary policy during late 1993 and early 1994, and a sharp decline in real wage. The state budget deficit was largely compressed, from 16.5 percent of GDP in 1992 to less than 10 percent in 1993. Subsidies to consumers and producers still took 40 percent of the total fiscal revenue. However, this

improvement in the deficit is probably not sustainable, because it was achieved without structural reforms and mainly by cutting public investment and squeezing enterprises for income taxes. The fiscal deficit has been largely financed by money creation which fueled inflation and eroded public confidence. The value of the karbovanets plummeted from Krb 749 per US dollar at end-1992 to over Krb 50,000 per US dollar in the summer of 1994.

Enlarged bills on oil and gas imports from Russia was a principal factor in generating large external imbalances. The volume of imports declined by a significantly larger degree than exports in recent years but terms of trade deterioration kept Ukraine's current account negative. Lack of foreign exchange including Russian rubles forced Ukraine to fill the external gap by accumulating trade arrears. Living standards for most of the population have fallen steeply, by about 30 percent in 1993 on average as compared with that in 1991. The real wage is estimated to have fallen by more than 50 percent between December 1992 and December 1993. Intensifying energy shortages in 1993 led to widespread rationing and a harsh winter for the population. Meanwhile, the Ukrainian economy becomes more energy intensive, because the contraction of energy consumption has been notably smaller than the overall output decline. Clearly, the external shocks rooted in the disintegration of the FSU and the inappropriate performance responses to these shocks played a significant role in the current crisis.

Selected statistics for the recent macro-economic development in Ukraine are given in Table I. These portray an economy in serious distress. At this juncture there have been few major institutional reforms. Some municipalities have initiated privatization of small enterprises and retail outlets, but these are local initiatives and not a significant part of the overall picture.

Table I

Ukraine: Recent Macroeconomic Development

	1991	1992	1993
Real Growth Rate in%			
GDP at Factor Cost	-13.4	-14.0	-18.0
Exports		-18.6	-16.0
Imports		-25.6	-23.4
Private Consumption		- 9.1	- 9.6
As % of GDP			
Domestic Savings	16.8	9.9	7.4
Domestic Investment	18.6	12.0	8.0
Total Consumption	83.2	90.1	92.6
Resource Balance	- 1.7	- 2.1	- 0.6
Fiscal Accounts			
Revenue and Grants	26.0	29.0	34.4
Expenditure	36.8	45.5	38.4
Budget deficit	-10.8	- 16.5	- 4.0
Current Account Balance	- 1.7	- 2.1	- 0.5
Inflation Rate (CPI) (%)	91.2	1445.3	4927.0
Exchange Rate (Krb./US$)	1.7	221.2	7629.0
Energy Intensity Index	90.6	95.5	100.0

Sources: Ukrainian authorities and staff calculations

2.2 Trade Pattern

Despite its large size[6], the Ukrainian economy was very open, especially to the FSU region. The degree of openness, defined as the sum of the import-GDP ratio and the export-GDP ratio, was 82.5 percent in 1991 (of which 68.7 percent to the FSU), then shrank to 20.3 in 1992 and 33.0 and 1993, because the size of trade decreased substantially. Regional specialization and extensive integration into the Moscow dominated planning system made Ukraine highly dependent on FSU markets not only for its imported energy, raw materials and consumer goods, but also as a market for its

intermediate industrial output and agricultural products. Inter-republic trade traditionally accounted for more than four-fifths of Ukraine's total trade. In the last three years, lack of adjustments to mitigate the impact of substantial terms of trade deterioration, mainly energy price hikes, led to further deterioration of the trade deficit with the FSU—from US$0.7 billion in 1991 to US$1.1 billion in 1992, and then (estimated) to a level over US$3.0 billion in 1993. The overall trade deficit is a little less because Ukraine ran a modest surplus with the rest of the world.

Table II

Inter-Republic Trade Matrix: 1993

As % of Trade Value	Russia	Ukraine	Other	Total
Exports to				
Russia		10.7	22.7	33.4
Ukraine	20.3		6.5	26.8
Other	26.4	4.1	9.3	39.8
Total	46.7	14.8	38.5	100.0

Source: Staff calculations.

Historically, Ukraine was an engine for socialist industrialization in the Soviet Union. Exports of food, coal, metal, and machinery from Ukraine contributed remarkably to the regional development. This important role of material exchange continues to be played even nowadays. With a population of 16 percent of the FSU, Ukraine in 1993 (as shown in Table II) absorbed 27 percent of total imports and contributed 15 percent of total exports in the inter-republic trade, in the face of sharp terms of trade shocks. About half of Russian exports to the FSU went to the Ukraine, which accounted for about three quarters of Ukraine's imports from the FSU while two-thirds of Ukraine's inter-republic exports went to Russia. Ukraine's second largest trade partner in the FSU is Belarus, accounting for 9.5 percent and 6.6

percent of Ukraine's 1992 exports to and imports from the FSU. The share of imports from Turkmenistan jumped from an insignificant 0.1 percent in 1991 to 4.9 percent in 1992, almost completely due to price rises of natural gas.

Table III

Ukraine: Major Trade Partners in FSU
(As % of the Total Inter-republic Trade)

	Export 1991	1992	Imports 1991	1992
Russia	70.8	72.1	79.2	80.5
Belarus	7.8	9.5	6.8	6.6
Kazakhstan	4.3	4.9	4.8	3.2
Turkmenistan	0.7	0.5	0.1	4.9
Other	16.4	13.0	9.1	4.8

Sources: IMF, 1993 Country Review: Ukraine

The relative importance of trade partners also changed substantially in 1992. Inter-republic trade accounted for four-fifths of all trade in 1991, but less than half in 1992, mainly reflecting the valuation effect of the sharp real depreciation of the ruble against convertible currencies. Historically socialist countries continue as Ukraine's most important trade partners. Three countries absorbed in 1992 nearly half of Ukraine's exports: China (23 percent), former Czechoslovakia (13 percent), and Bulgaria (11 percent). For imports in 1992, the main sources were Germany (15 percent), Italy (12 percent), Republic of Korea (10 percent) and former Czechoslovakia (10 percent). In 1993 trade outside the FSU was more diversified. The largest trade surplus in 1993 came from China, whose share in Ukraine's total exports reduced sharply from 23 percent in 1992 to 9 percent in 1993. Notably, trade with United States, Switzerland, and Austria expanded significantly.

Table IV

Ukraine: Structure of External Trade

	1991	1992	1993
In US$ Billion			
Balance	-3.4	-0.6	-1.7
FSU	-0.7	-1.1	-3.3
ROW	-2.7	0.5	1.6
Exports	50.0	11.3	14.9
FSU	42.7	5.3	8.6
ROW	7.3	6.0	6.3
Imports	53.4	11.9	16.6
FSU	43.4	6.4	11.9
ROW	10.0	5.5	4.7
As % of GDP			
Exports	39.9	9.9	15.6
FSU	34.1	4.7	9.0
ROW	5.8	5.3	6.6
Imports	42.6	10.4	17.4
FSU	34.6	5.6	12.5
ROW	8.0	4.8	5.0
Real Growth Rates in %			
Exports		-18.6	-16.0
FSU		-18.3	-18.2
ROW		-20.3	- 3.0
Imports		-25.6	-23.4
FSU		-20.7	-24.8
ROW		-47.2	-14.1

Sources: Ukrainian authorities and staff calculations

The broad trade pattern in 1991 and 1992 is summarized in Table IV. Vis-a-vis the FSU, Ukraine's imports and exports in real terms declined in 1993 by 18 percent and 25 percent, respectively. Vis-a-vis the rest of the world, there was a 20 percent volume decrease in exports and 47 percent volume decrease in imports in 1992. Exports to the rest of the world fell only slightly in 1993. Currently, the changes in relative prices and in the demand-supply relations within the FSU have reshaped Ukraine's trade composition significantly. On the import side of inter-republic trade, the share of raw materials increased sharply, while the

share of capital goods declined. Noticeable is the jump in value terms of the share of energy from less than one-seventh of imports in 1991 to almost a half in 1992. The share of crude oil rose from 4.5 percent in 1991 to 24.7 percent in 1992, even though the volume of oil imports fell by more 20 percent. On the export side, the share of ferrous metallurgy in total earnings from the FSU more than doubled from 14 percent in 1991 to 30 percent in 1992, while the share of machine building fell in 1992 to 24 percent in 1992 from 42 percent in 1991.

Table V

Ukraine: Composition of Inter-republic Trade
(As % of Total Trade Values)

	Export		Imports	
	1991	1992	1991	1992
Consumer Goods	23.4	13.1	19.1	8.7
Food	11.2	7.1	2.6	1.6
Non-Food	12.2	6.0	16.5	7.1
Energy				
Crude Oil			4.5	24.7
Oil Products	0.5	0.6	3.2	6.3
Gas	0.8	1.2	6.3	13.2
Capital Goods &				
Intermediate Materials				
Metallurgy	16.4	33.4	10.7	8.9
Chemicals	6.8	7.7	11.4	7.4
Machinery	41.8	24.2	31.4	11.8
Light Industry	2.9	0.6	5.6	0.5

Sources: IMF, 1993 Country Review: Ukraine

Over half of Ukraine's industrial assets were designed to produce military equipment. Much of the technology is inappropriate for current demand patterns. Incentive distortions exist pervasively due to price controls, state order, foreign exchange surrender requirements, and restrictive trade and income policies. This, together with an unstable foreign exchange regime, weakens Ukraine's position in the international market competition. As the

economy moves towards market orientation, the trade pattern is expected to change to better reflect Ukraine's comparative advantages. In addition, Ukraine can expect to generate some foreign exchange earnings from gas and oil transits at a reasonable domestic resource cost[7]. However, at least, over the medium term it would seem that traditional trading partners will continue to play a major role.

2.3 Institutional Framework and Basic Policies for International Trade

Trade policies in Ukraine have been generally geared to protect domestic markets and mitigate the impacts of differentials between domestic prices and international prices. Intergovernmental bilateral arrangements and inter-enterprise barter[8] continue to be the main means of exchange. All enterprises are required to surrender 50 percent of their foreign exchange earnings at the fixed exchange rate artificially set by the government. Recent work by Kaufmann (1994) has indicated how high surrender requirements result in adverse effects on exports and overall government receipts.

General lack of confidence in the economy has lead to capital flight. Estimates suggest that this was about US$1 to 2 billion in 1993. The Russian ruble has been appreciating against Karbovantsi steadily and rapidly since mid 1993. The Karbovanets has fallen from par with the Ruble in early 1992 to 18 to one by the end of 1993. Consequently, many Ukrainian enterprises keep holding rubles in contravention of the 100 percent ruble surrender requirements regulated by the government. The broad thrust of these policies results in a strong anti-export bias.

At the moment, there is not a very supportive milieu for trade. The large number of relatively opaque government regulations are a major barrier to potential investors together with what is perceived as a broadly inadequate legal system. In terms of what is needed, one might consider the one-stop shop found in a number of Asian countries as an objective. In order to jump start the export effort, one might complement the broad policies by one or more export processing zones. These zones have the advantage of also allowing more careful monitoring and containment of possible corruption influences.

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III. Sources of External Shocks

Many external factors exerted a direct impact on the economy of Ukraine. In this section, four major shocks are identified and analyzed.

3.1 Energy Price Shocks

Ukraine is currently facing severe energy price shocks, whose impacts are pervasive and permanent. Prices for energy imported from the FSU region did not reflect either the production cost nor the market conditions for supply and demand, and were only a fraction of the comparable world market prices. For instance, prices of oil and gas from the FSU region in 1991 were estimated to be about 34 percent and 46 percent of the corresponding world levels. After the disintegration of the FSU in 1991, Russia sought to remove its implicit energy subsides to FSU republics, to raise energy prices to the world levels, and to reduce energy exports if payments were not promptly made. These movements enlarged Ukraine's energy bill to Russia, depressed Ukraine's import capacities, and resulted in a sizeable trade deficit with Russia and compressed domestic economic activities.

Structural weakness makes the Ukrainian economy highly vulnerable to energy shocks in forms of price hikes and supply cut-offs. First, the economy is very energy intensive. An international energy efficiency comparison (see Zheng et al 1994), --in terms of kilograms of oil equivalent required to produce one US dollar of GDP--, shows that while Ukraine's energy intensity is similar to that in some historically socialist countries (such as Romania and Bulgaria), it is double that of Hungary, triple that of Argentina, four times as high as that in Mexico and Turkey, and ten times as high as in France, Spain and Austria. As can be seen from their preliminary regression analysis, the system factor associated with central planning is the major cause of energy inefficiency. One of the reasons is the heavily subsidized prices for energy consumption by residential households and industrial users. Lack of financial incentive for energy conservation also encourages energy waste. Second, Ukraine heavily depends on imported energy. Domestic energy production (mainly coal and electricity) could satisfy less than half of total domestic energy consumption (47 percent in 1992 and 48 percent in 1993). About 81 percent of gas and 90 percent of oil (including oil products) consumed in Ukraine in 1993 were imported from the FSU region, mainly Russia, Kazakhstan and Turkmenistan. Third, Ukraine's energy efficiency has continued to deteriorate. Ukraine's total primary energy consumption decreased by about 9 percent and 12 percent in 1992 and 1993--in comparison with GDP fall of 14 percent and 18 percent respectively--indicating that energy intensity worsened. Continued soft-budget constraints in state-owned enterprises contributed to energy misuses and payment problems. Fourth, domestic energy prices are seriously distorted. Prices of coal were far below the production cost, while the average price of natural gas was only about 35 percent of the corresponding import cost in 1993. On a calorific equivalent basis, fuel oil was about four time more expensive than natural gas in the domestic market in March 1994, while electricity was sold at a price 20 percent below financial costs. Though domestic prices of oil products reached the world levels in early 1994, energy supply to households is still heavily subsidized, providing little incentives for energy conservation. In addition, soft budget constraints of state enterprises and the fear of possible extensive bankruptcy make fee collection a serious problem for domestic energy suppliers and energy misuse difficult to abate. Finally, energy imports from FSU sources are becoming more expensive and uncertain. Bilateral agreements between governments are the principal channels for Ukraine to obtain desired energy imports. Ukraine's terms of energy trade deteriorated remarkably. Crude oil imports was compressed by 43 percent from 35 million tons in 1992 to

20 million tons in 1993. Moreover, gas suppliers in Russia and Turkmenistan have repeatedly threatened to suspend gas deliveries unless Ukraine could manage to reduce its arrears on payments for energy imports.

The magnitude of the energy price shocks are substantial. As shown in Table VII, the import prices of oil and gas in 1993 in nominal terms were about 1,080 times and 565 times as high as those in 1991. In real terms, these two multipliers stood at 6.9 and 3.6, respectively. The import price of Russian gas rose from about 12 percent of the comparable international level (the price of Russian gas in the Western European market adjusted by transit cost) in 1992 to 60 percent in 1993, while the import price of Russian oil rose from 35 percent in 1992 to 76 percent in 1993. A rough estimate indicates that Ukraine's terms of energy trade deteriorated by about 76 percent in 1992 and by a further 9 percent in 1993. Consequently, the value share of energy imports in the total imports from the FSU area was raised from 14 percent in 1991 to 46 percent in 1992, and then to 53 percent in 1993. As percentage of GDP, energy imports from the FSU increased from 3.6 percent in 1991 to 14.4 percent in 1992 and then to 15.6 percent in 1993. Price hikes on energy imports resulted in a very large energy trade deficit vis-a-vis the FSU, which was increased by US$3.4 billion in 1993 in spite of 36 percent volume fall in oil imports and 11 percent volume fall in gas imports.

The permanent nature of the energy shocks calls for significant structural adjustments and energy efficiency improvement, since the potential of self-sufficiency in energy and alternative energy supply is seriously limited in the near future. Lack of hard currency and port facilities to handle bulk shipments prevents Ukraine from importing energy from alternative sources. At the same time alternative domestic energy sources have their own problems. Nuclear power generation, which accounted for about 26 percent and 34 percent of total

electricity production in 1990 and 1993 respectively, is associated with significant safety hazards. The plentiful coal deposits are considered damaging to the environment, and most coal mines are costly to rehabilitate. Moreover, the productivity of Ukraine's coal industry is declining sharply, as demonstrated by an output fall of 14.4 percent in 1993 together with a 9 percent increase in employment. One could envisage alternate energy suppliers over the medium term as Ukraine extends its regional connections but this is unlikely to be significant for at least a few years.

Table VI

Ukraine: Energy Imports from FSU

	Unit	1991	1992	1993
Volume				
Crude Oil	m. ton	51.1	34.1	19.6
Oil Products	m. ton		6.1	6.2
Gas	bcm	89.5	89.6	79.8
Russia		77.1	54.3	49.2
Turkmenistan		12.5	25.5	25.6
Price Indexes				
Crude Oil		100	9381	75241
Oil Products		100	11335	92642
Gas				
Russia		100	2070	47490
Turkmenistan		100	2058	36821
Prices as % of World Levels				
Crude Oil		33.5	35.4	75.7
Gas		45.6	12.3	56.1

Sources: Ukrainian authorities

3.2 Non-Energy Terms of Trade Shocks

The terms of trade (TOT) is conventionally defined as the ratio between the unit value of exports and the unit value of imports.[9] The impact on the balance of payments due to changes in terms-of-trade of

non-energy tradable are based on variations in prices and quantities of exports and imports each year.

Table VII

Ukraine: Terms of Trade with FSU

(1991 = 100.0)	1992	1993
Non-Energy TOT	94.8	87.4
Unit Value of Imports	1430	14840
Unit Value of Exports	1360	12970
Energy (Oil & Gas) TOT	24.4	22.2
Unit Value of Imports	5950	71620
Russian GDP Deflator	1450	15890
Aggregate TOT	62.4	52.7
Annual TOT Change in %		
Aggregate	-37.6	-15.5
Non-Energy	- 5.2	- 7.8
Energy	-75.6	- 9.2

Source: Staff calculations.

Together with volume shrinking in the inter-republic trade, prices of inputs to production increased sharply.[10] In addition to energy, significant price increases were also recorded on the import side for iron, steel, and nonferrous metal products. However, prices of Ukraine's major exports in the FSU market declined remarkably. For instance, the prices of machinery and agricultural products, relative to the corresponding world prices, dropped by 22 percent and 73 percent, respectively. As a result, Ukraine's non-energy terms-of-trade with the FSU deteriorated by 5.2 percent and 7.8 percent in 1992 and 1993, respectively.

Ukraine's terms-of-trade with the rest of the world can be expected to improve over time, when exporters adopt international trade practices and improve the quality of their products.

3.3 Market Disintegration Shocks

The breakup of the FSU was followed by sharp declines in trade among newly independent republics. Deterioration of macroeconomic conditions in the former Soviet Union reduced the availability of raw material supply as inputs while at the same time led to reduced market demand for Ukrainian output. Initial estimates show that in volume, inter-republic trade shrank by two thirds within three years from 1990 to 1993.

Table VIII

Trend of Inter-republic Trade: 1990-93
At Constant 1990 Rubles

Billions	1990	1991	1992	1993
FSU				
Exports	189.3	141.2	93.2	72.1
Index (%)	100.0	74.6	49.2	38.1
Imports	188.5	129.0	99.9	74.6
Index (%)	100.0	68.4	53.0	39.6
Russia				
Exports	74.7	58.8	42.6	31.9
Index (%)	100.0	78.7	57.0	42.7
Imports	67.3	42.9	40.1	27.1
Index (%)	100.0	63.7	59.6	40.3
Ukraine				
Exports	38.3	27.3	18.9	14.4
Index (%)	100.0	71.3	49.4	37.5
Share (%)	20.2	19.3	20.3	20.0
Imports	39.0	33.0	23.7	12.6
Index (%)	100.0	84.6	60.8	32.4
Share (%)	20.7	25.6	23.7	16.9

Source: Figures for 1990-1992, see Michalopoulos, page 27. Figures for 1993 are staff estimates.

The marketing prospects for Ukrainian output faces many difficulties. During the Soviet era, Ukraine was heavily industrialized. Most of its industrial assets were oriented directly or indirectly for military production. This poses many difficulties in reorienting output and especially in the allocation of the labor force during the transition phase.

The ratio of imports to the output in production ranged from 20 percent to 30 percent. However, these imports permeate the whole economy so that about 80 percent of production in Ukraine requires some levels of inputs produced elsewhere in the FSU. As shown in Table VIII, both imports and exports of Russia, the largest market for Ukraine, fell by about 60% during last three years.

Ukraine's agricultural products and consumer goods can be expected to achieve significant export levels over the medium term. Presently these efforts are hampered by a lack of physical and financial infrastructure. If macroeconomic stability and systemic transformation in the former socialist countries in East Europe and Central Asia can be achieved at a reasonable pace, Ukraine will benefit from the recovery and the increasing trade volume.

3.4 Excess Demand for External Financing

The sizeable trade deficit with the FSU area, notably Russia, was financed

primarily through two channels: arrear accumulation and technical credits. Some of them were subsequently capitalized into state debts denominated in US dollars. A large part of Ukraine's current account deficit in 1992 and the first quarter of 1993, valued at Ruble 1.05 trillion, was converted in May 1993 into a debt of US$2.5 billion at market interest rate (LIBOR for six-month US dollar deposits plus one percentage point). Amortization and interest payments are to be made quarterly over the six year period 1994-99. Debt service may be discharged in convertible currencies or rubles at the exchange rate prevailing on the date of payment, or in equity in real property. Apparently, repaying these debts constitutes an additional shock to th economy. There has also been some discussions about the possibility for Russia to swap the trade arrears with equity rights, most noticeably on the Black Sea Fleet and gas transit pipelines.

IV. Impacts of and Responses to External Shocks

This section briefly outlines a simple computational approach of decomposing external shocks, estimating their impacts on the current account, and assessing the economy's performance responses to the external shocks. Conventionally, the impact of unfavorable shocks are registered as positive values in our study. The time index in the text is suppressed (except in some time-lag cases) for presentational purpose.

4.1. Impacts of External Shocks

Four types of external shocks are considered critical in the Ukraine's BOP imbalance: (1) Energy Price Effect, (2) Non-energy Terms of Trade Effect, (3) Export Volume Effect, and (4) Interest Impact of Extra-Financing. They are analyzed in turn.

4.1.1 Energy Price Effect

Ukraine is a net energy importer, except for some electricity exchanges and coal exports. It purchases gas and oil from Russia and gas from Turkmenistan. Since energy trade outside the FSU does not account for a significant share in the total trade, it is treated together with non-energy merchandises in calculations. The effect of energy price changes, EPE, can be written as

$$EPE_t = QO_t(PO_t - PO_{t-1})$$
$$+ QG_t^R(PG_t^R - PG_{t-1}^R) \quad (1)$$
$$+ QG_t^T(PG_t^T - PG_{t-1}^T)$$

where QO and PO are the import volume and price of oil, QG and PG are import volume and price of gas, respectively. The superscripts R and T on gas imports index exporting sources, namely Russia and Turkmanistan. A positive value of EPE represents an opportunity loss in energy import values caused by changes of

import prices from that in the previous period. Table 1 in the Annex presents numerical estimates of the energy price effects.

4.1.2 Non-Energy Terms of Trade Effect

The net effect of terms-of-trade variations, TTE, is usually taken as the difference between the impacts of price changes in imports, TME, and in exports, TXE. Namely,

$$TTE_t^r = TME_t^r - TXE_t^r \quad (2)$$

where the superscript, r, is the region index, which can be the FSU and the rest of the world (ROW). The import price effect, TME, can be derived as

$$TME_t^r = QM_t^r(PM_t^r - PM_{t-1}^r) \quad (3)$$

where QM and PM are the volume and the unit price of non-energy imports from region r. The same formula applies to the export price effect, TXE. Simple substitutions lead to

$$TTE_t = TTE_t^{FSU} + TTE_t^{ROW}$$
$$= QM_t^{FSU}(PM_t^{FSU} - PM_{t-1}^{FSU})$$
$$- QX_t^{FSU}(PX_t^{FSU} - PX_{t-1}^{FSU}) \quad (4)$$
$$+ QM_t^{ROW}(PM_t^{ROW} - PM_{t-1}^{ROW})$$
$$- QX_t^{ROW}(PX_t^{ROW} - PX_{t-1}^{ROW})$$

Hence, the terms-of-trade effects across regions can offset each other when prices move in different directions. The current trade volumes are used as the weights, which are updated over time. Price deviations are always relative to the immediately preceding year. One limitation of this calculation is that a strict

terms-of-trade deterioration may not necessarily lead to an adverse (positive) impact on the balance of payments, when the volume weight on export is significantly greater than the volume-weight on imports. Table 2 in the Annex presents numerical estimates for the non-energy terms-of-trade effect in Ukraine.

4.1.3 Export Volume Effect

Here we concentrate on the impact of fluctuations of demand for Ukrainian exports. The export volume effect, EVE, is calculated as the difference in value of exports if economies of trade partners grew normally, say at the world average growth rate, g^w, and the actual value of exports, taking the change in the income elasticity of demand for Ukrainian exports, η, into consideration. Hence,

$$EVE_t^r = PX_t^r QX_{t-1}^r (\eta_{t-1}^r g_t^w - \eta_t^r g_t^r) \qquad (5)$$

Therefore, if the importers' economies grow at the same pace as the world economy and the demand elasticity does not change, there should be no export volume effects for Ukraine. Meanwhile, the trade partners may diversify their imports away from Ukraine, as most FSU republics currently tend to integrate their economies into the world trading system. This trade diversification, which can be represented by a shrinking η, is assumed to take effect in the medium to long run. In our calculation for the most recent past and the nearest future, we take a constant unit elasticity, directly channelling effects of foreign growth into trade quantity impacts for Ukraine. Numerical estimates of the export volume effects are presented in Table 3 of the Annex.

4.1.4 Cumulative Interest Impact of Extra-Financing

Lack of adequate domestic adjustments forces Ukraine to accumulate payment arrears and seek additional foreign borrowing to

mitigate the impact of the external shocks. While this practice shift the impacts of current shocks into the future, it places further burden on the current account in the future through compounding interest liabilities. Denote the net extra financing at time t-1 as NEF_{t-1} and the applicable interest rate as i_t, then the total additional interest payments due, AIP, shall be

$$AIP_t = i_t NEF_{t-1} \qquad (6)$$

Thus current shocks are channelled into the near future by forcing foreign savings. If such extraordinary borrowing is relied on for a long period, say j years, the cumulative interest impact will be

$$AIP_{t+j} = i_{t+j} \Big[NEF_{t+j-1}$$
$$+ \sum_{l=1}^{j} \prod_{k=1}^{l} (1 + i_{t-k+1}) NEF_{t-l} \Big] \qquad (7)$$

This interest impact can be substantial through accumulation over time if no performance improvement is conducted to offset the unfavorable shocks.

4.2. Responses to External Shocks

Among many reacting measures, five types of performance responses are analyzed here: (1) Improvements in Service Accounts; (2) Economic Compression; (3) Export Expansion; (4) Import Substitution/Compression; and (5) Additional Borrowing/Arrear Accumulation.

4.2.1 Improvements in Services Accounts

One potential sustainable source of foreign exchange for Ukraine is the gas transit revenue. The additional gains in the services account, ISA, can be written as

$$ISA_t = (TRF_t - TRF_{t-1})QGT_{t-1}$$

$$+ TRF_t(QGT_t - QGT_{t-1}) \qquad (8)$$

$$+ (OSA_t - OSA_{t-1})$$

where TRF and QGT are the unit transit fee and the total quantity of gas transit, respectively. The last bracket on the right hand side contains changes in other services accounts, OSA. For instance, as Ukraine is located between Europe and Russia, income from cross-country transports could be expected to increase significantly as normal trade relations resume. In addition, Ukraine has good potential to earn foreign exchange from tourism development.

4.2.2 Economic Compression

Domestic income declines induce falls in demand for foreign goods. The effect of economic compression, EEC, can be calculated as

$$EEC_t^r = PM_t^r QM_{t-1}^r \theta_t (g_t^w - g_t^u) \qquad (9)$$

where θ is Ukraine's income elasticity of imports, and g^u is the GDP (income) growth rate in Ukraine. With a given elasticity, the import volume will be reduced if the economic compression takes place, as compared with what is expected to be the "normal" case (here we take the world average GDP growth rate as a reference).

4.2.3 Export Expansion

The effect of export expansion, EEE, measures the impact generated from Ukraine's export promotion efforts. Simply speaking, if trade policies encourage exports and thus Ukraine's export grows in real terms faster than export growth of its trade competitors, then Ukraine's shares in overseas markets will be enlarged and the trade deficit in the current

account of BOP will be mitigated. We use the following formula to calculate EEE:

$$EEE_t^r = PX_t^r QX_t^r \left[\frac{\Delta QX_t^r}{QX_{t-1}^r} - xg_t^r \right] \qquad (10)$$

where xg^r is the export growth rate in region r. However, if Ukraine's exports grow slower than those of its trade partners, EEE will then be negative, showing a relatively poor response to external shocks.

4.2.4 Import Substitution/Compression

The economy can also respond to external shocks by reducing its imports through changing its import intensity of per unit of real GDP, which is usually captured in the income elasticity of imports, θ. If imports did not grow in reality as in the assumed "normal" case, where a constant import intensity is kept, then the economy induced import substitution or its imports were compressed by technical difficulties, such as payments problems. This effect of import substitution (compression), EIS, can thus be calculated as

$$EIS_t^r = PM_t^r QM_t^r \left[\theta_t g_t^u - \frac{\Delta QM_t^r}{QM_{t-1}^r} \right] \qquad (11)$$

4.3 Filling the Gap: Additional Borrowing and Forced Foreign Savings

Ukraine's external gap, after taking all active and passive reactions to external shocks into consideration, was filled mainly by extraordinary financing, namely additional borrowing (including overdraws in the corresponding accounts) and arrear accumulation. This part of foreign financing works, ex post, as a balancing item to equalize the impacts of external shocks and the effects of responses in the current account of Ukraine's

balance of payments. Hence, we can measure the effect of the net external financing, NEF, as the following (a residual in our calculation):

$$NEF_t = EPE_t + TTE_t + EVE_t + AIP_t \quad (12)$$

$$- ISA_t - EEC_t - EEE_t - EIS_t$$

4.4 Coping with External Shocks: Numerical Results

Using the methodology outlined above, one can obtain the numerical results on impacts of external shocks as presented in Table IX. It is noted that most of the shocks came from the FSU. The broad picture is that the energy price effect was strongly unfavorable, especially due to oil price hikes in 1992 and gas price hikes in 1993. The fall in export demand in the FSU also exerted a significant unfavorable but somewhat smaller impact. The non-energy terms of trade had a favorable but moderate impact, although the non-energy terms of trade themselves deteriorated considerably in 1992 and 1993.

Table IX

Ukraine: Impact of External Shocks (in % of GDP)

	1992	1993
Aggregate Impact	14.22	13.01
Energy Price Effect	13.39	13.75
Crude Oil	7.37	3.48
Oil Products	1.69	1.39
Gas	4.32	8.87
Russia	3.71	6.45
Turkmenistan	0.62	2.42
Non-energy Terms of Trade Effects	-3.44	-3.44
With FSU	-3.44	-3.44
Import Price Effect	13.55	11.01
Export Price Effect	16.58	14.45
With ROW	0.00	-0.01
Import Price Effect	0.00	0.00
Export Price Effect	0.00	0.01
Total Terms-of-Trade Effect with FSU	9.95	10.31
Export Volume Effect	4.27	2.63
FSU	4.29	2.64
ROW	-0.02	-0.01
Liability from Additional Financing	0.00	0.08

Source: Staff calculations

How did the economy respond to these shocks? The numerical estimates on different responses are presented in Table X. Among a variety of measures the government adopted, the primary one was to resort to stronger controls. In both years of 1992 and 1993, economic compression reduced Ukraine's import capacity and the import volume fell significantly, which accounted for nearly one third of the total response impacts. However, in 1992, the main response was to induce import compression through economic retrenchment and import substitution. Export promotion may also played

a moderate role. However, in 1993, the principal response was increased reliance on external financing. Moreover, in 1993, export promotion was not used as a policy option. The anti-export bias in policies was reflected not only in quantitative restriction on exports for a wide range of goods but also through the foreign exchange regime which forced exporters to surrendered 50 percent of their hard currency earnings at an official exchange rate. The official rate was artificially set and was only one-third of the parallel market exchange rate in 1993. Predictably, responses to these disincentives was to drive signif~ant export activities underground and encourage capital flight.

Table X

Ukraine: Performance Responses to Shocks (in % of Current GDP)

	1992	1993
Aggregate Response	14.22	13.01
Improvements in Service Accounts	0.00	1.86
Economic Compression	4.40	4.78
With FSU	3.03	3.51
With ROW	1.37	1.27
Import Substitution and Intensity	6.55	1.61
FSU	3.26	1.89
ROW	3.29	-0.28
Export Promotion	2.94	-2.76
FSU	1.59	-2.00
ROW	1.35	-0.75
Extraordinary Financing	0.33	7.52

Source: Staff calculations

Ukraine can be better positioned to cope with future external shocks if it conducts a set of trade policies consistent with macroeconomic stabilization, structural adjustments and revival of Ukraine's comparative advantages. These shall include, among many other measures, break state controls of foreign trade by de-monopolization, de-regulation, and private participation; and remove distortionary incentives (such as foreign exchange surrender requirements). Recently positive moves have been taken to reform the export regime. With a presidential decree of May 5, 1994, the scope of administrative controls on exports has been significantly narrowed. Quotas presently apply to slightly more than one hundred products that account for about one-third of total export value. The "special regime" for strategic goods was abolished and replaced by a system of quarterly auctions of quotas. All export taxes have been eliminated. Moreover, Ukraine is the first CIS country to sign an "Agreement on Partnership and Cooperation" with the European Union, which focuses on support and protection for investments and the streamlining of policies for the mining and raw materials sectors, science and technology, agriculture, energy and the civilian nuclear industry. Under this agreement, members of the European Union and Ukraine will grant each other most-favored nation status, guarantee the unrestricted and duty-free transit and trade of goods via their territories. Merchandise trade will take place at market prices.

16

V. Learning from International Experiences

Ukraine has experienced some of the most severe adverse shocks of any country not at war. While policy analysis must inevitably reflect the particular socio-political and economic realities in the country of subject, it is also of interest to examine similar, albeit not as severe, situations in other countries. There is now a wide range of experiences in how various countries have addressed external shocks. Given that there is no unique approach in how best to deal with various types of shocks a review of selected country experiences can be very useful and relevant.

In this section we briefly review experiences of a number of countries[11]. Summary details are given in Tables XI through XV. In the Annex, for each of these selected countries one table is produced, containing two parts. The first part lists magnitudes of shocks experienced each year and the performance response to them. The second part presents selected economic indicators which provide some indication of the policy measures adopted that resulted in the performance measures listed.

5.1 Country Experiences

Experiences of five countries that suffered significantly from external shocks in the past years are analyzed here. Some of them, such as Korea and Portugal, are relatively more successful because they adopted appropriate strategies to cope with the external shocks, and took the challenges as opportunities to restructure domestic industries and to integrate their previously isolated economies into the world trade and finance systems. Others, like many African countries, did not manage to react effectively, and thus still live in the shadow of the external shocks. There are also some countries, including the Philippines and Hungary, which started their adjustments in right directions, but their actions were either poorly designed or weakly implemented, therefore their

economic efficiency was not sufficiently improved. Ukraine can certainly learn from these international experiences, and avoid repeating mistakes of other countries.

5.1.1 Greece

Greece is interesting in the sense that the politics tended to be fairly sharply divided. This led to severe difficulties for policy makers who generally were unable to obtain critical support for measures, especially if they involved short term sacrifices by some of the more important groups.

Shocks. Greece being an energy importer suffered adverse effects from the two oil shocks of 1970s equivalent to about 8 percent of GDP in each instance.

Performance Response. The general response in the seventies was to rely unduly on external borrowing. Following the second oil shock the authorities sought to curtail monetary expansion but failed to contain fiscal expenditures. This was largely because of the fragile political balance throughout this period.

Towards the end of the decade fiscal deficits continued to present a major difficulty. However under prodding from the EEC (which provided significant transfers) they began to address the problem. The main pillars of the economic policy program now are fiscal adjustment and structural reform. However, while the monetary adjustment seems to have started at the beginning the '90s, delays in the implementation of other structural reforms have increased the overall burden of the adjustment process. This is leading to a slowdown of the economy and the increase in unemployment is placing serious strains on the authorities, further reducing the margin for maneuvering.

Table XI

Greece: Impacts of

and Responses to External Shocks
(Annual Average over the Period)

	72-75	76-80	81-85	86-91
Macroeconomic Indicators (%)				
GDP Growth	4.8	4.3	1.3	1.7
Inflation (CPI)	15.0	16.4	20.7	17.8
Budget Deficit/GDP	3.1	4.4	12.6	16.6
External Debt/GDP	n.a	n.a	n.a	n.a
Monetary Expansion	6.0	5.5	5.2	0.8

(As % of GDP at Current Market Prices)

Impacts of External Shocks				
Terms of Trade Effect	2.3	1.9	0.0	0.4
Export Volume Effect	0.3	0.1	0.2	-0.3
Interest Rate Effect	n.a	n.a	n.a	n.a
Additional Debt Services	0.1	0.7	1.3	1.1
Total	2.7	2.7	1.6	1.2

Performance Responses				
Export Promotion	1.0	0.0	0.0	0.1
Import Intensity	-0.4	0.8	0.0	-2.0
Economic Compression	0.5	0.4	0.7	0.0
Extraordinary Borrowing	1.6	1.6	0.9	3.1
Total	2.7	2.7	1.6	1.2

Sources: Staff calculation.

5.1.2 Hungary

Shocks. Hungary suffered from serious terms-of-trade deterioration due to the two oil shocks.

Policy Response. Hungary presents a number of problems for the policy analyst. From one perspective they have undergone many years of reform and restructuring. However it does not yet seem to have achieved its expected potential.

Much of this somewhat disappointing performance may be attributed to its failure to achieve a truly competitive position. This is a rather complex issue that would require extensive analysis. Thus the export performance in the eighties was poor. The underlying causes are a combination of factors. These include failure to contain real exchange appreciation, and lack of adequate incentives for potential entrepreneurs. Ironically the fiscal "reform" prior to the breakup of the FSU may have resulted in a negative effect as the overall tax burden is generally perceived as being too heavy.

Table XII

Hungary: Impacts of

and Responses to External Shocks
(Annual Average over the Period)

	72-75	76-80	81-85	86-91
Macroeconomic Indicators (%)				
GDP Growth	6.5	3.3	1.8	-1.5
Inflation (CPI)	3.0	6.4	6.7	19.3
Budget Deficit/GDP	n.a	n.a	1.0	1.5
External Debt/GDP	n.a	46.6	52.0	70.0
Monetary Expansion	n.a	n.a	n.a	n.a

(As % of GDP at Current Market Prices)

Impacts of External Shocks				
Terms of Trade Effect	2.2	0.5	0.7	0.6
Export Volume Effect	1.4	0.2	0.6	-0.9
Interest Rate Effect	n.a	n.a	-0.2	-0.1
Additional Debt Services	-0.4	0.5	0.3	0.0
Total	3.2	1.3	1.4	-0.4

Performance Responses				
Export Promotion	1.6	-2.4	1.0	-2.1
Import Intensity	0.5	2.6	0.3	-0.5
Economic Compression	-0.4	1.1	1.0	0.9
Extraordinary Borrowing	1.4	0.0	-1.0	1.2
Total	3.2	1.3	1.4	-0.4

Sources: Staff calculation.

At the same time Hungary relied unduly on external finance during the seventies. In the early eighties world interest rates rose sharply so

the required servicing became unduly burdensome.

This external debt has been a continuing burden for the authorities and has limited their room to maneuver.

5.1.3 Korea

Evidently, Korea provides an example of one of the more successful countries. There are many explanations available for this success ranging from those who highlight their swift adoption of market principles to the advocates of industrial policy who tend to emphasize the role of such instruments as directed credits to certain industries. Perhaps the best way to characterize Korean policy is that it is pragmatic, flexible and does not readily lend itself to one form or other of ideological bent.

Shocks. Korea experienced severe adverse effects from the first and second oil shocks. In each instance these accounted for about 10 percent of GDP.

Policy Response. The response to the first oil shock was to move to export-led growth. This was largely accomplished by macroeconomic stabilization, neutral trade regime, and selective incentives. This resulted in a depreciation of the real exchange rate to support competitiveness.

Following the second shock and the accompanying slowdown in the global economy the response was initially to curb domestic growth by restricting imports. At this time domestic fuel prices were adjusted upwards and the growth of the money supply was tightened. This drove up interest rates and created problems for Korean firms which historically tended to have high debt/equity ratios. As the growth rate stalled in the early eighties the authorities then decided to move to a more expansionary policy. In order to forestall an

acceleration in inflation wage increases were moderated.

As the global economy recovered in the eighties Korea was well placed for a strong export performance. At the same time they reduced their external debt burden so that by 1990 it was less than 15 percent of GDP.

Table XIII

Korea: Impacts of

and Responses to External Shocks
(Annual Average over the Period)

	72-75	76-80	81-85	86-91
Macroeconomic Indicators (%)				
GDP Growth	9.4	7.9	8.5	9.8
Inflation (CPI)	16.1	17.4	7.3	6.2
Budget Deficit/GDP	2.1	1.7	2.0	0.0
External Debt/GDP	29.2	36.7	48.8	23.1
Monetary Expansion	13.4	14.0	12.1	12.8

(As % of GDP at Current Market Prices)

Impacts of External Shocks				
Terms of Trade Effect	3.0	1.4	-0.4	-0.4
Export Volume Effect	0.7	0.2	0.5	-0.7
Interest Rate Effect	0.0	0.1	-0.2	-0.0
Additional Debt Services	-0.1	-0.1	-0.5	-1.0
Total	3.6	1.6	-0.6	-2.1

Performance Responses				
Export Promotion	3.5	2.2	3.0	1.4
Import Intensity	0.2	-0.7	-0.4	-0.9
Economic Compression	0.1	0.6	-0.2	-0.5
Extraordinary Borrowing	-0.3	-0.6	-3.1	-2.2
Total	3.6	1.6	-0.6	-2.1

Sources: Staff calculation.

5.1.4 Philippines

The Philippines is sometimes viewed as a Latin American style country in the middle of the successful East Asian countries.

Shocks. The Philippines experienced severe adverse oil shocks in the seventies. When the global economy recovered to some extent in the eighties the Philippines was not able to take advantage of the situation like many of its neighbors.

Table XIV

Philippines: Impacts of

and Responses to External Shocks
(Annual Average over the Period)

	72-75	76-80	81-85	86-91
Macroeconomic Indicators (%)				
GDP Growth	5.8	6.0	-1.2	3.7
Inflation (CPI)	16.4	12.4	21.4	9.7
Budget Deficit/GDP	n.a	n.a	5.3	2.8
External Debt/GDP	20.7	43.4	72.5	77.5
Monetary Expansion	-1.5	9.2	-2.3	8.6

(As % of GDP at Current Market Prices)

Impacts of External Shocks				
Terms of Trade Effect	2.1	1.2	0.2	0.4
Export Volume Effect	0.5	0.1	0.3	-0.4
Interest Rate Effect	0.0	0.1	-0.2	-0.1
Additional Debt Services	0.1	0.9	2.0	1.4
Total	2.8	2.4	2.2	1.4

Performance Responses				
Export Promotion	-0.6	0.5	-0.5	0.3
Import Intensity	0.3	-0.1	1.3	-0.7
Economic Compression	-0.1	-0.2	1.4	-0.8
Extraordinary Borrowing	3.1	2.2	0.0	2.6
Total	2.8	2.4	2.2	1.4

Sources: Staff calculation.

Performance Response. The performance response to the first oil shock was to increase external borrowing. Much of the oil price increase was not passed along to consumers. This continued to be the case even after the second oil shock. The authorities continued to borrow heavily. Ironically much of this borrowing was used for investment. However a lot of the investments were not well conceived so that while they did lead to a short-

term expansion they failed to yield the expected returns over time. The government deficit continued to expand and the real exchange rate appreciated. Eventually the policy moved to a strong contraction and uncertain political situation.

In the late nineties they got some help in addressing the external debt burden and moved towards a more stable situation.

5.1.5 Portugal

Portugal faced a variety of problems as it sought to restructure its economy from an inward looking one under the tightly controlled regime of Salazar to moving to integration with the world economy and becoming a member of the EEC.

Shocks. As an energy importer Portugal had adverse effects of about 10 per cent of GDP due to the first and second oil shocks.

Performance Response. Portugal initially sought to borrow externally to offset the impact of the first oil shock. However following the second shock they sought to strengthen their export performance. They enjoyed some success at export promotion as their real exchange rate depreciated. Indeed, Portugal's exports recorded continuous gains in market share during the 1980s.

As the budget deficit increased in the mid-eighties they sought to tighten monetary and fiscal policy. This is reflected in the successful reduction of the budget deficit which declined from 15 percent to 5 percent between 1985 and 1989. The slowdown in growth in the mid-eighties also helped the current account through the fall in imports. The external debt was also brought under control so that presently it is about 40 percent of GDP.

Recent policies to privatize some of the public sector industries has helped restrain

budget deficits. The overall reform of the economy has also been helped by the large influx of EC structural funds.

The unemployment rate below 5 percent at the beginning of the nineties is the lowest in the EC except for Luxembourg.

Table XV

Portugal: Impacts of

and Responses to External Shocks
(Annual Average over the Period)

	72-75	76-80	81-85	86-91
Macroeconomic Indicators (%)				
GDP Growth	4.0	5.2	1.1	4.1
Inflation (CPI)	16.9	21.6	23.3	11.4
Budget Deficit/GDP	8.4	10.0	11.4	9.1
External Debt/GDP	9.8	30.6	66.9	46.1
Monetary Expansion	2.8	-0.1	0.4	5.3

(As % of GDP at Current Market Prices)

Impacts of External Shocks				
Terms of Trade Effect	2.9	1.9	0.0	-0.1
Export Volume Effect	0.5	0.1	0.3	-0.6
Interest Rate Effect	0.0	0.1	-0.3	-0.1
Additional Debt Services	0.3	1.0	2.8	1.2
Total	3.7	3.1	2.8	0.5

Performance Responses				
Export Promotion	-1.1	0.3	1.7	1.2
Import Intensity	1.5	-0.4	1.0	-4.2
Economic Compression	0.8	0.1	1.1	-0.5
Extraordinary Borrowing	2.4	3.1	-1.0	4.0
Total	3.7	3.1	2.8	0.5

Sources: Staff calculation.

5.2 Broad Lessons for Ukraine

From the above analysis, it is clear that the main challenges for Ukraine in coping with external shocks in the short to medium run are to design effective strategies and appropriate policies to mitigate the adverse impacts of

energy crisis and trade collapse[12]. The broad international (both successful and unsuccessful) experience in addressing external shocks suggests a number of policy responses for consideration. Among many policy measures, the following ones are especially relevant for Ukraine, and thus deserve a high priority in policy agenda.

(a) Macroeconomic Stabilization

Full commitment to and effective implementation of systemic reforms and macroeconomic stabilization are necessary, though not sufficient, conditions to successfully dealing with external shocks. Appropriate fiscal and monetary policies shall be pursued to curb inflation and to restore macro-economic imbalances, especially the state budget deficit and the current account deficit in the balance of payments.

The economy will become less vulnerable to external shocks when a competitive market system has been developed through privatization of ownership and liberalization of prices and controls. It is essential to dismantle the wide range of regulations that presently cover virtually all facets of economic life. Reform of the legal system should move quickly to clearly establish private property rights, allow for enforcement of contracts, and provide a supportive environment for commercial activities.

(b) Structural Adjustment

The fundamental way to cope with external shocks in the medium and long run is though growth-oriented adjustment[13]. The permanent nature of the external shocks demand significant structural changes to better reflect Ukraine's comparative advantages. The service sector, which was underdeveloped during the Soviet era (especially services in the financial market, e.g. banking and insurance), should be

reconstructed to meet demands of a private market economy. Non-traditional industries of high value-added and low energy intensity should be encouraged to develop at a fast pace. The design and the quality of Ukrainian products should be upgraded to enable sales in the international markets at reasonable domestic resource costs and to change Ukraine's export composition from mostly intermediate materials to manufactured goods.

(c) Improvement of Economic Efficiency, especially Energy Efficiency

High economic efficiency can considerably reduce the adverse impact of external shocks, as exemplified in some countries with very limited natural resources, such as Japan and South Korea. Most enterprises in Ukraine should be privatized to improve protection efficiency, and competitive markets in factors, goods, capital, and foreign exchange should be developed to improve allocation efficiency. For those state enterprises remaining in some most crucial sectors or at natural monopolist positions, their budgets should be hardened and their behaviors should be "marketized", as some Chinese state enterprises have successfully done. Meanwhile, outdated capital should be replaced and production technology should be upgraded.

Ironically the very poor energy efficiency of the economy also offers the prospect of significant returns for policy reforms in that sector. It would be very useful to develop an energy balance and see where the most significant savings can be achieved. Given the relatively high energy intensity in Ukraine, enormous savings can be realized through energy conservation. A key policy to achieve this is pricing of energy. Significant adjustment in administered energy prices should be made to ensure that consumers pay the full cost of energy they consume. Poor households may be compensated through targeted financial assistance. There are many ways to pass on

energy price increases. Some countries, such as Korea, tend to pass on most of the price increase to gasoline users while moderating the increase for productive industries and also shielding the poorer groups (who tend to use kerosene in that country). Most European countries also tend to have high gasoline prices. In these countries there is broad public acceptance for this approach also because it moderates adverse environmental effects of energy consumption.

(d) Integration into the World Trade and Finance Systems

Changing from inward- to outward-orientation will reinforce Ukraine's strength to cope with external shocks. As shown by experiences of Eastern Asian countries including China, integration into the world trade and finance systems will enable Ukraine to reduce its reliance on particular sources for imports of energy and raw materials, diversify markets for Ukraine's exports, and to absorb foreign financial resources to support domestic economic recovery.

Active policies should remove the anti-export bias, price-allocation controls, and state monopoly on foreign trade. Emphasis should be put on export promotion and more efficient use of imports. It should be also a priority to reopen the interbank market for foreign exchange and to unify the exchange rate at the market rate[14]. Meanwhile, it is very important to simplify the necessary administrative procedures for international trade and foreign investment, for example adapting the one-stop shops commonly adopted in Eastern Asian countries.

In some sectors, such as tourism, there is remarkable potential. A cursory review of some of the other former socialist countries indicates that significant results could be achieved in as short a period as one to two years. Another area that warrants consideration is the establishment of free trade zones. Again

there is wide international experience available on the pros and cons of these operations. Given the history of Ukraine and especially Odessa and its Black Sea environment, this could also be done relatively quickly.

(e)   Prudent Debt Management

Borrowing excessively either externally or domestically is not advisable in principle, as this practice only shifts the current burden of external shocks into the near future, and could set in motion a debt spiral. Prudent borrowing and debt management strategies are needed to ensure that future debt repayment obligations do not choke off the country's growth potential.

On financing the external gaps, there are many different approaches that may be more suitable than debt financing[15]. These include direct foreign investment, various debt equity swaps, lease back schemes and privatization open to foreign participation. At the same time it is important that all debt incurred should be used effectively and constructively. To the extent possible creditors should be willing to share at least some of the risk to ensure that projects involving foreign financing are well conceived and managed.

In this context, it is desirable to formulate policies to encourage private foreign direct investment, to improve efficiency of utilization of foreign debt, and to take advantages of alternative channels to finance the external gaps.

VI.   Concluding Remarks

Adverse external shocks have not only significantly complicated Ukraine's transition from a centrally planned economy into a competitive market economy, but also have added serious challenges to the policymakers. This paper provides a quantitative framework for identifying the major external shocks and the nature of policy response to these shocks. Not surprisingly, the most severe shock was the deterioration in Ukraine's terms of trade brought about by the steep increase in the price of energy imports (mainly from Russia). Again not surprisingly, the policy response was largely inactive and ineffective, through increased reliance on additional external borrowing, accumulating payment arrears, and restoring administrative interventions. To some extent, these inappropriate responses have contributed to the economic crisis that Ukraine currently faces. Consequently, little adjustment has occurred thus far and Ukraine's economy remains fragile and mired in difficulties.

However, Ukraine does have great potential for economic recovery and sustainable development. It is essential to move towards stabilization so that Ukraine's evident strong resource base can be used effectively for sustainable growth.

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Notes:

1. As pointed out by Tarr (1993), moving to world prices leads to improvement in the terms of trade for exporters of raw material and energy (notably Kazakhstan, Russia, and Turkmenistan) and deterioration in the terms of trade for countries relying on food and machinery exports (such as Ukraine and Moldova). Tarr's estimates based on 1990 data of 105 trading sectors show that a full scale adoption of international prices for inter-republic trade implies for Ukraine a terms of trade loss of around 6.4 percent of GDP per year.

2. As for most empirical studies on historically socialist economies, finding reliable basic statistics poses a major problem. Accuracy of our quantitative results can be discounted to some extent because of poor data reliability. However, our qualitative analysis can be reasonably plausible.

3. There exists extensive literature on external shocks and their impacts on policy formulation and economic performance. One common approach is the applied computable general equilibrium analysis, e.g., Elbadawi and Schmidt-Hebbel (1991), Go (1991), Hoon and Phelps (1992), Mendoza (1992), Schmidt-Hebbel and Serven (1992), Devarajan, Lewis, Robinson (1993), Grais and Chu (1994), and van Wijnbergen (1982), when information shortage is not a major problem. The other approach—macroeconomic accounting decomposition framework—is very heuristic and practical and has been applied to many developed and developing countries, e.g. Balassa (1985), Ballasa and McCarthy (1984), Ballasa and Tyson (1983), McCarthy, Neary and Zanalda (1994), McAleese and McCarthy (1989), and McCarthy and Dhareshwar (1992). The comparative advantage of this approach is that it is relatively robust, easy to implement and transparent.

4. In the case of Ukraine, most of the external financing in the past two years has been through arrears accumulation.

5. However, it is important to stress that there exists a growing unofficial or black economy that might be as much as 25 percent of the GDP in early 1994.

6. In Europe, Ukraine ranks second in territory (smaller than only Russia) and fifth in population. However, it is still very "small" in international transactions in the sense that Ukraine has little power to manipulate the international prices of its traded goods.

7. Currently, about a quarter of gas consumed in Western Europe is supplied by Russia through Ukraine (60 billion cubic meters in 1992). See Grais and Zheng (1994) for a detailed study on the strategic interdependence in the East-West gas trade and a fair division of the trade gain.

8. It is estimated that direct barter exchange between enterprises could amount to as much as 50 percent of the total inter-republic trade. This contributes to under-recording of trade though its impact on trade balance could be limited.

9. Since Ukraine does not export oil and gas, the major trade partners' GDP deflator is used as a proxy for the unit value of exports.

10. In fact, a large part of merchandise exchanged between republics has already been priced at international levels in late 1993.

11. More detailed studies on adjustments to external shocks for a larger sample of developing countries can be found, for example, in Rajapatirana, Corden, Cooper, and Little (1993).

12. See also Sanderson and Williamson(1985) for a comprehensive review on how developing should countries adjust to external shocks and an examination of policy simulations using some World Bank macroeconomic models.

13. Bruno (1982) sets up a good framework to discuss adjustments and structural change under supply shocks.

14. Khan (1986) reviewed exchange rate policy response to exogenous shocks in developing Countries.

15. Martin and Selowsky (1988) and Kharas and Shishido (1985) provide good discussions on foreign borrowings and macroeconomic adjustments to external shocks.

Ukraine: Energy Imports from the FSU

	Unit	1991	1992	1993 Estimated
Volume	(mtoe)	127.2	116.4	93.6
Crude Oil	million Ton	51.1	34.1	19.6
Oil Product	``		6.1	6.2
Gas	bcm	89.5	89.6	79.8
From Russia	``		77.1	54.3
From Turkmenistan	``		12.5	25.5
Price	Ruble/toe	83	4,936	59,456
Crude Oil	Ruble/Ton	70	9,381	75,246
Oil Product	``	85	11,335	92,642
Gas: Russia	Ruble/Tcm	78	2,070	47,490
Turkmenistan	``	78	2,058	36,821
Value	billion Rubles	10.6	574.4	5,566.8
Crude Oil	``	3.6	319.9	1,474.8
Oil Product	``		69.1	574.4
Gas	``	7.0	185.3	3,517.6
From Russia	``		159.6	2,578.7
From Turkmenistan	``		25.7	938.9
As % of Total FSU Imports				
Total	%	14.0	46.1	53.2
Crude Oil	``	4.7	25.7	14.1
Oil Product	``		5.5	5.5
Gas	``	9.2	14.9	33.6
As % of GDP				
Total	%	3.6	14.4	15.6
Crude Oil	``	1.2	8.0	4.1
Oil Product	``	0.0	1.7	1.6
Gas	``	2.4	4.6	9.8
Energy Price Effect	billion Rubles		564	5,148
Crude Oil	``		318	1,291
Oil Product	``		69	504
Gas	``		178	3,353
From Russia	``		154	2,466
From Turkmenistan	``		25	886

Sources: Ukrainian authorities and staff calculations.

Ukraine: Impact of Non-Energy Terms-of-Trade Shocks

		1991	1992	1993 Estimated
Trade with FSU				
Exports				
Volume	billion Units	74.0	65.0	52.0
Change	%		-12.2	-20.0
Value	billion Rbl	74.0	881.0	6745.0
Unit Value	Rbl/Unit	1.0	13.6	129.7
Change	%		1,255.4	857.0
Price Effect	billion Rbl		816.0	6,040.2
Imports				
Volume	billion Units	65.0	47.0	33.0
Change	%		-27.7	-29.8
Value	billion Rbl	65.0	672.0	4,896.0
Unit Value	Rbl/Unit	1.0	14.3	148.4
Change	%		1,329.8	937.7
Price Effect	billion Rbl		625.0	4,424.2
Balance	billion Rbl	9.0	209.0	1,849.0
Terms of Trade		100.0	94.8	87.4
Change	%		-5.2	-7.8
TOT Effect	billion Rbl		-191.0	-1,616.0
Trade with ROW				
Exports				
Volume	million Unit	7,317.0	6,000.0	6,593.0
Change	%		-18.0	9.9
Value	million US$	7,317.0	6,000.0	6,600.0
Unit Value	US$/Unit	1.000	1.000	1.001
Change	%		0.0	0.1
Price Effect	million US$		0.0	7.0
Imports				
Volume	million Unit	10,000.0	5,500.0	4,726.0
Change	%		-45.0	-14.1
Value	million US$	10,000.0	5,500.0	4,730.0
Unit Value	US$/Unit	1.0	1.0	1.0
Change	%		0.0	0.1
Price Effect	million US$		0.0	4.0
Balance	million US$	-2,683.0	500.0	1,867.0
Terms of Trade		100.0	100.0	100.0
TOT Effect	million US$		0.0	-3.0

Sources: Ukrainian authorities and staff calculations.

Ukraine: Volume Impacts of Exports and Imports

		1991	1992	1993 Estimated
GDP Growth Rate				
Average of Trade Partners	(%)	(0.2)	(0.7)	0.0
FSU	(%)	(12.9)	(18.5)	(11.5)
ROW	(%)	(0.1)	(0.5)	0.1
Ukraine	(%)	(11.9)	(13.7)	(18.0)
Export Shrinking Rate				
FSU		12.7	17.8	11.5
ROW		(0.1)	(0.2)	(0.1)
Import Shrinking Rate		11.7	13.0	18.0
Export Volume Effects				
FSU	billion Rbl		178.7	968.2
ROW	million US$		(13.2)	(7.0)
Import Volume Effects				
FSU	billion Rbl		121.0	1,254.0
ROW	million US$		1,302.0	990.0
Import Substitution/Intensity				
FSU	billion Rbl		130.0	675.9
ROW	million US$		3,130.0	(216.2)
Export Promotion				
FSU	billion Rbl		63.6	(716.7)
ROW	million US$		1,280.4	(587.6)

Sources: Ukrainian authorities and staff calculation.

GREECE: External Shocks, Performance Response Measures and Selected Economic Indicators

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
External Shocks																				
								(as a percent share of GDP)												
Terms of Trade Effect	-0 24	2.69	6.00	0.60	0.82	2.11	1.41	2 56	2.67	0.89	-0 89	-0 21	0.22	0 01	-1 19	1 21	2 03	-0 77	1 94	-0 81
Export Volume effect	-0 06	-0.27	0.25	1.33	-0 34	0.40	0.13	-0.11	0 33	0.75	0.96	0 08	-0 80	0 02	-0 01	-0.44	-0 71	-0 43	-0 09	-0 16
Interest Rate Effect	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Additional Debt Serv.	0.00	-0.03	0.22	0 23	0.33	0.38	0.60	0.69	1.30	1.66	1.14	1 33	1.44	1.11	0 93	0.89	1 03	1 31	1 29	1 21
Total	-0.30	2.39	6.46	2.16	0 82	2.89	2.14	3.15	4.30	3 30	1 23	1 21	0 87	1.13	-0 27	1 66	2 38	0 12	3 14	0 24
Performance Response Measures																				
								(as a percent share of GDP)												
Additional Net External Financ	-0.48	2.68	1 33	2.84	1 55	1.96	0.48	3.88	-0.14	-1.21	3.77	-1 08	-0 09	3 25	0 56	2 52	1 67	4 86	5 71	3 06
Export Promotion	0.76	1.87	-0.36	1.69	-0 78	-0.41	1.17	-1.24	1.21	-1.72	0 86	0 68	0 94	-0 77	2 08	-0 17	-4 84	3 29	-0 70	0 77
Import Intensity	-0 33	-2.17	3.55	-2 64	-0 13	0.56	0 66	0.09	2.55	4 94	-4 24	0 67	-0.12	-1 36	-3 13	-1.39	6 09	-7 58	-2 29	-3 44
Economic Compression	-0 25	0.01	1.95	0.27	0 17	0.78	-0.17	0.41	0 68	1.29	0 84	1.03	0.13	0 01	0 22	0.69	-0 56	-0 45	0 42	-0 15
Total	-0.30	2.39	6.46	2.16	0 82	2 89	2.14	3.15	4 30	3.30	1 23	1 21	0 87	1.13	-0 27	1 66	2 36	0 12	3 14	0 24
Selected Economic Indicators																				
GDP growth (%)	8.9	7.3	-3.2	6.0	6.0	3.0	6.8	3.4	2.1	0.0	0 5	0 1	2 9	3 0	1.6	-1 0	4 2	3 4	-0 3	2 2
CPI (%)	4.3	15.5	26.9	13.4	13 3	12.2	12.5	19.0	24.9	24 5	20 9	20 2	18 4	19 3	23 0	16 4	13 5	13 7	20 4	19 5
Private cons/GDP (%)	65.7	63.4	67.7	67.5	65 6	65.9	65.2	63.3	63 9	67.5	67.4	66 7	64 7	65 5	67 4	69 8	68 3	70 4	71 4	70 3
Government cons/GDP (%)	12.2	11.5	13.8	15.2	15.1	16.0	15.9	16.3	16.4	18.0	18.3	16 8	19 5	20 4	19 4	19 7	20 0	20 5	21 1	19 6
Gross domestic inv/GDP (%)	29.6	35 8	29.3	27.0	26 3	26.4	27.7	30 1	25.0	25.4	21.1	21 9	20 1	21 3	19 8	17 2	19 3	20 5	19 8	19 9
Fixed inv/GDP (%)	27.8	28 0	22.2	20.8	21 2	23 0	23.9	25.8	24.2	22 3	19.9	20 3	18 5	19 1	18 5	16 8	17 5	19 2	19 4	18 2
Priv fixed inv/GDP (%)	19.3	20.2	15 5	15.0	15 5	17.9	18 6	20.1	18 6	16 3	14 0	13 3	10 9	10 9	11 5					
Pub fixed inv/GDP	8.4	7.8	6.7	5.8	5 7	5 1	5 3	5.7	5.8	5 9	6 0	7 0	7 6	8 1	7 0					
Gross domestic sav/GDP (%)	21.2	24 6	19.8	17.0	18 0	18 0	20.6	22.4	19.7	16 9	10 6	11 6	11 8	9 7	11 3	9 9	12 7	11 5	8 9	7 6
Deficit/GDP (%)	-1.7	-2.7	-4 2	-3.9	-3 9	-4 8	-4.3	-3 9	-5 0	-10 9	-18 5	-5 2	-14 0	-14 5	-11 0	-13 5	-15 3	-26 5		
Monetary expansion (M2-CPI)	19.4	4.9	-10 6	10.1	12 8	10.6	9.4	1.6	-6 8	2 8	9 8	0 7	5 1	7.4	-4 6	5 1	10 1	8 4	-1 9	-12 1
Nominal interest rate (Treasury Bill Rate)															17 0	17 3	16 3	16 5	18 5	18 8
Real exc.rate index (1980=100)								114 9	100.0	103.5	107.4	99 4	96 3	93 2	87 3	89 3	91 6	92 6	98 3	99 5
Nom. exc.rate (Drachmas per US$)	30.0	29.6	30 0	32.1	36.5	36.8	36.7	37.0	42.6	55.4	66 8	66 1	112.7	136 1	140 0	135 4	141 9	162 4	158 5	182 3
Total reserves (Millions of US$)	899	899	782	964	881	1048	1305	1343	1346	1022	861	901	954	868	1519	2681	3619	3223	3412	5189
Primary school enr. ratio				104		103	103	100	103		105	105	105	104	102	101	99	97		
Secondary school enr. ratio				78	80	81	81	81	81		84	85	88	90	95	95	98	98		
Infant mortality rate	27.3	24.1	23 9	24	22 5	20 4	19.3	18.7	17.9	16 3	15 1	14 6	14 3	14.1	12 2	11 7	11	9 7	9 7	9
Unemployment Rate (% of labour force)				2.3	1.9	1.7	1 8	1.9	2 8	4	5 8	7 8	8 1	7 8	7 4	7 4	7.4	7 7	7 4	7	8 2

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HUNGARY: External Shocks, Performance Response Measures and Selected Economic Indicators

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
External Shocks																				
								(as a percent share of GDP)												
Terms of Trade Effect	-0 17	-0.49	5.42	3 87	-1 06	1 72	0 75	1.29	0.02	0 33	1 20	0 95	1 29	-0 25	2 02	-0 46	-0 77	-0 83	-0 19	3 80
Export Volume effect	-0.43	-1 87	1.48	6 43	-1 62	1 41	0.53	-0.41	1 21	2.05	3 34	0 28	-2 63	0 05	-0 02	-1 26	-1 92	-1 53	-0 23	-0 42
Interest Rate Effect	na	na	na	na	na	na	na	na	0 01	0 31	-0 39	-0 66	0 20	-0 56	-0 47	0 14	0 29	0 39	-0 30	-0 78
Additional Debt Serv.	0.00	-0 63	-1.03	0 08	0.43	0.23	0.37	1.01	0.60	0 63	0 53	0 25	0 05	-0 05	-0 05	0 16	0 15	-0 06	-0 03	-0 03
Total	-0.60	-2.99	5 88	10.37	-2.25	3.36	1.65	1.89	1.84	3 32	4 68	0 82	-1 09	-0 83	1 48	-1 42	-2 25	-2 03	-0 75	2 56
Performance Response Measures																				
								(as a percent share of GDP)												
Additional Net External Financ	-8.25	-3.74	10.68	7.08	-2 96	1.21	5 72	-3 57	-0 43	0.21	-1 66	-2 03	-1 09	-0 19	3 08	-0 17	-2 46	0 21	-0 16	6 89
Export Promotion	3.35	-0 21	-2.99	6.28	15.00	3.08	-1.41	1.68	-0 46	0 98	4 36	2.72	-1 47	-1.49	-1 79	-0 86	-1 28	-3 17	-2 19	-3 04
Import Intensity	4.66	1.68	-1.75	-2.73	14 34	-0.60	-3 09	2 00	0.47	1.48	0 78	-1 37	1 02	-0 41	-0 20	0 46	0 74	0 43	0 08	-4 59
Economic Compression	-0 37	-0 72	-0 07	-0 25	1 37	-0.34	0.43	1.79	2 24	0 65	1 20	1 50	0 45	1 26	0 39	-0 85	0 75	0 50	1 51	3 30
Total	-0 60	-2.99	5.88	10.37	-2.26	3.36	1.65	1.89	1 84	3.32	4.68	0 82	-1 09	-0 83	1.48	-1 42	-2 25	-2 03	-0 75	2 56
Selected Economic Indicators																				
GDP growth (%)	6 4	7.5	5 8	6 3	3 6	6.8	4.7	1.8	0 0	3.9	1 9	0 7	2 6	-0 1	1 5	4 5	-0 5	0 1	-3 9	-10 5
CPI (%)		3 4	1.8	3 8	5 2	3 9	4.7	9.0	9 3	4 6	7.0	8 4	8 7	7 0	5 3	8 2	16 3	16 8	28 9	40 1
Private cons/GDP (%)	57.2	56.3	58 2	59.2	58.1	57.4	57.4	58 8	61.2	61.3	60 8	61 5	61.4	62 8	63 9	63 5	61 1	60 7	61 7	68 0
Government cons/GDP (%)	9.9	9.4	10.4	10.4	10 1	9 9	10.4	10.4	10 3	10.1	9 9	10 1	9 7	10 1	10 7	10 3	11 6	10 3	10 7	12 3
Gross domestic inv/GDP (%)	31.7	29.7	35.8	37.8	35 9	37.2	41.3	34 0	30.7	29 7	28.5	26 5	25.7	25 0	26 9	26 7	24 7	25 7	24 0	22 6
Fixed inv/GDP (%)	29.8	28.7	31.0	33.4	31.8	34 0	34.0	32.4	28.8	26 5	25 2	24 6	23 0	22 5	24 0	24 7	20 4	20 1	17 6	20 9
Gross domestic sav/GDP (%)	33 0	34 2	31.3	30.3	31.8	32.7	32.1	30.7	28.5	28 6	29 3	26 4	28 9	27 1	25 5	26 2	27 3	29 0	27 7	19 7
Deficit/GDP (%)										-2.8	-1 9	-0 7	1.6	-1 0	-2 8	-3 3	-0 2	-1 9	0 8	
Real exc.rate Index (1980=100)								92.4	100.0	108.3	112.0	105 7	107.1	110.4	99 2	89 2	91 0	92 1	96 0	108 8
Nom. exc rate (Forint per US$)	55 3	49.0	46.8	44.0	41.6	41.0	37.9	35.6	32.5	34.3	36 6	42 7	48 0	50 1	45 8	47 0	50 4	59 1	63 2	74 7
External debt (Millions of US$)						43	8245.3	8866.3	9763 5	9785 5	10196	10733	10990	13955	16907	19584	19603	20390	21269	22657
External debt/GDP (%)						0.3	49.6	46.2	44.1	43.1	44 0	51 1	54 0	67.7	71.2	75 0	68 1	69 6	64 6	71 7
Total reserves (Millions of US$)												1231	1560	2153	2302	1634	1467	1246	1070	3936
Exp on education/GDP										1 0	0 9		0 8	0 9	0 9	1.3	1 2			
Exp on health/GDP										1.5	1.6		1 7	1 9	2 0	2 1	1 0			
Primary school enr. ratio				99		98	97	96	96		99	99	99	98	98	97	95	92		
Secondary school enr. ratio				63				70	69		73	73	73	72	70	70	72	78		
Infant mortality rate	33 2	33 8	34.3	32.8	29.8	26.2	24.4	23.7	23.1	20.6	19 7	19	20 2	20 4	19	17	15 8	15 7	14 8	15 6

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KOREA: External Shocks, Performance Response Measures and Selected Economic Indicators

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
External Shocks									*(as a percent share of GDP)*											
Terms of Trade Effect	1.45	472	693	-1.06	-1.99	153	0.64	204	459	-034	-1.11	004	-073	000	-156	177	-134	-091	027	-031
Export Volume effect	-0.12	-069	054	290	-059	084	030	-024	081	134	252	018	-1.66	003	-002	-095	-156	-1.28	-020	-032
Interest Rate Effect	-003	011	005	-0.16	-009	001	013	014	017	026	-040	-051	022	-047	-035	007	006	006	-004	-008
Additional Debt Serv	000	-039	-033	022	003	-021	-034	-015	034	004	-012	-057	-091	-087	-080	-104	-114	-135	-097	-061
Total	1.29	385	7.19	1.90	-263	216	073	1.79	592	131	089	-085	-309	-130	-272	-015	-397	-348	-094	-131
Performance Response Measures									*(as a percent share of GDP)*											
Additional Net External Financ	-528	-012	630	-212	-493	-158	207	365	-218	-119	-542	-311	-234	-320	-612	-429	-368	124	-005	-024
Export Promotion	395	565	083	360	405	501	167	-162	183	485	328	320	248	105	394	503	130	-268	007	085
Import Intensity	187	-056	-009	-025	-078	-097	-274	-078	203	-306	267	039	-265	081	110	028	-067	-261	-102	-217
Economic Compression	075	-1.12	014	067	-098	-030	-027	053	424	07?	037	-133	-058	003	-163	-117	-091	057	006	025
Total	1.29	385	7.19	1.90	-263	216	073	1.79	592	131	089	-085	-309	-130	-272	-015	-397	-348	-094	-131
Selected Economic Indicators																				
GDP growth (%)	58	152	89	7.7	135	11	109	74	-33	69	74	121	92	69	123	118	114	61	9	84
CPI (%)	117	32	243	253	153	102	145	183	287	213	72	34	23	25	28	3	71	57	86	97
Private cons/GDP (%)	738	697	704	709	660	629	615	626	642	639	625	610	601	594	555	526	514	533	530	527
Government cons/GDP (%)	10.1	84	96	11.0	109	10.7	10.3	98	115	116	115	107	100	101	101	99	98	105	106	108
Gross domestic inv/GDP (%)	208	245	316	27.1	253	273	31.4	355	317	295	286	288	298	293	283	295	306	334	369	391
Fixed inv/GDP (%)	203	230	254	24.9	240	269	309	326	321	280	284	292	289	282	278	287	292	316	365	380
Priv fixed inv/GDP (%)	151	190	212	202	192	21.7	256	267	25.1	210	237	248	245	239	240	250	253	276	320	
Pub fixed inv/GDP	53	41	42	47	48	5.2	53	60	70	69	47	45	44	44	39	38	39	40	45	
Gross domestic sav/GDP (%)	16.1	216	206	185	241	27.5	295	282	243	245	260	283	299	305	344	375	389	362	364	365
Deficit/GDP (%)	-38	-05	-22	-20	-14	-18	-12	-17	-22	-33	-30	-10	-12	-12	-01	04	16	02	-07	-17
Monetary expansion (M2-CPI)	130	362	25	1.8	142	272	230	84	-28	5.1	217	163	80	93	147	152	110	126	131	99
Nom interest rate (Gov Bond Yield)			21.0	211	216	215	216	252	288	236	174	131	143	136	116	124	130	147	150	165
Real exc rate index (1980=100)								1306	1000	1044	1068	1026	1012	955	806	801	889	1014	988	988
Nom exc rate (Won per US$)	393	398	404	484	484	484	484	484	607	681	731	776	806	870	881	823	731	671	708	733
External debt (Millions of US$)	3203	39235	50913	64887	79828	14343	17301	22865	29480	32989	37330	40419	42099	47133	46724	39808	35716	32796	34981	40518
External debt/GDP (%)	300	290	27.0	307	276	386	345	355	471	473	501	491	467	507	441	302	204	154	143	143
Total reserves (Millions of US$)	523	86481	277.19	76132	1970	2967.1	27639	29592	29249	26617	28073	23467	27536	28693	33196	35837	12347	15214	14793	13701
Exp on education/GDP	28	22	20	22	25	26	25	28	30	30	36		31	30	29	29	29			
Exp on health/GDP	02	02	01	02	02	03	03	0.2	02	02	03		02	02	02	04	03			
Primary school enr. ratio				107		107	109	109	110				103	99	97	98	101	104	105	
Secondary school enr. ratio				56	61	64	68	75	76				87	91	90	89	87	86	86	
Infant mortality rate	47					35											20			

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PHILIPPINES: External Shocks, Performance Response Measures and Selected Economic Indicators

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
External Shocks																				
									(as a percent share of GDP)											
Terms of Trade Effect	1 01	-2.24	3.19	6.39	0 08	0 63	1.32	0 80	3 10	2 19	0 36	-1 87	-1 44	1 55	-0 B2	0 11	-1 89	0 85	3 78	0 60
Export Volume effect	-0 15	-0.52	0 28	2.55	-0 44	0.48	0.19	-0 28	0.75	1 00	1 35	0 04	-1 03	0 09	0 25	-0 63	-0 93	-0 66	0 03	-0 33
Interest Rate Effect	-0.14	0 35	0.12	-0.29	-0 16	0.02	0.35	0.31	0 21	0 34	-0 43	-0 72	0 30	-0 59	-0 45	0 15	0 25	0 28	-0 22	-0 53
Additional Debt Serv.	0 00	0.17	-0 09	0 42	0 62	0 59	0 72	1.20	1.52	2.19	2 08	1 96	2 33	1 45	1 15	1 09	1 31	1 55	1 83	1 62
Total	0 73	-2 23	3.49	9.06	0 10	1 72	2.57	2.03	5 58	5 72	3 36	-0 58	0 16	2 50	0.12	0 72	-1 26	2 02	5 42	1 36
Performance Response Measures																				
									(as a percent share of GDP)											
Additional Net External Financ	2 26	-2.93	6 63	6 34	0 61	-0 24	4 25	2 88	3 44	2 84	2 38	-0 27	-4 21	-0 53	-0 09	3 52	2 55	6 09	5 55	-1 82
Export Promotion	-3 47	-0.30	-1 89	3 43	-0 26	1.65	-0.45	-0 46	1 94	1 32	0 25	-1 60	-1 44	-0 80	0 79	-0 62	0 27	1 03	0 69	-0 32
Import Intensity	2 08	1 38	-1.59	-0 71	0 01	0 37	-1.14	-0 16	0 31	1.10	0 25	0 43	2 74	1 75	-0 58	-1 67	-2 84	-2 17	1 22	1 81
Economic Compression	-0.14	-0 38	0 35	-0 01	-0 26	-0 05	-0 08	-0 22	-0 11	0 46	0.49	0 87	3 07	2 08	-0 01	-0 51	-1 24	-2 93	-2 04	1 68
Total	0 73	-2.23	3.49	9.06	0 10	1 72	2 57	2 03	5 58	5.72	3 36	-0 58	0 16	2 50	0 12	0 72	-1 26	2 02	5 42	1 36
Selected Economic Indicators																				
GDP growth (%)	5.4	8 8	3.4	5 5	8 8	5.5	5 1	5.6	5 1	3.4	3 6	1 8	-7 3	-7 3	3 4	4 8	6 3	6 0	2 6	-0 8
CPI (%)	8.2	16 6	34 2	6.8	9 2	9.9	7.3	17 5	18.2	13.1	10 2	10 0	50 3	23 1	0 8	3 8	8 8	12 2	14 1	18 7
Private cons/GDP (%)	68 8	63 8	65.4	64 5	62 3	62.2	63 6	62 5	66.7	67 1	68 8	68 6	72 1	75 0	72 1	73 2	71 2	70 7	70 5	70 3
Government cons/GDP (%)	10 2	9 5	9.9	10.7	10 8	10.3	10 1	9.4	9 1	8 8	9 1	8 3	7 0	7 6	8 0	8 4	9 0	9 2	10 2	10 2
Gross domestic Inv/GDP (%)	20.8	21.8	26 9	30 9	32 9	30.6	30 6	33 2	29.1	27 5	27 9	29 6	21 8	15 3	16 0	18 0	18 4	21 8	24 9	20 9
Fixed inv/GDP (%)	17.7	17.1	19 9	24.6	26 3	25 2	25 2	27.5	27.2	27 8	27 5	29 8	24 5	17 5	16 8	17 0	17 8	20 9	24 1	20 7
Deficit/GDP									59	79	7.6	5 2	3 1	2 6	4 8	1 1	2 4	2 0	5 0	1 7
Expenditure/GDP (%)	15.2	16 1	13.6	17.0	15 3	14 8	14 7	13 6	15.5	17.0	16 5	14 4	12 7	14 0	18 0	17 5	17 0	18 6	20 5	19 9
Monetary expansion (M2-CPI)		5 5	-11.6	1 4	9 4	17.6	21.3	-1.5	-0 8	5 8	15 2	7 9	-26 7	-13 4	0 6	9 2	12 5	15 6	11 6	2 2
Nom.interest rate (Gov. Bond Yield)	11 9	9 4	10 0	10.3	10 2	10 9	10 9	12 3	12.1	12 5	13 8	14 2	28 5	26 7	16 1	11 5	14 7	18 6	23 7	21 5
Nom. exc rate (Pesos per US$)	6 7	6 8	6 8	7.3	7 4	7.4	7.4	7.4	7.5	7.9	8 5	11 1	16 7	18 6	20 4	20 6	21 1	21 7	24 3	27 5
Real exc.rate Index (1985=100)								97.3	102.4	105 7	109 7	92 3	91 4	100 0	78 0	71 8	69 8	74 9	72 9	72 0
External debt (Millions of US$)	1962	2028	2428	3064	4437	8183	10772	13282	17417	20883	24551	24395	24355	26622	28207	29763	28965	28375	30232	31358
External debt/GDP (%)	24.5	20.1	17.6	20 6	25 9	41.6	47.4	48.3	53.7	56.6	66 1	73 5	77 5	86 6	94 4	89 4	76 1	66 7	68 4	69 8
Primary school enr. ratio				107	103	108	110	107	113		109	109	107	106	107	109	110	111	110	
Secondary school enr. ratio				54	60	61	63	64	65		66	67	68	64	67	68	71	73		
Infant mortality rate	64	62	60	58	56	54	53	53	52	52	51	50	49	47	46	45	44	43	42	41
Exp on education/GDP	2 3	2.0	1.8	1.9	1 9	1.9	2.1	2.0	1.7	2 2	2.4	2 2	1 8	2 3	2 4	2 5	2 7	3 2	3 3	3 1
Exp on health/GDP	0.5	0.4	0.5	0.7	0.7	0 7	0 7	0.7	0 6	0 7	0 7	0 7	0 5	0 7	0 8	0 7	0 7	0 8	0 8	0 8

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PORTUGAL: External Shocks, Performance Response Measures and Selected Economic Indicators

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
External Shocks																				
								(as a percent share of GDP)												
Terms of Trade Effect	1 79	2 99	7 97	-1 18	1.52	1.98	0 25	2 68	3 26	2 39	-0 14	0.97	-1 11	-1 95	-3 40	0 83	0 01	0 25	1 99	-0 13
Export Volume effect	-0 15	-0 56	0.44	2 15	-0 42	0 45	0 17	-0.15	0 48	1 04	1 59	0 14	-1 47	0 03	-0 01	-0 70	-1 27	-1 09	-0 17	-0 33
Interest Rate Effect	-0 04	0 09	0 04	-0 07	-0 04	0 00	0 07	0 12	0 13	0 26	-0 45	-0 84	0 40	-0 81	-0 44	0 08	0 14	0 15	-0 08	-0 17
Additional Debt Serv	0 00	0 11	0 33	0 81	0 45	0 64	1.07	1.20	1.44	3 02	3 53	3 00	2 79	1 80	0 84	0 78	1 21	1 91	1 33	1 16
Total	1.61	2 63	8.78	1 71	1.51	3 08	1.55	3.86	5 29	6 71	4 53	3 28	0 60	-0 94	-3 01	0 99	0 09	1 22	3 07	0 53
Performance Response Measures																				
								(as a percent share of GDP)												
Additional Net External Financ	1 56	2 35	8 56	-2 78	3 47	2 70	-0 35	2 42	7 23	7.28	0 80	-7 38	-2 15	-3 41	0 99	6 24	7 48	0 50	5 87	2 78
Export Promotion	-0 46	-0 63	-0 55	-2 77	-1 54	0 58	-0 28	1.13	1 60	0.16	3 40	3 05	0 86	1 23	3 00	-0 30	0 59	3 10	1 76	-1 27
Import Intensity	0.89	1 87	-0 42	3 80	-0 37	-0.32	1 59	0.49	-3 56	-1 98	-0 03	5 87	-0 28	1.17	-6 74	-4 49	-7 41	-1 28	-3 90	-1 08
Economic Compression	-0 38	-0 97	1.19	3.46	-0 06	0.12	0.59	-0 18	0 02	1 26	0 36	1 74	2 17	0 08	-0 26	-0 46	-0 58	-1 10	-0 65	0 09
Total	1.61	2 63	8.78	1 71	1 51	3.08	1.55	2.86	5 29	6.71	4 53	3 28	0 60	-0 94	-3 01	0 99	0 09	1 22	3 07	0 53
Selected Economic Indicators																				
GDP growth (%)	8.0	11 2	1.2	-4.3	8 9	5.6	3 4	5 7	4 6	1 0	3 1	-0 1	-1 6	3 3	4 3	4 4	4 5	5 0	4 3	2 2
CPI (%)	8 9	10.4	28 0	20.4	18 2	27.1	22 7	23 6	16 6	20 0	22 7	25 1	29 3	19 3	11 7	9 4	9 6	12 6	13 4	11 4
Private cons/GDP (%)	64 2	64 8	72.6	77.1	75 0	72.0	68 0	67 5	66 6	69.3	68 7	68 6	70 5	67 5	65 6	67 6	68 1	66 6	66 0	66 1
Government cons/GDP (%)	13.4	12 6	14.1	15.0	13 7	14.0	13 9	13 9	14 4	14 9	14 4	14 6	14 5	14 2	13 5	15 5	16 2	16 4	17 0	18 1
Gross domestic inv/GDP (%)	28 9	29.7	28 5	24 3	25 9	29.0	30 5	29 5	34 1	36 1	37 0	29 1	23 2	21 7	23 3	27 4	29 8	29 1	29 1	28 3
Fixed inv/GDP (%)	27 1	26 8	26 0	25.9	25.1	26 8	28 2	27.2	29.5	31.4	31 6	29 6	23 9	21 7	22 3	24 2	26 8	26 4	26 4	26 0
Gross domestic sav/GDP (%)	24 2	22 7	13 2	11.9	12.5	14 0	18.1	18.7	19 0	15 9	16 8	16 8	15 0	18 3	20 8	21 1	20 2	20 7	21 2	
Deficit/GDP (%)				-8.4	-11 5	-6 5	-11.8	-10.1	-9.8	-12 2	-10 5	-9 6	-9 7	-14 8	-12 3	-10 4	-8 7	-4 9		
Monetary expansion (M2-CPI)	9 8	17 6	-9.8	-6 7	-3 0	-9 3	-4 2	1 2	14 9	9 5	0 9	-6 2	-8 9	6 5	8 8	8 7	4 7	-0 1	-0 3	9 8
Nom.interest rate (Treasury Bill Rate)									12 4	13.5	14 4	18 1	21 1	20 9	15 6	13 9	13 0		13 5	14 2
Real exc.rate index (1980=100)									98 4	100 0	105 6	105 0	97 5	99 1	100 3	99 3	97 9	98 5	103 0	109 8	117 1
Nom. exc.rate (Escudos per US$)	27.1	24 5	25.4	25 6	30 2	38 3	43.9	48 9	50.1	61.5	79 5	110 8	146 4	170 4	149 6	140 9	144 0	157 5	142 6	144 5
External debt (Millions of US$)	876 9	1090	1239.4	1502.3	2042 8	4350 5	6267.1	7902.7	9729.2	11577	13598	14516	14870	16633	16642	18303	17877	20424	24207	28568
External debt/GDP (%)	10.2	9.5	9.3	10.2	13 2	26.6	35.0	38 9	39.4	48 4	58 2	70 3	77 6	80 1	56 3	49 8	42 9	45 1	40 6	41 6
Total reserves (Millions of US$)	1291	1676	1161	398	176	366	871	931	795	534	447	385	518	1395	1456	3327	5127	9952	14485	20629
Exp on education/GDP			2 4	3 5			3.8	3 7	4 3	4 3	4 2		4 1	3 9	4 1	4 2	4 6			
Exp on health/GDP			1.0	1.5			3.3	3.7	4.0	4.3	3 9		3 4	3 8	3 6	3 4	3 8			
Primary school enr. ratio				113		117	103		123		121	119	126	124	126	128		121		
Secondary school enr. ratio				53	54	55		48	37		43	47	52	56	63	58		61		
Infant mortality rate	41 4	44 8	37 9	38 9	33.4	30 3	29 1	26	24 3	21.8	19 8	19 2	16 7	17 8	15 9	14 2	13 1	12 2	11	10 8

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