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**AN "UNOFFICIAL" ANALYSIS
OF ECONOMIES IN TRANSITION
AN EMPIRICAL FRAMEWORK
AND LESSONS FOR POLICY**

Daniel Kaufmann and Aleksander Kaliberda

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The views expressed in this paper are solely those of the authors (who take responsibility for all errors and omissions), and do not necessarily reflect official institutional views. Comments are welcomed.
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An "Unofficial" Analysis of Economies in Transition An Empirical Framework and Lessons for Policy

Daniel Kaufmann and Aleksander Kaliberda

Abstract

We challenge the conventional view of how post-socialist economies function by incorporating the unofficial economy into the analysis of the overall economy. The interpretation of the dynamics of transition is then seen to differ. A simple framework for understanding the evolution of the unofficial economy--and the linkages between both economies--is advanced. It highlights the main characteristics of "unofficialdom," contrasting conventional notions of "informal" or "shadow" economies, and also focusses on the determinants of the decision to cross-over from one segment of the economy to the other. The empirical evidence, based both on micro-surveys as well as on a top-down ("macro-electric") comparative country methodology, suggests the potential usefulness of the overall framework.

Integrating the unofficial economy into the study of the overall economy matters analytically and empirically. For instance, the interpretation of national income, of sectoral trends (such as trade, services, and exports), and of labor markets and household patterns take on an additional dimension, often leading to results that differ from analysis in which the unofficial economy is ignored.

By the mid-nineties the Former Soviet countries are estimated to have over one-third of their activity in the unofficial economy, while in Central and Eastern Europe the average is close to one-quarter. Intra-regional variance is large, with some countries having 10-15% of their economy engaged in unofficial activity while others exceed 50%. The growth of unofficial activities in most post-socialist countries, and its mitigating effect on the decline in official output during the early stages of transition, have been marked. Although the preliminary nature of this investigation ought to be underscored, the cross-country empirical results appear to be broadly consistent with the hypothesized determinants of the unofficial economy dynamics. In particular, fast market liberalization, macro-stability and institution of a stable and moderate tax regime is emphasized. While widespread, most of "unofficialdom" in the region is found to be relatively *shallow*, i.e., subject to reversal by appropriate economic policies.

The simple framework and evidence presented have implications for measurement and forecasting, and for policy-making. The lessons for policy (such as in social protection and taxation) are found to differ from conventional advice given. In other areas, such as liberalization and privatization, even faster reforms than often advocated are called for.

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AN "UNOFFICIAL" ANALYSIS OF ECONOMIES IN TRANSITION

An Empirical Framework and Lessons for Policy

Introduction: Recognizing Unofficialdom

Policy makers, politicians, foreign advisors, and international institutions analyze and make decisions based on statistics measuring official activity. The inherent difficulties in measuring unofficial activities, compounded by the reluctance of many government agencies to acknowledge their importance, has led to a neglect of the unofficial segment of the economy. In the states of the former Soviet Union (FSU) and Eastern Europe, however, its importance is increasingly evident.¹ Yet it is barely mentioned in the many official reports about these economies.² Often only footnotes about it are inserted, or, at best, a few separate paragraphs as an afterthought.

More fundamentally, little systematic attempt is made to integrate the analysis and quantification of the unofficial economy into an overall review of economic developments in a country. This matters significantly when trying to arrive at an understanding of national incomes and production as well as other macroeconomic variables. At a sectoral level, neglecting the unofficial economy blurs our understanding of what is happening with commerce, services, and exports, for instance. At the microlevel, it does not allow for an effective assessment of which households can or cannot cope on their own during the transition.

The omission of a systematic treatment of the unofficial economy also impairs the provision of effective advice and of policy implementation. For instance, a country with a large share of its activities in the unofficial economy would benefit from nonconventional policies in areas such as social protection and taxation.

In order to redress such bias we have carried out a number of studies of the unofficial economy. The work we have performed until recently, Ukraine-based microsurveys, is contained in other papers.³ In other countries, particularly in some Central and Eastern European (CEE) countries, local researchers have also carried out a number of studies of the unofficial economy.

At one level, this paper is a contribution to the study of the unofficial economies in the FSU/CEE region. Yet, by assessing the unofficial economies' evolution and importance, we also go further. This paper challenges the conventional view of what is important in these economies and what are their dynamics. The hypotheses put forth, as well as the empirical findings, have wide-ranging ramifications for economic analysis and policy making in the region. The sheer magnitude and variance in the unofficial economy estimates derived here point to the need for furthering our country-specific understanding of the unofficial economies in the region. The lack of recognition of these activities in most analyses implies that an implicit estimate of zero (or

close to it) for the unofficial economy is chosen by default when working with levels or shares (or same growth rates when analyzing trends).

First, we present a simple framework emphasizing the main characteristics and determinants of the unofficial economy. We then briefly review some of the microsurvey evidence, focusing on Ukraine. Next, we develop a simple, common empirical methodology to derive comparative estimates of the evolution and size of the unofficial economies in sixteen countries in the region (including Ukraine). The approach is based in part on estimates of aggregate electric consumption. In this respect, we draw partly from the recent work of Dobozi and Pohl, relying on electricity consumption as a reasonable proxy for overall gross domestic product (GDP) in a country.⁴ In addition, we rely on independent estimates available for unofficial economies from earlier studies to construct a baseline (at the beginning of the transition). We also go significantly further, by providing a methodological approach to measuring the unofficial economy, which is based on differential assumptions of energy elasticities across countries.

The "macroelectric" approach to estimating an unofficial economy and the various possible biases and drawbacks of this methodology are discussed. The case of Ukraine is tested empirically as a case study for the applicability of the overall approach. The results for all countries in our FSU/CEE sample are analyzed in a separate section. Various scenarios with different assumptions (and sensitivity analyses) are presented. After reviewing the unofficial economy dynamics between 1989 and 1994, we analyze the relationship between the evolution of the unofficial economy and how overall performance fared in the sixteen countries in the region.

Our framework of analysis and the empirical results have multiple implications for policy. We discuss these in some detail in the concluding section of the paper.

A Simple Framework of Analysis for the Unofficial Economy

Main Characteristics of the Unofficial Economy

From a meaningful economic standpoint, we define an unofficial activity as the unrecorded value added by any deliberate misreporting or evasion by a firm or individual. As such, it correlates with untaxed incomes and (unrecorded) capital flight. In contrast to conventional notions of shadow or informal economies in many other countries, particularly in Latin America and Asia, the unofficial economies in Ukraine and many other FSU/CEE countries exhibit some distinguishing features.

1. Coexistence of State and Nonstate Activities and Enterprises

The state sector is rather active in unofficial activities, state officials and enterprise managers are often linked to nonstate activities and firms in order to operate more flexibly and generate "private income" flows (from state assets). Further, nonstate activities operating unofficially are not necessarily fully private. Leaseholders, collectives, and other nonprivate entities play an important role as well. Complex bridging channels between government agencies, state enterprises, and nonstate unofficial activities exist, since state assets are utilized to generate unofficial private income flows for state officials, state managers, and their conduits. The unofficial (or extralegal) transfer of state assets to individual hands is an equally important mechanism bridging state entities with unofficial activities. Decapitalization of state assets is often a spontaneous transfer from the state to individual ownership.

2. Visibility and Size

Unofficial activities are not necessarily small, nor are they relatively invisible. Some activities, in fact, are rather large and visible. But their operation and physical visibility does not guarantee ease of recognition of their unofficial nature. This is because many unofficial activities take place within large state enterprises where part of the operation is official and part is unofficial. Both are equally visible except for accounting and bookkeeping purposes.⁵ Some of the unofficial activities involve technologically sophisticated and large-scale activities that are in sharp contrast to the "sidewalk stand" notions of informal sectors in other parts of the world.

3. Unofficial in an Economic Regulatory Sense

This unofficial economy is mostly nonviolent and noncriminal (in contrast to drug cartels, for instance). There is a criminal mafia, as in many other countries, that is often described as the "shadow economy." But the noncriminal unofficial economy appears to be much larger in most of the FSU and CEE states. Unofficial activities have mostly opted to become "unofficial" in order to avoid the burden of administrative regulations (licenses, permits, etc.) on their economic activities, and high taxation rates. Hence, they are extralegal in an economic regulatory sense.

4. Continuum in the Official-Unofficial Activity Spectrum

In contrast with informal sectors in Latin America and Asia, for instance, a sharp dichotomy between official and unofficial activities is often absent in the FSU and CEE states. Depending on their incentives structure, the degree of unofficialdom within each activity or enterprise can vary along a continuum--from operating fully in the official economy to being completely unofficial. The vast majority of activities operate in both economies.

5. Social Services and State Subsidies Are Accessible to Unofficial Activities

Contrary to Latin American notions of "informal," whereby the informal sector is defined in terms of activities outside of the social security net, in the FSU and CEE states virtually every activity and individual is within the state social safety net. This is due partly to the legacy of socialism and partly to two features already described above: the coexistence of state and nonstate activities and the continuum in the official-unofficial spectrum within one activity. Hence, many unofficial activities are very adept at extracting resources from the state, which is an important engine for their growth.

6. The Unofficial Economy Is "Shallow"

Since unofficial activities operate in very close proximity to official activities (often within a continuum in the same line of business), and since they respond to economic incentives largely driven by government policies, the unofficial economy is mostly of a "shallow" nature. Except for the entrenched, hard-core mafia, activities hover flexibly between officialdom and unofficialdom, largely motivated by government-induced incentives.

The Entrepreneur's Decision Rule

In simple analytics, the decision and extent to which an economic agent will choose to operate in the unofficial economy will be determined by the point at which the expected marginal benefits of doing so equal the (risk-adjusted) expected marginal costs.⁶ As a generalized proposition for the FSU and CEE states, the following factors are hypothesized as playing an important role in influencing an enterprise's costs (including penalties) and benefits of operating unofficially, and thus its decision of whether, and to what extent, to operate unofficially.

1. The degree of political liberalization versus repression. In our framework this is to be interpreted mainly in terms of the degree of bureaucratic autonomy and discretion in applying regulations that officials may potentially enjoy in a nonrepressed regime (in an economy in transition). Substantial bureaucratic discretion will lower the perceived (and actual) penalty of operating in the unofficial economy.

2. The extent of underdevelopment in the rule of law and related institutional enforcement mechanisms in a market economy. Conversely, the costs of operating unofficially increase in an economy in transition where there is institutional strength and sophistication of market-based institutions, particularly regarding a country's legal framework, its enforcement efficacy, and the degree of incorruptibility of the judiciary and civil service. These institutions, if well developed, provide checks and balances on potential abuses resulting from a

bureaucrat's discretionary actions and increase the penalty of operating unofficially on entrepreneurs and individuals. At an extreme, in a country at war, where such institutional enforcement may all but have disappeared, the incentives for unofficialdom are very large.

3. The degree of administrative controls versus economic liberalization of the official economy. Economic liberalization is broadly interpreted to encompass liberalization of the foreign exchange, trade, and pricing regimes, as well as deregulation at the enterprise level. Thus, the higher the degree of official administrative controls (licenses, price and exchange controls, etc.), the higher the costs of operating officially and hence the greater incentive for escaping the official grasp by joining the unofficial economy.

4. The official tax burden. High tax rates, multiple taxation, and constantly shifting tax regimes (even with retroactive applicability) provide a powerful impetus for escape to the unofficial economy.

5. The extent of macroeconomic instability. The higher the degree of macroeconomic instability, the greater the incentive to engage in unofficial transactions. In particular, macroeconomic instability induces flight to foreign currency, capital flight, and barter transactions. Further, the doctoring of a firm's accounts becomes easier when prices are volatile and changing rapidly.

6. The type of activity. Some types of activities, such as trade and commerce, are more prone to operate unofficially than some large state factories. The costs of crossing over from official to unofficial activities are greater for some activities than others, and so is the probability of getting caught and being penalized.⁷

At an aggregate country level, inferences can be made of the expected size and dynamics of the unofficial economy, by aggregating individual decision making. One would expect that a country would have a particularly large unofficial economy where political liberalization has taken place, the demand for services and trade is substantial, there is a weak legal institutional framework, high and volatile tax rates exist, and there is a lack of economic liberalization and macroeconomic stability. From this simple framework it could be predicted that countries like Azerbaijan, Ukraine, and (to a somewhat lesser extent) Russia would have experienced a very large increase in their unofficial economies, while in Poland, Estonia, and the Czech Republic, for instance, the increase would be smaller.⁸

The Case of Ukraine: Summary of the Microevidence

The formalized analytics and microevidence on the unofficial economy in Ukraine is treated in some detail elsewhere.⁹ We summarize some of the issues and survey-based data here.

Administrative Controls Since Independence

Until the end of 1994, Ukraine had not had a sustained attempt at economic liberalization. A brief and partial attempt took place in late 1992 and early 1993, but it was quickly reversed. In fact, except for that brief liberalization period (when Leonid Kuchma was prime minister and Viktor Pynzenyk was his vice premier for economic reform), the degree of official state administrative controls over markets and economic activity did not differ significantly from pre-independence days. State-imposed restrictions, interventions and distortions in the foreign exchange, trade, and pricing regimes, were extreme over much of the late-1991 to 1994 period. An administrative control index, summarizing state interventions and controls in various markets in Ukraine, was constructed to trace the dynamics of liberalization during the period and is presented in summary fashion in Figure 1--depicting the evolution of (antiliberalization) administrative controls in various markets and regimes from early 1992 to late 1995 (see Table 1). Breaking from the unreformed past, the new administration embarked in late 1994 on a more ambitious liberalization program than theretofore, but it is still too early for these reforms to have had an impact on the behavior of economic agents. Thus, to understand the dynamics of the official and unofficial economies in early 1995, economic policies since independence through 1994 are critical.

Indeed, until late 1994 the pronounced administrative impediments in the trade, exchange rate, and pricing regimes, in addition to the high tax rates and microregulatory impediments (many at the local level), implied a very high cost of doing business officially in Ukraine--prohibitively high, in fact, for many entrepreneurs and fledgling activities. Thus, many either closed down or became increasingly unofficial. Doing business unofficially has been the strategy for many to reduce the very high cost of operating officially, and, in many instances, of merely surviving.

The Costs of Operating Unofficially

The evidence on the cost of operating unofficially for those who choose to do so underscores just how costly it is to operate officially. To provide a partial picture of these costs, it is telling to review the microevidence on the unofficial "fees" required to overcome official administrative impediments. Table 2 summarizes the responses of seventy-five nonstate small and medium-sized enterprises regarding some of the costs of getting around various administrative regulations. Recent survey work (with a different sample) also provides insight to

FIGURE 1: UKRAINE
OVERALL ADMINISTRATIVE CONTROL INDEX

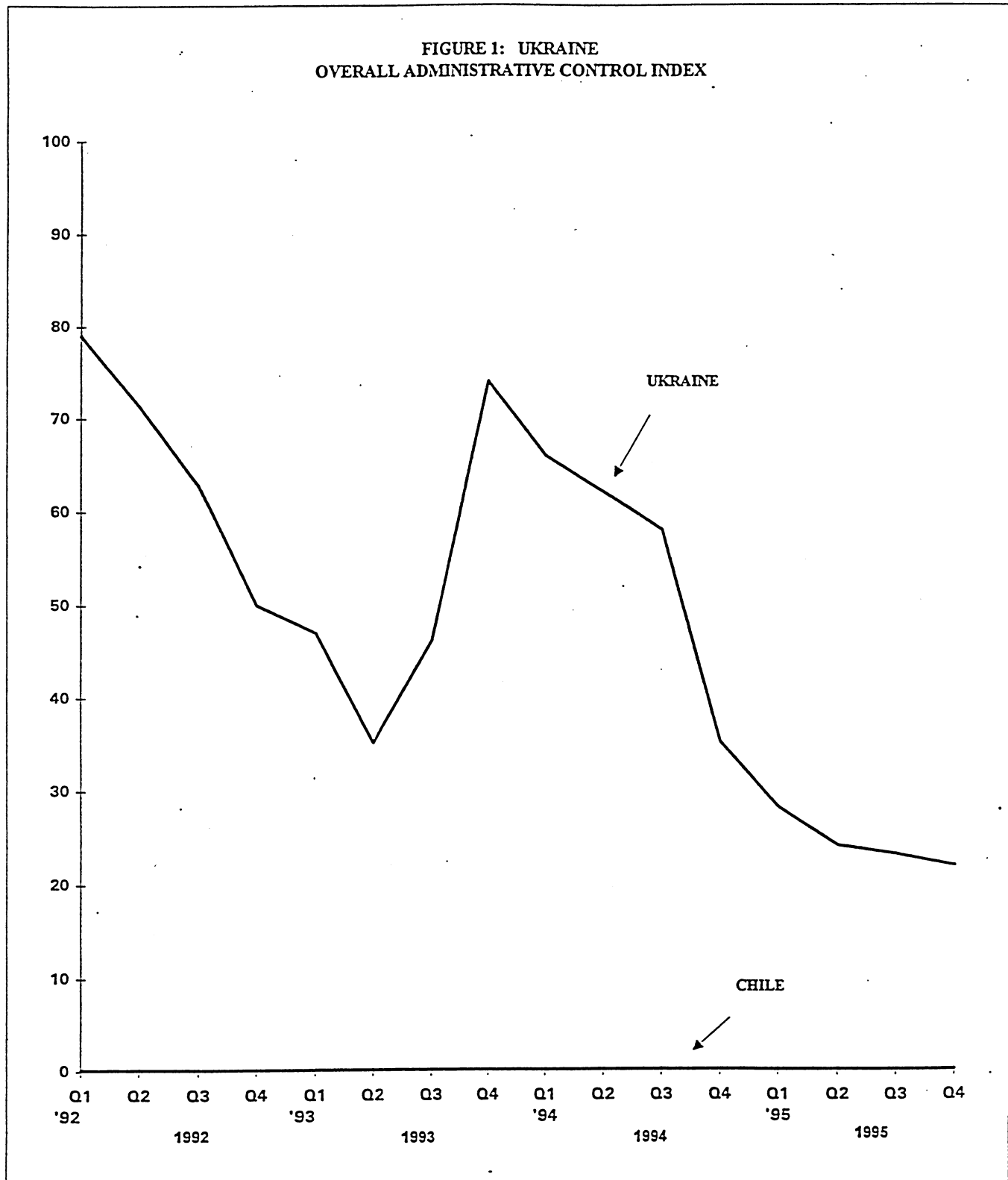


Table 1: Data for Overall Administrative Control Index for Ukraine

	Q1 '92	Q2 '92	Q3 '92	Q4 '92	Q1 '93	Q2 '93	Q3 '93	Q4 '93	Q1 '94	Q2 '94	Q3 '94	Q4 '94	Q1 '95	Q2 '95	Q3 '95	Q4 '95
1. EXCHANGE RATE DISTORTION INDEX	99.7	44.4	41.4	40.5	43.9	21.1	34.7	69.1	44.4	45.6	26.5	23.6	16.5	11.3	5.8	4.1
2. FOREX ALLOCATION DISTORTION INDEX	100.0	100.0	100.0	99.0	89.0	35.0	62.0	96.0	97.3	92.8	87.6	10.0	10.0	10.0	10.0	10.0
3. EXPORT RESTRICTION INDEX	68.1	79.8	87.9	74.1	75.8	75.8	75.4	92.0	61.5	45.5	43.2	68.1	57.4	51.3	51.3	51.3
4. DOMESTIC TRADE RESTRICTION INDEX	55.1	55.1	55.1	55.1	52.0	52.0	52.0	52.0	39.0	39.0	39.0	39.0	32.0	29.0	29.0	29.0
5. RETAIL PRICE CONTROLS	77.3	75.3	75.4	14.4	5.0	11.0	37.0	90.0	80.0	80.0	80.0	27.5	22.5	14.1	14.1	14.1
6. WHOLESALE PRICE CONTROLS	74.0	74.0	17.0	17.0	16.0	16.0	16.0	45.0	71.0	71.0	71.0	43.0	31.0	28.9	28.9	23.4
7. OVERALL ADMIN. CONTROL INDEX	79.0	71.4	62.8	50.0	47.0	35.2	46.2	74.0	65.5	62.3	57.9	35.2	28.2	24.1	23.2	22.0

Table 2

Unofficial Fee Structure to "Solve"
Official Administrative Impediments: Ukraine 1994

	Average Fee	% who report paying
One Export License/permit	\$ 217	96%
Export Contract Paper work/processing	\$ 189	96%
Expedite Border Crossing	\$ 194	90%
One Import License/Permit/Registration	\$ 108	93%
Import Paper work/processing per consignment	\$ 101	92%
Each visit/Clearance from fire/health inspector	\$ 40	72%
One phone line	\$ 550	95%
Expedite creation of new enterprise	\$ 186	64%
Each quarterly tax inspector visit	\$ 91	56%
Unofficial office lease in State Institution (monthly)	\$ 305	88%
Access to preferential credit in Krbn	\$ 200	86%
Access to preferential credit in US dollars	\$ 250	78%

the total amounts required.¹⁰ In 1994, small enterprises were spending on average about \$2,000 a year (in a range from \$800 to \$3,500) in unofficial payments to get around licensing and permit requirements; the average in Kyiv, for small to medium-sized enterprises (state and nonstate) exceeded \$12,000 a year. These figures comprised a significant percentage of costs. Such fees can be interpreted as a high implicit tax on the enterprise.¹¹ In addition, many firms pay "external facilitators" who act as intermediaries in resolving administrative difficulties. Smaller firms pay an average of about \$500 a year, while medium-sized firms pay more than \$1,300. Further, small to medium-sized firms throughout the country pay on average about \$1,200 in "protection" fees, in order to avoid being hit by organized and unorganized crime (although there is a high intercity and interfirm variance here).¹²

*The Main Bottlenecks to Operating Officially:
The Entrepreneur's Perspective*

When questioned in the various surveys conducted, entrepreneurs prominently and repeatedly mentioned as the main bottlenecks to operating officially the following: (1) the myriad of regulations in the foreign exchange and trade regimes; (2) high inflation; and (3) the high tax rates and volatile and often retroactive tax regulations. Interestingly, such highly restrictive bottlenecks, in the eyes of entrepreneurs, contrasted sharply with the entrepreneur and manager's relatively nonintrusive assessment of more conventional determinants, such as labor regulations, the skill and motivation of the labor force, enterprise registration, and infrastructure constraints. Not surprisingly, when questioned about the type of measures that would provide a strong incentive to return to the official economy, of paramount importance was the removal of administrative controls in the trade and foreign exchange regimes, as well as a stable and moderate tax structure and macroeconomic stability (that is, low inflation).¹³

From these microsurveys, the empirical link between the lack of liberalization and stabilization and the flight to the unofficial economy appears to be rather strong. In fact, in response to the question of timing and extent to which entrepreneurs would be prepared to switch toward operating officially, about 50 percent stated that they would come back from unofficialdom within two years of implementation of far-reaching economic liberalization and tax reform measures (30 percent would do so during the first year), and over 33 percent would come back thereafter. Only about 15 percent indicated that there would be no coming back to the official economy, some because they did not believe in the government's ability to carry out sustained liberalization reforms, and some because they were doing just fine where they were and intended to carry on regardless.¹⁴ Clearly, however, the bulk of the unofficial economy appears to be shallow and thus amenable to reversal by liberalizing economic policies.

*The Extent of the Unofficial Economy in Ukraine:
The Microevidence*

Given the background of the high cost of operating officially, it is not surprising to find that unofficial activities have mushroomed in Ukraine. Our initial survey work in 1992 on the fledgling nonstate enterprise sector suggested that the extent of unofficial activities was already about 25 percent of the total. Subsequent surveys in 1993, 1994, and 1995, while not perfectly comparable in terms of sample size and characteristics, indicate fairly stable estimates, ranging between 47 percent and 59 percent, for the nonstate sector.¹⁵ A rather partial sampling from the state sector suggests that the acknowledged extent of engagement in unofficial activities is lower than what the nonstate sector is prepared to acknowledge in surveys. But even using such limited estimates, the suggestion is that unofficial activities by the state sector grew very significantly, and by 1994 they were likely to approach or exceed one-third of overall activity by the state sector.

The microeconomic evidence at the individual worker level is also consistent with the firm-level evidence. Survey work performed in the summer of 1994 indicates that about 70 percent of an urban sampling of current or ex-state enterprise employees were engaged in unofficial activities. The sample participants as a whole derived more than one-half of their total income from these nonofficial activities; formal wage income represented less than one-half of their total income. For those working at lower-than-average official wages, the share of unofficial incomes was about two-thirds.¹⁶

To complement the microevidence presented here, and to provide for a comparative methodology for FSU and CEE countries, we turn now to a top-down approach to measuring the dynamics of the unofficial economy.

The Macro-electric Approach to Measurement of the Unofficial Economy and Its Application to Ukraine¹⁷

In most of the FSU and CEE states, official GDP figures measure the official economy. Almost by definition, and due to the slow (and very partial at best) adaptation of statistical methodology to more market-based systems, the unofficial economy has been minimally captured in official statistics. Official GDP figures can therefore be considered a good approximation of the measurement of official activities. But contrary to the prevalent use by analysts and decision makers, they cannot provide a reliable measure of overall economic activity in an economy. For a valid measurement of overall economic activity, a different indicator is needed.

To measure overall economic activity in an economy, electric-power consumption is regarded as the single best physical indicator of economic activity. Overall economic activity and electricity consumption have been empirically observed throughout the world to move in lockstep--with an electricity/GDP elasticity usually close to one.¹⁸ By having a proxy measurement for the overall economy and subtracting it from estimates of official GDP, an estimate of unofficial GDP can be derived. We briefly consider the special features of economies in transition in order to determine possible biases in utilizing electricity consumption as a proxy for overall GDP.

The main factors that could cause an upward bias in utilizing electricity consumption as a proxy for overall GDP are the following: (1) higher overhead and fixed electricity use per unit of output resulting from capacity underutilization during an economic downswing; (2) some technological redress due to the lack of basic maintenance; and (3) substitution of electricity for other energy sources (such as electrical versus gas heating).¹⁹ Conversely, the following factors would cause a downward (conservative) bias in utilizing electricity consumption as a proxy for overall GDP: (1) improved efficiency in electricity use, given the very low efficiency starting base and subsequent energy-saving reforms; (2) an increase in electricity prices; (3) a shift in output mix away from electricity-intensive industries (within existing enterprises and start-up

businesses); and (4) increased underreporting of electricity consumption.

On balance, the consumption-increasing effects of the upward-biasing factors may be more than fully offset by the downward-biasing factors. Consequently, for our first FSU/CEE scenario, we maintain an assumption of unitary elasticity, consistent with international estimates. Insofar as efficiency improvements and output mix changes have been particularly great, our estimates of the growth of the unofficial economy err in a conservative direction.²⁰

It is far from certain that the assumption of unitary elasticity will hold across the board for all countries in transition. Hence, a second, more conservative, elasticity scenario is also to be used in our approach. Some countries may have become even more energy-inefficient during the transition, and others may have become more energy-efficient. Differences in energy efficiency across countries in the region are mainly the result of differences in the adjustment path in energy prices. The available evidence suggests that the price elasticity of electricity consumption is low, particularly in the short term. Unlike other energy sources, electric power pervades all aspects of modern economic activity, and substitution is difficult in the short term (unless there is significant excess generating capacity, such as in Kyrgyzstan). Generally, estimates for the price elasticity of electricity consumption are in the 0.05 to 0.15 range. But while the price elasticity may be low, the efficiency implications of large price adjustments can still be significant.

Drawing on the work of D. Gray, C. Freund, and C. Wallich,²¹ a simple three-tiered classification of output elasticity of electricity consumption is put forward: (1) the "energy-efficient" economies, which comprise the CEE countries where energy price adjustments have been more significant and started earlier--assumed output elasticity of electricity consumption of 0.9 (in the upswing); (2) the "energy neutral" economies, comprising the Baltics, where price adjustment has taken place but started later--assumed unitary elasticity of electricity consumption; and (3) the "energy inefficient" economies, comprising the rest of the FSU states, with relatively little (and/or delayed) price adjustment (and with buildup of arrears)--assumed output elasticity of electricity consumption of 1.15 (in the upswing). We label this the conservative elasticity scenario, since it differentiates in such a way to assume increased inefficiency consumption in the FSU (and hence it potentially underestimates the growth of the unofficial economy). The third scenario--overall conservative--is built on the assumptions that: (1) every unit produced in the (non-Baltic) FSU countries became even more energy-inefficient (by 5 percent) during the transition; (2) the Baltic states remained efficiency-constant in their electric energy use; and (3) the CEE states became 5 percent more efficient in their use of electricity.²²

In summary, three scenarios are to be used empirically to derive estimates of change in overall GDP, as a sort of sensitivity analysis: (1) the unitary elasticity scenario; (2) the conservative elasticity scenario; and (3) the overall conservative scenario.²³

*An Empirical Application of the Macroelectric Methodology:
The Case of Ukraine*

On the basis of the subtraction of the two variables measuring overall and official GDP growth, respectively, we can arrive at an estimate of the changes in the unofficial economy. We collected data on both official GDP figures and electricity power consumption from 1989 to 1994 for each country from the World Bank and its FSU Statistical Unit. In addition, we conducted research to establish a baseline (for 1989) empirical estimate for the unofficial economy for FSU countries and a circa 1989 baseline for each CEE country in the sample. On the basis of the Berkeley-Duke research project on the USSR Second Economy conducted during the late 1980s, as well as the work of J. Braithwaite, estimates ranging roughly between 10 and 15 percent of total economic activity were arrived at.²⁴ Thus, for purposes of our calculations below, for Ukraine (and other FSU countries) we use the 1989 midpoint estimate share of unofficial activities of 12 percent.

The next step is to calculate the figures for the overall GDP proxy, based on overall electricity consumption. We also compute the indices for the official GDP. First, we perform the computations for the unitary elasticity scenario.

Table 3: Ukraine's Electricity Consumption (as proxy of Overall GDP)
and Official GDP--1989-94

	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Growth rate in Electricity Consumption		0.0%	-2.2%	-6.2%	-7.8%	-11.7%
Estimated growth rate in overall GDP		0.0%	-2.2%	-6.2%	-7.8%	-11.7%
Overall GDP Index (1989=100)	100.0	100.0	97.8	91.7	84.6	74.7
Official GDP Index (Index 1989=88)	88.0	84.5	73.2	60.4	51.4	38.8

On the basis of the figures in Table 3, as well as those resulting from the two other scenarios, we can calculate the unofficial economy share (in the overall economy) for all three scenarios (Table 4 and Figure 2) and for the conservative scenario.

Figure 2
Ukraine: Official and Unofficial GDP
Overall GDP Index=100 in 1989
Official GDP Index=88 in 1989

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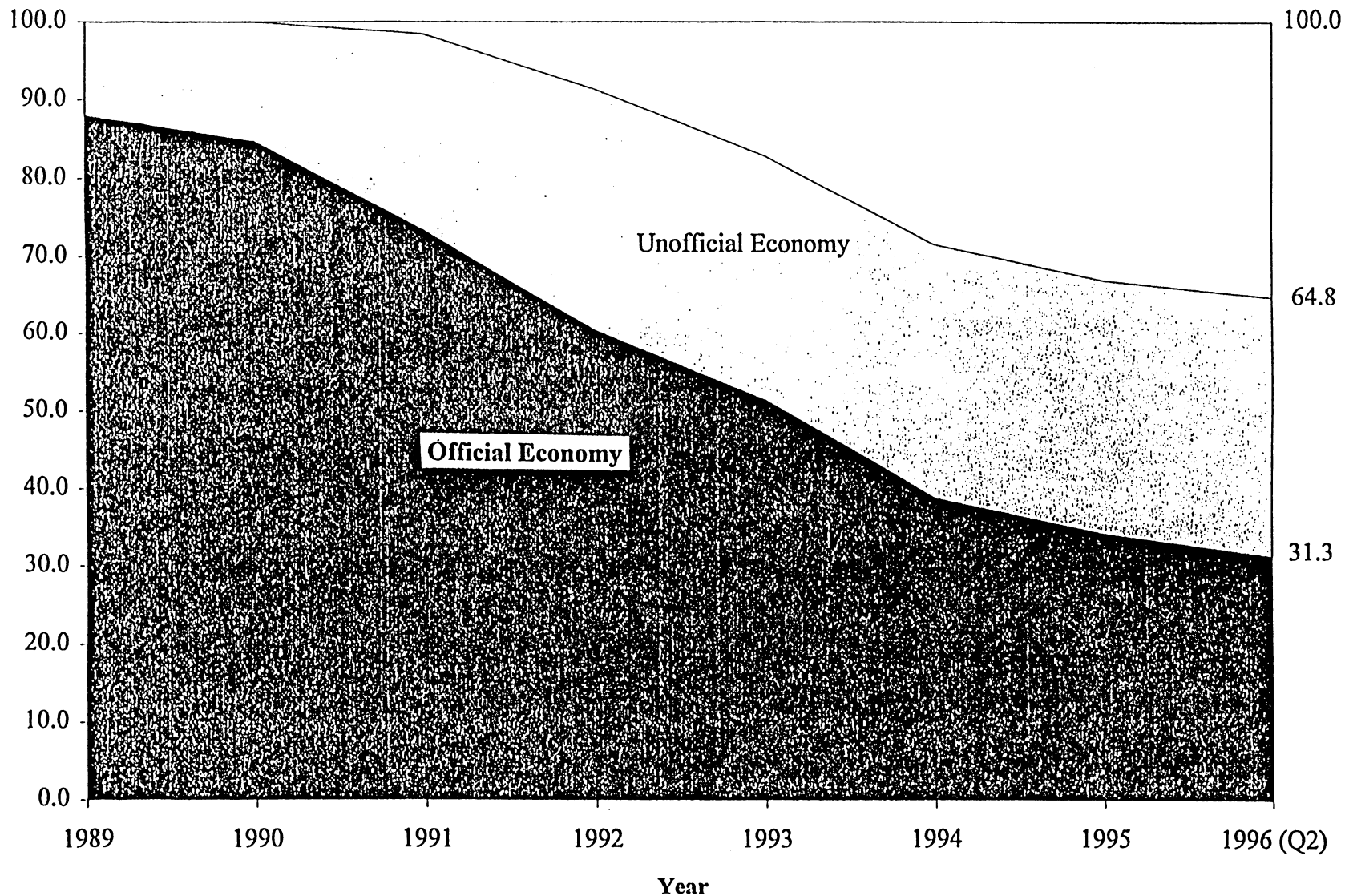


Table 4: UkraineUnofficial Economy Share: three scenarios.

	<u>Unofficial Economy Share</u>					
	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
<u>Unitary Elasticity Scenario</u>	12.0	16.2	25.8	34.7	39.7	48.5
<u>Conservative Elasticity Scenario</u>	12.0	16.3	25.6	33.8	38.0	45.7
<u>Overall Conservative Scenario</u>	12.0	14.9	23.5	31.6	35.9	44.3

All three scenarios point to similar trends, orders of magnitude, and observations on the evolution of the unofficial economy in Ukraine. In particular:

1. The unofficial economy in Ukraine has virtually tripled in size, while the official economy is less than one-half the size it was in 1989.
2. The decline in the overall economy since 1989 has been by almost 30 percent. While significant, this is still less than the decline derived from official statistics. Clearly, the decline in the official economy in Ukraine has been mitigated by the rapid growth in the unofficial economy during the period.
3. By 1994 the estimated unofficial share in the overall Ukraine economy exceeded 40 percent of the overall economy. These figures are roughly consistent with the microsurvey estimates reported in the previous section.
4. Varying the initial 1989 baseline estimate for the unofficial economy by using lower (say, 8 percent of overall activity) or higher (for instance, 16 percent) figures would only change the estimated share of the unofficial economy by 1994 minimally--since the lion's share of unofficial economy growth took place after 1990.

While far from providing definitive validation to the macroelectric approach, both the sensitivity analysis and the empirical consistency between the macroelectrical and the microsurvey approaches suggest that--with the appropriate caveats--it is worth expanding this methodology to other countries in the region. We turn to such comparative assessment.

Expanding the Macroelectric Methodology: Application to FSU and CEE States

The number of countries included in the FSU and CEE sample totals sixteen, comprising eleven from the FSU (Ukraine included) and five in CEE. Excluded are those countries for which data was partially unavailable, and/or regarded by the country desk as particularly unreliable (e.g. Armenia), or where excess electricity capacity and hence substitution toward electricity is known

to have taken place (Kyrgyzstan). For all FSU countries the same baseline estimate share of the unofficial economy of 12 percent was utilized; for CEE countries we relied on country-specific microestimates available from independent sources.²⁵

Main Results

1. The Significant Size of the Unofficial Economy in 1994 in Most of the Region

The 1994 share of the unofficial economy for all sixteen countries for the three electricity-efficiency scenarios is presented in Figure A4 of the Appendix. The differences among the three scenarios for each country, while present, are not great when compared with intercountry variance. On average, the unofficial economy share for CEE is about 21 to 24 percent (depending on the scenario), while for the FSU the average is 36 to 39 percent, of overall GDP.

2. The Relative Growth in the Unofficial Economy

Taking the conservative elasticity scenario as our main case, changes in the unofficial economy share for all sixteen countries are summarized in Figure 3, which depicts the respective shares of the unofficial economy in 1989 and in 1994. Large overall growth in the importance of the unofficial economy during the period throughout the region is clearly shown. The overall share for the combined unweighted sample has more than doubled, from about 15 percent to almost 33 percent of overall GDP. The unofficial economy in the region also grew significantly during the period (by over 50 percent) in absolute terms.

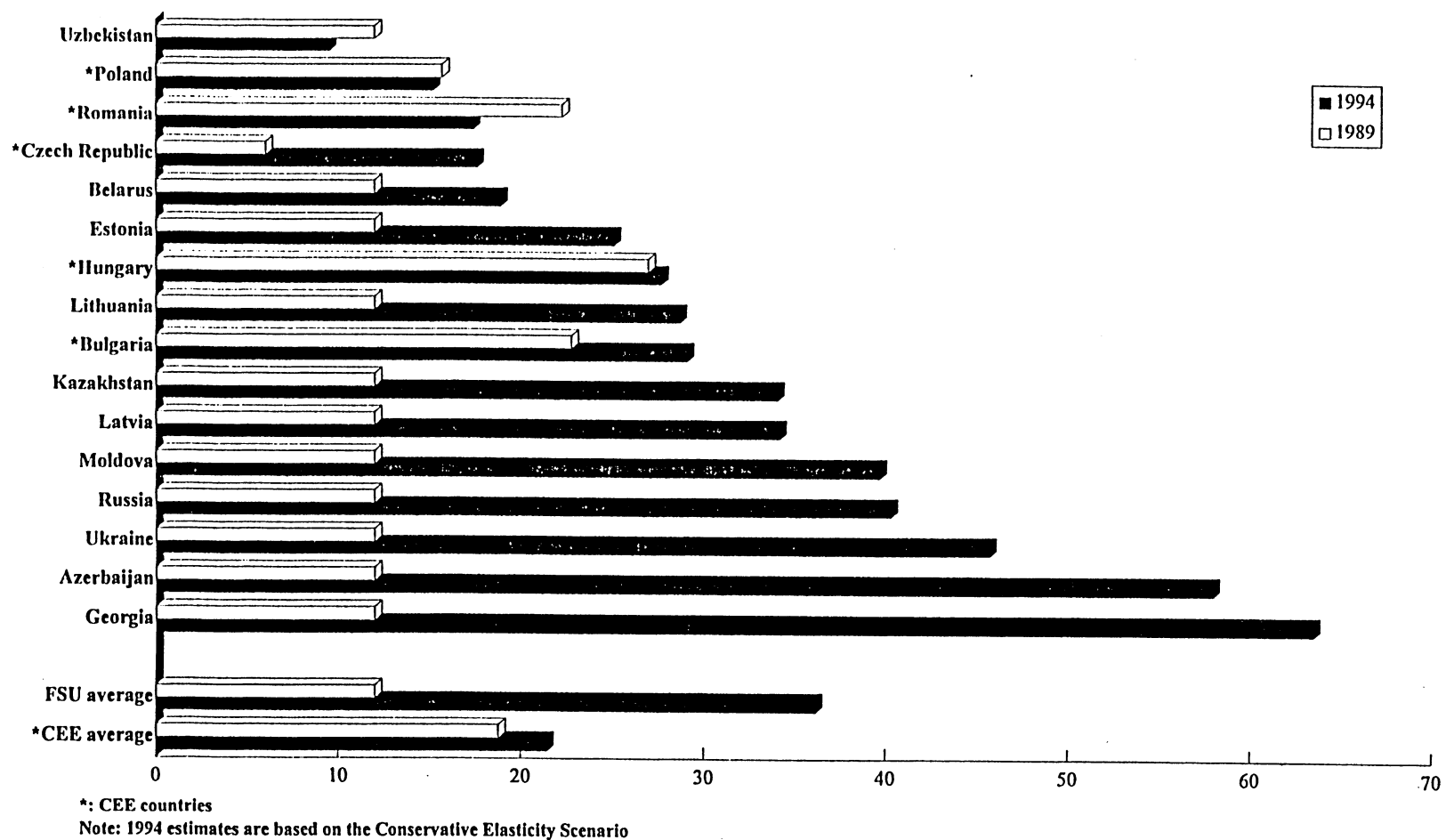
3. High Variance in the Evolution of the Unofficial Economy

The high variance in the evolution and end-shares of the unofficial economy is as striking as the overall increase over the period. The patterns vary significantly between CEE and FSU countries, as well as within each regional group. As Figure 4 shows, in the late 1980s CEE countries appeared to have had a substantially larger share of activities in the unofficial economy than did the FSU (approximately 21 percent versus 12 percent). Yet the early 1990s saw a very sharp increase in unofficial activities in the FSU (with its share tripling to 36 percent), while the overall share in the CEE sample rose only slightly. Within the FSU the 1994 estimates for the unofficial share vary from merely 10 percent in Uzbekistan to over 50 percent in Azerbaijan and Georgia (and 46 percent in Ukraine). Within the five CEE sample countries the estimates range from 14 percent for the Czech Republic to 28 percent in Bulgaria.

4. The Unofficial Economy as a Mitigator in the Drop in Official GDP

Countries that experienced a particularly large decline in official GDP were able to mitigate such a drop through rapid growth in the unofficial economy. The result was a significantly lower decline in overall GDP than in official output in general; the mitigating effect was particularly marked in countries with large declines in official GDP.

Figure 3
Share of the Unofficial Economy in CEE and FSU Countries, 1989 and 1994



The relationship between changes in official and overall GDP for all sixteen countries is depicted in Figure 5. Further, all eighty data points from the pooled sample are depicted in Figure 5. It is clear from the primary data and from the OLS regression that as the decline in official GDP became very sizable, only slightly over half of the official GDP drop was translated into a decline in the overall economy. The other half of the official GDP decline was absorbed by the growing unofficial sector.

The relationship between the decline of the official economy and the growth in the share of the unofficial economy is depicted in Figures 6. A linear fit of the data (via OLS regression) suggests that for every 10 percent cumulative decline in official GDP, the share of the unofficial economy in the overall economy grew by almost four percentage points (figure A5 in the Appendix).

Are Country-Specific Results Broadly Consistent with Hypothesized Priors?

The multiplicity of factors that were hypothesized to be important in the evolution of the unofficial economy are not subject to a rigorous test of significance of the model's determinants in this paper (that will be the subject of future research). However, the preliminary empirical results appear to be broadly consistent with the suggested determinants of the unofficial economy dynamics.

At one end of the spectrum, except for not being at war, Ukraine combines elements conducive to maximum growth in the share of the unofficial economy through 1994: low initial unofficial economy share; low initial role of commerce and services in the economy; high degree of political liberalization; lack of economic liberalization and of macrostability; and undeveloped market institutions. In fact, Ukraine is found to have the highest unofficial economy share among the fourteen CEE and FSU sample countries not at war. Moldova and Russia, with somewhat better performance regarding economic liberalization and stabilization but otherwise similar in other respects, exhibit unofficial economy shares of 40 percent, not far behind Ukraine. Not surprisingly, however, the largest unofficial economy shares (exceeding 50 percent) are found in Georgia and Azerbaijan, countries at war.

At the other empirical end of the spectrum we find Uzbekistan, Romania, the Czech Republic, and Poland, with shares of 10 to 18 percent. For different reasons, there seems to be a convergence in the relatively low unofficial economy shares in Uzbekistan and Romania, on the one hand, and Poland and the Czech Republic, on the other. Romania and (particularly) Uzbekistan have not had much economic liberalization, and both have exhibited even less political liberalization, maintaining tough enforcement mechanisms. By sharp contrast, the Czech Republic and Poland have had a high degree of political liberalization from 1990 onward, and they have liberalized their economies very rapidly, stabilized their macroeconomies, and developed market institutions and enforcement mechanisms faster than other countries in the region.²⁶ Plausibly as well, the Baltics fall into an intermediate category.

While a comparison of the *current share* of the unofficial economy suggests a similarity between Uzbekistan and some CEE countries, this convergence is not present when reviewing over-time *trends* in the unofficial economy throughout the transition. One characteristic of the evolution of the unofficial economies in the CEE countries is that the share of the unofficial economy increased initially and then underwent a reversal. The year of the turnaround varies among countries (e.g., after 1991 in Poland versus after 1993 in Romania). Overall there seems to be an association between economic liberalization in CEE countries and a tapering off in the growth, and subsequent decline, of the unofficial economy share.

Implications

Summary of Main Findings

This paper is a first attempt at providing a comparative perspective on the unofficial economy in the FSU and CEE region. Yet by assessing its evolution and size we also go further: we challenge the conventional view of what is important in these economies and what are their dynamics. A simple analytical framework is presented in which we emphasize the main characteristics of unofficial activities in the region to be the following (in contrast with conventional notions of informal sector studies in other parts of the world): (1) coexistence of state and nonstate activities and enterprises, where public institutions and state enterprises play an integral role; (2) relative scale and visibility (often similar to official activities); (3) the importance of the economic-regulatory nexus in motivating unofficial activities; (4) a continuum in the official-unofficial activity spectrum (often within the same enterprise); (5) access to state subsidies and social security; and (6) shallowness.

The main methodology used for comparing empirically the evolution of the unofficial economy in the countries in the region is based on the measurement of the difference between electricity consumption growth (as a proxy for overall GDP growth), on the one hand, and official GDP growth, on the other. Taking the empirical case of Ukraine first, we reviewed the available microevidence and surveys on the unofficial economy and then independently applied the macroelectric methodology to the country. The results suggested broad consistency between the micro- and macroelectrical approaches. We then applied the macroelectric methodology to other countries in the region in order to establish a comparative perspective. The main empirical results from this comparative methodology are summarized on pages 15 through 18.

Figure 4
Evolution of Official vs. Overall GDP, 1989-1994 averages

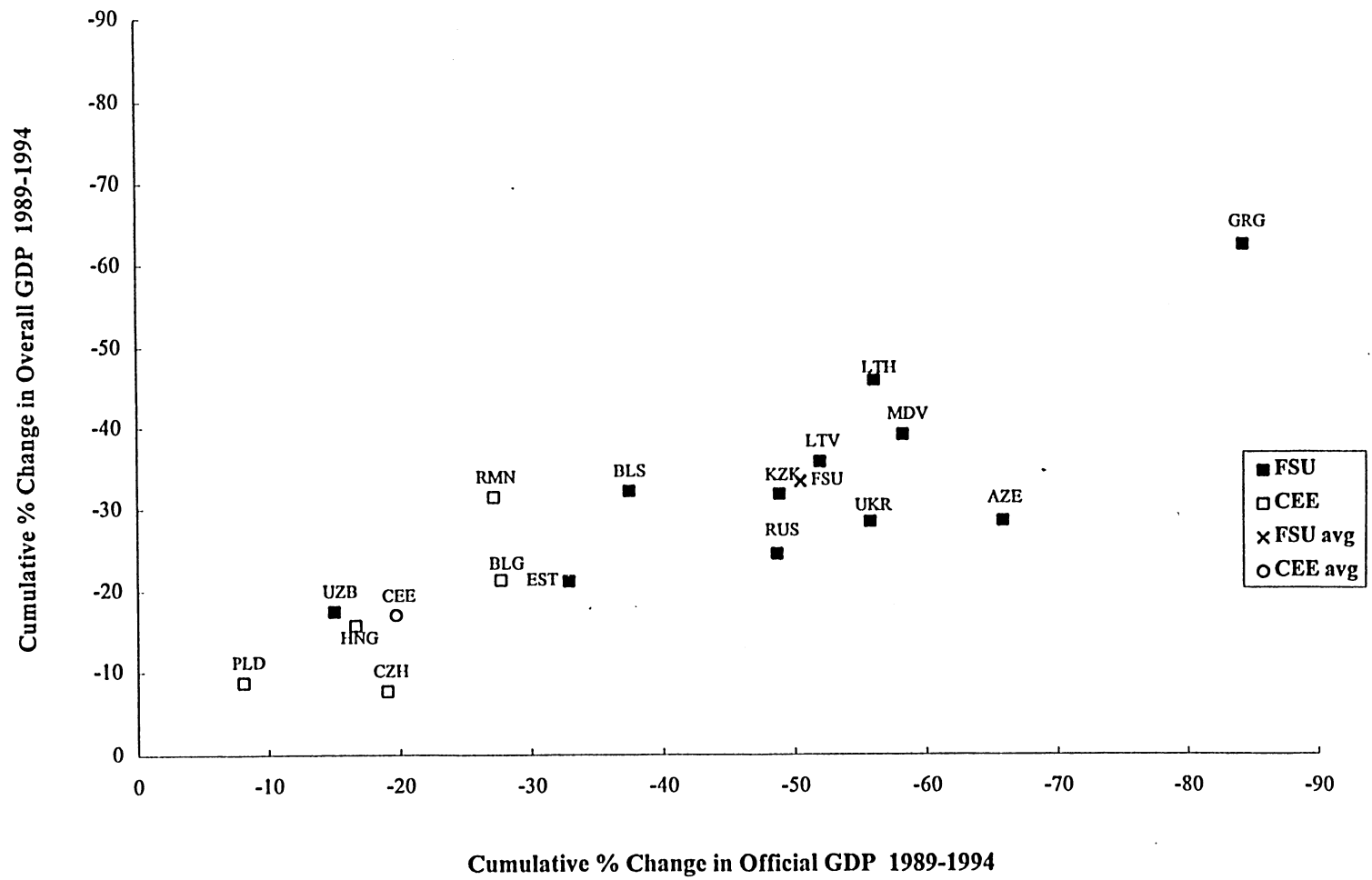


Figure 5
Evolution of Overall vs. Official GDP,
Yearly Changes, 1989-1994, 16 Countries, Pooled Sample

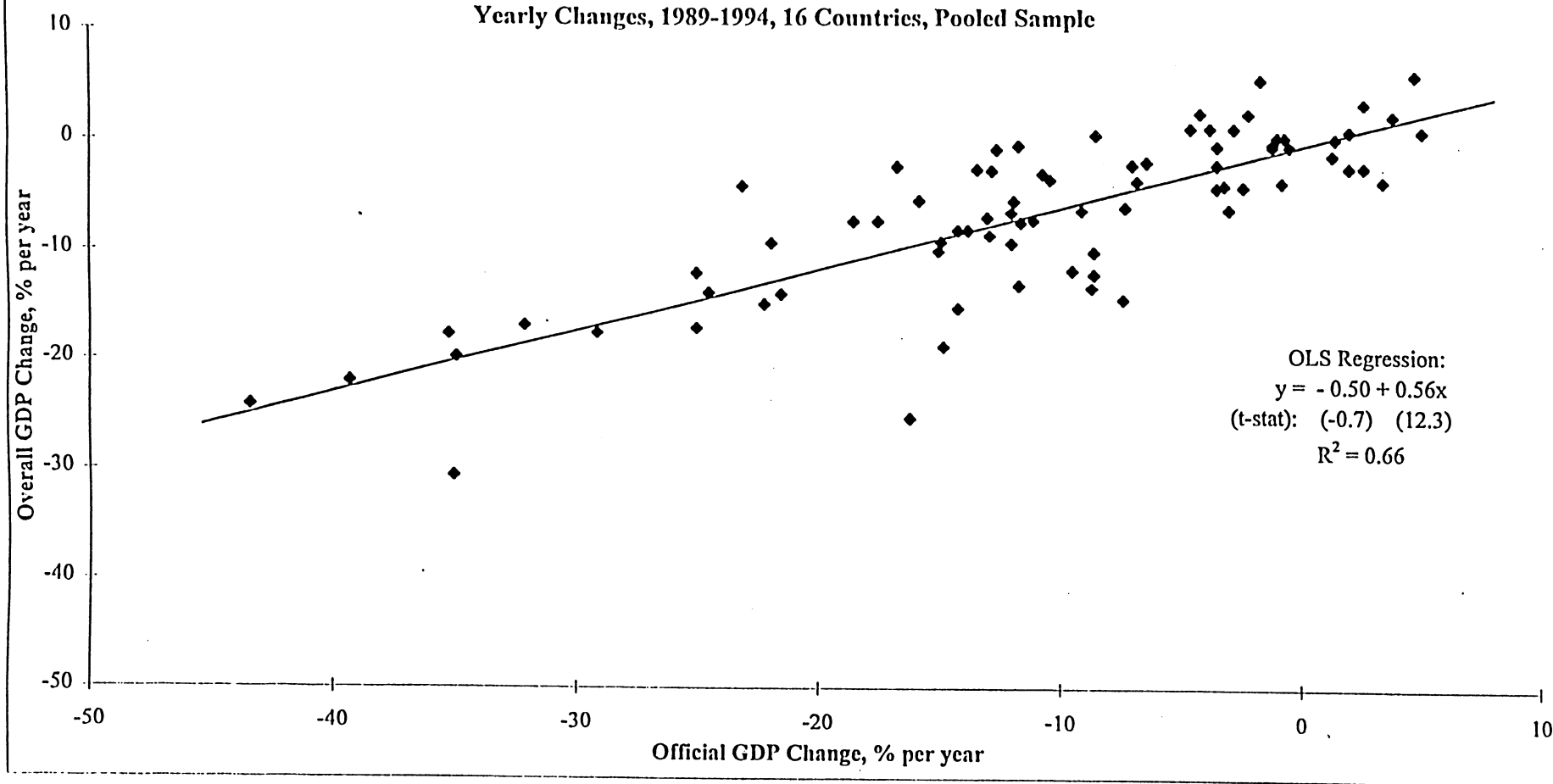
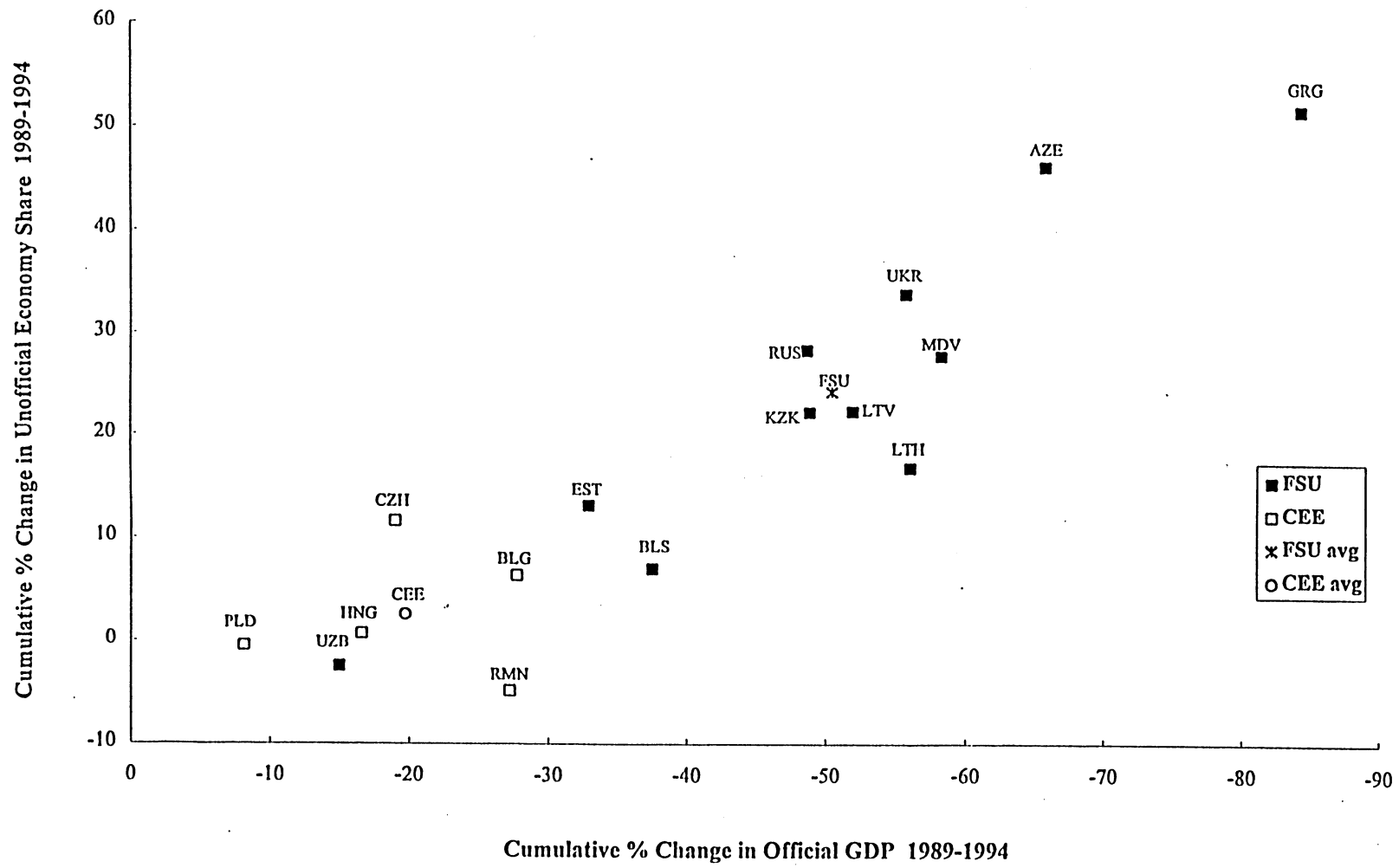


Figure 6
 Official GDP Decline and the Emergence of the Unofficial Economy, 1989-1994 averages



Nature of the Data and Implications for Measurement

By definition, any measurement of the unofficial economy is subject to substantial margins of error. Further, errors stemming from the methodological assumptions made in our approach ought not be ruled out. Hence, it is important to not leave the reader with any false sense of precision concerning the numbers. Instead of accurate point estimates of unofficial economy, figures should be regarded as orders of magnitude, and each estimated share should be viewed as falling within a range. It should be noted that we have tried to maintain a conservative approach to the estimates. And that support for the methodology and empirical estimates is found from independent microsurvey data. Further, sensitivity analysis regarding reasonable ranges for the assumed initial unofficial economy share and for the elasticity of electricity consumption suggests that the margins of error are unlikely to be large enough to question the overall orders of magnitude and broad trends reported here. The sheer orders of magnitude and variance in these unofficial economy estimates point to the need for furthering a country-specific understanding of the unofficial economies in the region.²⁷

Implications for Policy

Incorporating more fully the evolution of the unofficial economy into our understanding of the dynamics of the overall economy leads to some differences in approach to policy design and implementation. The details of optimal policy making would be expected to vary substantially in a setting where the unofficial economy is either ignored or rather small (or where it remains constant over time). We review these policy implications below.

1. Unofficial Economy: Curse or Blessing in Disguise?

The first question that needs to be addressed by the policy maker is what the official approach toward the unofficial economy should be. Should it be one of further encouraging growth, one of benign neglect, or one of active discouragement?

From a national welfare standpoint, the unofficial economy has had a positive side, particularly during the transition period. It has helped keep economies afloat, since the costs of efficient production in the official economy have often increased. It has also debunked the myths of lack of entrepreneurship and lack of readiness for the market by FSU citizens. Furthermore, it has provided valuable market experience to such budding entrepreneurs.

However, the emergence and growth of a large unofficial economy also poses serious concerns, which on balance dominate. First, the effective management of the economy by the state is undermined. The integrity of the tax system and of the foreign exchange base that any state needs to manage its economy is eroded by the rapid flight from the official to the unofficial

economy. Macroeconomic stability is thus harder to attain and sustain. Further, the legitimacy of the overall legal and regulatory system is challenged by bankers, entrepreneurs, and households. This can take years to reverse.

Second, however large, the unofficial economy is mostly a survival economy, where trading, services, stripping of state assets (and/or of their income flows), and focus on short-term turnover dominate the longer-term view. Large-scale and sophisticated investments, which are crucial to the longer-term growth prospects of the country, are virtually absent. And third, when compared with an officially liberalized official economy, the functioning of the unofficial economy is associated with significant efficiency losses. This is because of the nonproductive payments and time wasted by the briber and the bribed in getting around licenses and taxes, as well as the decapitalization of assets.

Since the negatives prevail when assessing the pros and cons of the unofficial economy, governments ought to design sensible strategies that do not stem the growth of the official economy, and instead attract unofficial activities back to the official economy. An official economy that increasingly incorporates unofficial activities could improve macroeconomic management (through an improved tax base and official exports) and increase investment and productivity.

2. Official Market Liberalization and Deregulation as a Main Pillar in Attracting the Unofficial Economy

Mustering the usual arguments about allocative efficiency, technological advance, and competitiveness, conventional approaches to reforming economies emphasize the importance of openness and market liberalization. In countries with a sizable unofficial economy, the rationale for market liberalization is further strengthened and expanded. Liberalization of official markets reduces the costs of undertaking official business, hence providing a strong incentive for business to operate officially.

In fact, the argument favoring radical (versus gradual and/or partial) economic liberalization is even stronger in settings with a large unofficial economy. This is because almost every activity faces the choice of operating officially or unofficially. The choice is made on the basis of cost-benefit considerations. An activity will not operate officially unless its net costs are lower than those of operating unofficially. Hence, the official liberalization effort has to be sufficiently bold (and credible) so as to lower expected official costs of doing business to a level below those of operating unofficially. Small liberalizing steps will affect only the marginal unofficial activity and, in addition, will generally undermine the credibility of the reforms in the eyes of economic agents. Consequently, partial or gradual liberalization is not an effective policy-making approach, particularly where there is a large unofficial economy.²⁸

The most visible (and aggregate) economic liberalization measures, such as removal of price ceilings and export quotas, while necessary, are insufficient in themselves to sufficiently

lower the cost of operating unofficially. Deregulation, at both the micro and regional levels, is also required in order to address issues of harassment and the costs of discretionary enforcement of old regulations and laws (licenses, health and fire inspections, etc.). Thus, the concept of full economic liberalization should include deregulation as an integral component.

3. Macroeconomic Stability

The Ukrainian entrepreneurs' survey responses point to macroeconomic stability (and very low inflation) as one priority in ensuring that they operate more effectively, and officially. Lax budgetary and monetary policies, and the resulting high inflation, raise the expected benefits of unofficial activities and reduce their perceived risks and costs. Furthermore, they increase the costs of operating officially. Budgetary and credit handouts breed vested interests, which further fuel and perpetuate unofficial income flows, domestically and abroad. For instance, it appears evident that in Russia the episodes of large expansion of credit in 1992-93, which were channeled by the central bank into many large state enterprises, were also associated with a very significant (multibillion dollar) capital flight abroad.

Lax monetary policies and high inflation cloud financial accounting, making it easier to distort official reports. At the same time, they reduce the probability of getting caught (or of proving illegal behavior). Since domestic currency is increasingly perceived as a poor store of value and an inadequate means of financial transaction, there is strong inducement to operate in foreign currency. This is most often associated with unofficial activity, and with capital flight. More generally, lax government finances are increasingly perceived by the public as a sign of decay in the social fabric and as evidence of the state's inability to manage the official economy. This further provides a self-justification for unofficial activity behavior.

The arguments favoring rapid attainment of macroeconomic stability are therefore strengthened additionally when considering the behavior of economic agents in countries with official and unofficial economies. A sufficiently large drop in the relative costs and increase in the expected benefits of operating officially are required for the crossover process to be reversed. Hence, macroeconomic stabilization measures may need to be particularly bold, credible, and sustainable.

We should keep in mind, too, that macroeconomic stabilization is a key part of the overall economic virtuous cycle. A program of radical macroeconomic stabilization is not only an important input in reclaiming the unofficial economy; attracting the unofficial economy back to officialdom is in itself an input to macroeconomic stability.

4. Taxation: Reinterpreting and Redesigning

In an economy with a large unofficial share, the issues of taxation may need to be addressed differently. Reliance on tax to GDP ratios is widespread when assessing the tax burden in an economy. However, without exception, the key measurement used is official GDP

estimates. As a result, tax to GDP ratios often appear to be rather high. And this frequently results in commendations for affective tax collection from some quarters (macrofundamentalists) and, conversely, criticisms for the excessively large and confiscatory role of the state from others ("PSD" [private sector development] and laissez-faire supporters). Where the role of the unofficial economy is large, both sides may be missing the point. This is because in reality the overall tax burden in the economy may not be large, and, furthermore, one important segment of the economy may have completely "liberalized itself."

Let us consider the case of Ukraine. Official documents indicate that tax ratios in GDP increased from 34.2 percent in 1991 to 38.6 percent in 1994. However, if we incorporate our estimates of the unofficial economy into a measure of overall GDP instead, the recalculated tax in GDP ratios would indicate a decline from 25.4 percent in 1991 to 21.0 percent in 1994.²⁹ In other words, contrary to calculations from official statistics, the overall (explicit) tax burden in Ukraine is not very high. Instead, it has a skewed distribution: it is extremely high on official activities not enjoying tax exemptions and nonexistent on unofficial activities. From the early 1990s onward, because of the increasing burden on official activities, many crossed to the unofficial economy, and a vicious cycle ensued, as higher taxes were then imposed to try to compensate for lower revenues. This in turn further eroded the taxable base as more activities became unofficial. This is one example of an interpretation (akin to an adverse selection model) that is made possible when integrating the unofficial economy into the study of the overall economy.

The importance of this approach for policy advice thus becomes self-evident. In many countries, instead of attempting to generate further taxes via higher tax rates, the potential of increasing the tax *base* should be exploited much further--especially when the role of the unofficial economy is relatively significant. Due to the relative ease with which economic agents can cross over to the unofficial economy, a number of countries in the region appear, in fact, to fall into the negative sloping segment of the Laffer curve--that is, higher tax rates may well be resulting in lower tax revenues. Conversely, more moderate and stable taxes may result in a significant increase in the tax base.³⁰

There are fixed costs in crossing over from operating unofficially to operating officially. In addition to lowering the costs of operating in the official economy (through a lower tax burden and elimination of administrative impediments), it is also important to provide incentives lowering the fixed costs of crossing over. A substantial perceived fixed cost by unofficial activities contemplating crossover is that of being taxed or otherwise penalized for past underpayments when exposing themselves to the official economy. To reduce such fixed costs, policy makers may consider an amnesty for past taxes and related fees up to a certain date tied to the institution of the new policies.³¹

Finally, in assessing the optimal tax rates themselves, due consideration needs to be given to the size and dynamics of the unofficial economy. The unofficial economy is being implicitly taxed, as we have reported--even if the revenues do not accrue to the budget. Particularly where

the unofficial economy is large, the official tax rates need to be designed in such a way that the overall burden on enterprises is lowered below that of operating unofficially. As compared with economies where the unofficial economy is small (and/or very costly), the optimal tax rates are thus likely to be lower where the unofficial economy share is relatively large.

5. Foreign Exchange Management: Full Unification or Escape?

A sizable unofficial economy would encompass a large share of unofficial foreign exchange transactions and holdings, both domestically and abroad. This in turn impairs macroeconomic and balance-of-payment management. Attempts by a government to clamp down on these activities through prohibition of foreign exchange transactions or imposition of high surrender requirements (at less than the street-market rate) would only exacerbate the loss of state control over foreign exchange management. This is because the perceived cost of doing business officially increases by more than the cost of doing business unofficially when governments impose such administrative sanctions. The official (implicit) tax rate on foreign exchange transactions from a dual or multiple exchange rate drives the entrepreneur to choose nonofficial channels. Full unification of the exchange rate therefore becomes the inescapable policy implication in order to stem the flow to unofficial activities (and capital flight) and to attract unofficial activities back to officialdom.

These benefits of unification of the exchange rate regime are not a mere theoretical construct. Data from Ukraine's official auction for foreign exchange, already operating for almost three years, provides compelling evidence. During periods when the official exchange rate was less than 70 percent of the (street) market rate, the (nongovernment) foreign exchange supply to the auction was about \$50 million per quarter. Conversely, during times when the official rate has exceeded 80 percent of the street rate, supply to the official auction has averaged about \$550 million per quarter, as shown in Figure A3 in the Annex. In other words, the annualized difference in supply between a quasi-unified and nonunified exchange rate auction is about \$2.2 billion.

6. Privatization: On the Fallacy of Equity Versus Speed

From early on in the FSU transition there has been a debate as to the optimal speed, scope, and type of privatization of the enterprise sector. Among other points debated, many have argued for gradualism (and partiality) on the basis of equity and implementation efficiency, so as to have an optimal methodology and institutional mechanisms in place.

In the context of our framework of analysis, what this debate misses are the dynamics of the unofficial economy. The longer the delay in official privatization, the more state assets de facto cease to be in state hands--or at the very least, many cease to provide the state with income flows. Decapitalization, asset stripping, and unofficial appropriation of income flows become widespread as the fine-tuning of the optimal privatization methodology goes on. Yet a spontaneous privatization of assets and increased "privatized" income flows benefit only a

relatively few. Thus, the distribution of wealth and income becomes particularly skewed while awaiting implementation of an official mass privatization program.

Furthermore, the methodology of privatization that would have been optimal early on becomes less effective as time passes, since the growing vested interests of powerful groups of managers and other de facto owners of state assets increasingly resist a more participatory distribution of assets. For instance, share allocation rules need to be increasingly skewed in order to bribe interest groups into official privatization. Resistance from some local authorities also mounts, as the fruits of unofficialdom become institutionalized.

Hence, particularly when viewed from an overall economy framework (including the unofficial segment), speed in the official privatization program, for small and large enterprises, ought to be paramount. Neither equity nor sophisticated methodological and institutional considerations provide strong arguments for a slower or more partial privatization path in the FSU and CEE states.

7. Social Protection and Labor Market Dynamics: Who Is Not Coping and How Best to Target Them?

In settings with a large unofficial economy, conventional notions of formal wage incomes and employment being reliable indicators of an ability to cope do not hold. For instance, where official wages represent only about one-half or less of total income, as in Ukraine, one finds a sizable group of officially employed workers barely eking out a subsistence living, while many individuals officially not working and not receiving unemployment assistance are coping adequately. Conventional Western dichotomies between the formally employed and the unemployed are less helpful in the FSU. Instead, there is an employment spectrum continuum between full (and exclusive), formal employment, on one extreme, and wholly occupied in unofficial activities, on the other. The officially unemployed, or the "hidden" (formally) unemployed, are most often (at least) partially engaged in unofficial occupations.³²

Empirical research in Ukraine suggests that a better (that is, other than formal income) proxy for the ability of individuals or households to cope is access to human and physical assets such as: (1) particular skills and educational attainment; (2) real estate property; (3) livestock; (4) a car; (5) a rental apartment or garage space; (6) business trips abroad; and (7) more well-off relatives.³³ For instance, many female-headed households, and generally households with multiple dependents (particularly children), appear to lack such access and thus fall in the "noncoping" category--even though many of the women are formally employed. Access to certain assets is highly correlated with total (official and unofficial) income; however, a formal job is only highly correlated with formal wage (rather partial) income. Hence, recognizing the flexible continuum in labor market dynamics that mirrors the official-unofficial enterprise continuum leads to different policy advice.

Given the imperfection of conventional means-testing indicators, deepening our understanding of the main attributes of noncopers is paramount to improving the targeting of those in need--while keeping social outlays from the state consistent with macroeconomic stability. Such improved understanding can only come by having a framework of analysis that fully integrates unofficial activities into the very varied spectrum of income-generating opportunities in the FSU and much of CEE.

8. Peering into the Future: Projection Models and Toward an Integrated Framework of Analysis

Projection models for the path of official GDP would be expected to give different results in a country with a sizable unofficial economy when compared with a country where virtually all activities are official. This is because of the large universe of potential crossovers to the official economy if the right policy mix is put in place. Hence, what conventionally may appear as overambitious official projections for the expected supply response should not necessarily be unrealistic in countries that liberalize their economies and reform their tax regimes.³⁴

Conversely, countries that delay or backtrack in their reforms may see larger declines in GDP than assumed when the role of the unofficial economy is ignored. At the same time, in nonreforming countries that have already experienced a rapid increase in the importance of the unofficial economy, caution is needed when extrapolating from our results as a means of projecting the continuing growth of the unofficial economy. This is largely because of the natural upper limit in the number of activities that can become unofficial. Once the bulk of activities have crossed, the remaining number of potential future crossovers dwindles.³⁵

We conclude by suggesting that both the framework of analysis and the evidence presented in this paper, particularly in the case of the FSU states, point to the need for a fuller and more rigorous integration of the unofficial economy into a comprehensive framework of analysis. Such an integration should also be undertaken vis-à-vis both the heretofore conventional economywide and forecasting models and with regard to policy advice. Regarding policy advice, it is clear that stabilization, liberalization, and privatization need to be even bolder than assumed.

More generally, further empirical work is needed on this subject. This paper is an initial contribution to the topic, and while the advantages of having a common methodology are to be emphasized, the precision of the estimates ought not to be exaggerated. Further research should deal with this issue in more depth and test econometrically the determinants of growth in the unofficial economy.

In recognizing the existence of the unofficial economy it is evident that sometimes a statesman is ahead of the analysts in providing a vision of what is important. Ukraine's President Leonid Kuchma, in his October 1994 address to parliament entitled "The Road of Economic Reform," broke radically from the past shortly after coming to power, as he grasped the

implications of Ukraine's large unofficial economy: "... In Ukraine's economy today, the situation has developed to the point where government's regulation weakens the government's real influence on the economy. The balance between the legitimate and unofficial economies is definitely tipped in favor of the latter. The conclusion is self-evident; retaining government regulation has become ineffective. The only alternative is the acceleration of economic reform."³⁶

Notes

1. Throughout this paper, CEE will denote Central and Eastern Europe and FSU--the states of the former Soviet Union.
2. The Berkeley-Duke studies of the "second economy" during the Soviet era are an exception. More recently, the qualitative importance of the unofficial economy in Russia is acknowledged in James Leitzel's Russian Economic Reform (London: Routledge Press, 1995).
3. Daniel Kaufmann, "Diminishing Returns to Administrative Controls and the Emergence of the Unofficial Economy," Economic Policy, 19, December 1994; idem, "Market Liberalization by Stealth: Curse or Blessing in Disguise?" in Trade in the New Independent States, Constantine Michalopoulos and David G. Tarr, eds., Washington, DC, World Bank/UNDP (United Nations Development Programme), 1994; Simon Johnson, Daniel Kaufmann, and Oleg Ustenko, "Winners, Losers and Survival Strategies in Ukraine," mimeo, The World Bank and Duke University, October 1995.
4. Istvan Dobozi and Gerhard Pohl, "Real Output Decline in Transition Economies--Forget GDP, Try Power Consumption Data," Transition Newsletter, World Bank, vol. 6, January-February 1995.
5. It is well known that many enterprises keep three sets of books: one for the enterprise's own management, one for potentially interested investors, and one for tax officials.
6. A rigorous formalization of this conceptual framework will be presented in a forthcoming paper.
7. This factor (type of activity) needs to be interpreted flexibly. In the FSU and CEE states almost any type of activity can operate unofficially. The difference is one of probability and the extent of doing so along a continuum.
8. Except for the fact that in the latter group there has been significant political liberalization. The relative sophistication and efficacy of this group's market and legal institutions could be expected, however, to neutralize potential bureaucratic discretion in applying regulations (and negotiating "rules of the game" with entrepreneurs).
9. See Kaufmann, "Diminishing Returns to Administrative Controls"; and Johnson, Kaufmann, and Ustenko, "Winner, Losers and Survival Strategies".
10. Ibid.
11. These fees provide a basic indication to what can be the higher--and at times prohibitively so--cost of doing business officially. Nevertheless, enterprises still "chose" to pay high unofficial fees rather than to stay in the official economy.

12. Some of these "protection" fees also need to be paid by firms operating officially.
13. See Kaufmann, et al., "The Evolution of Ukraine's Administrative Controls," forthcoming.
14. The unwillingness (or delay) to come back to the official economy can be conceptualized in terms akin to a hysteresis effect, in which there is an option value of waiting, while uncertainty is (partly) being resolved (e.g., further information about costs and benefits in each "state" is being gathered, etc.). See Avinash K. Dixit and Robert S. Pindyk, Investment Under Uncertainty (Princeton, NJ: Princeton University Press, 1994).
15. Kaufmann, et al., "The Evolution of Ukraine's Administrative Controls," forthcoming.
16. Johnson, Kaufmann, and Ustenko, "Winners, Losers and Survival Strategies."
17. This section briefly describes the methodology. For a fuller explanation, please contact the authors for the longer version of this paper.
18. Dobozi and Pohl, "Real Output Decline in Transition Economies."
19. This discussion of the potentially biasing factors draws substantially from Dobozi and Pohl, *ibid.*
20. Dobozi and Pohl, *ibid.*, maintain the unitary elasticity assumption throughout their calculations. A number of criticisms have been leveled against the unitary elasticity assumption in their calculations; see Vincent Koen's and Lev Freinkman's letters to the editor in Transition Newsletter. We relax this assumption and provide a more differentiated classification in the second and third scenarios presented.
21. See Dale Gray, "Reforming the Energy Sector in Transition Economies: Selected Experience and Lessons," World Bank, Discussion Paper No. 296, 1995; and Caroline L. Freund and Christine Wallich, "Raising Household Energy Prices in Poland: Who Gains? Who Loses?" World Bank, Working Paper No. 1495, 1995.
22. For our purposes, it is useful that official GDP estimates attempt to measure official GDP, and little else. A possible bias is that the official GDP may not capture some new products produced by official activities, which would result in an overestimate of the unofficial economy emanating from our approach. Conversely, however, official GDP figures do capture, at least minimally, some unofficial activities. Statistical offices, such as Goskomstat, include some minimal adjustments in order to capture at least some unofficial activities. Neither factor is likely to be very large nor subject to major yearly changes in the early 1990s

Hence, this scenario also differentiates according to broad energy-efficiency categories, yet it focuses on overall efficiency ratios (rather than on elasticity differences, which imply differences at the margin).

23. As of late 1995, Russian national accounts were undergoing a significant revision in order to incorporate unofficial activities. This does not affect the official figures we utilized, which were received up to mid-1995.

24. Valeriy M. Rutgaizer, Gregory Grossman, Vladimir G. Treml, et al., "Studies on the Soviet Second Economy," various reports, 1986-91. Also, see various estimates in Janine Braithwaite, "From Second Economy to Informal Sector: The Russian Labor Market in Transition," mimeo, World Bank, 1994.

25. Sources for information utilized: Poland: Research Center for Economic Studies; Timothy E. Hleniak, The World Bank. Czech Republic: Timothy E. Hleniak, The World Bank. Hungary: Janos Arvay and Andras Vertes, "Impact of the Hidden Economy on Growth Rates in Hungary," International Association for Research in Income and Wealth, 23rd General Conference, St. Andrew's, New Brunswick, Canada, 21-27 August 1994. Romania: Romanian Society of Economists (SOREC). Bulgaria: Timothy E. Hleniak, The World Bank. FSU: Berkeley-Duke Studies of the Second Economy; Janine Braithwaite, "From Second Economy to Informal Sector: The Russian Labor Market in Transition," mimeo, World Bank, 1994. Note that for CEE countries the point estimates from available studies are from the early 1990s, thus necessitating extrapolation backward and forward in our macroelectric framework.

26. It ought to be noted, however, that although the Czech Republic's share of the unofficial economy today, at 18 percent, is still low relative to other countries, the share grew significantly during the period--it was extremely low initially, estimated at less than 5 percent.

27. The lack of official recognition of these activities in most analyses implies that an implicit estimate of zero (or close to it) for the unofficial economy was chosen by default (or when analyzing trends, the "default" assumption is that the growth rates of the official and unofficial economies have moved in tandem--which is a fallacy in the FSU and CEE region). Hence, however imperfect the unofficial economy estimates may be initially, attempts at measuring and understanding the unofficial economy are bound to significantly improve measurement and understanding of the dynamics of the overall economy.

28. In reality, there is a paradox. It is precisely in those settings with large unofficial economies that there often has been less inclination to liberalize in the first place. This in turn led to the large size of the unofficial economy. Hence, a farsighted team of reformists is often needed, one that is prepared to break from the past in light of the evidence and fully liberalize the official economy.

29. Figures calculated on the basis of data from: *Ekonomika Ukrayiny v 1994 rotsu*; Annual Report of the President of Ukraine to the Verkhovna Rada of Statistics of Ukraine, March 1995; *Statystvchny Schovichnyk Ukrayiny a 1994 rik*, Ministry of Statistics of Ukraine (Kiev: Tekhnika, 1995); data of the Ministry of Finance of Ukraine.

30. These general points on optimal tax rates would require further empirical elaboration; no precise recommendations on tax rates or tax reform measures are intended here. More generally, however, even the entrepreneurs' responses indicate their willingness to return to the official economy if taxes were moderate and stable (and nonretroactive). But the return to the official economy would be gradual, which would need to be factored into the detailed tax calculations.

31. A clear distinction would need to be made between leniency regarding the past and the strict penalties expected from underreporting in the future. In fact, a clear signal from the time of the announcement in the form of stronger enforcement of tough penalties for concurrent illegal activities, would be warranted.

32. See Johnson, Kaufmann, and Ustenko, "Winner, Losers and Survival Strategies," for a formalized and empirical elaboration on these issues.

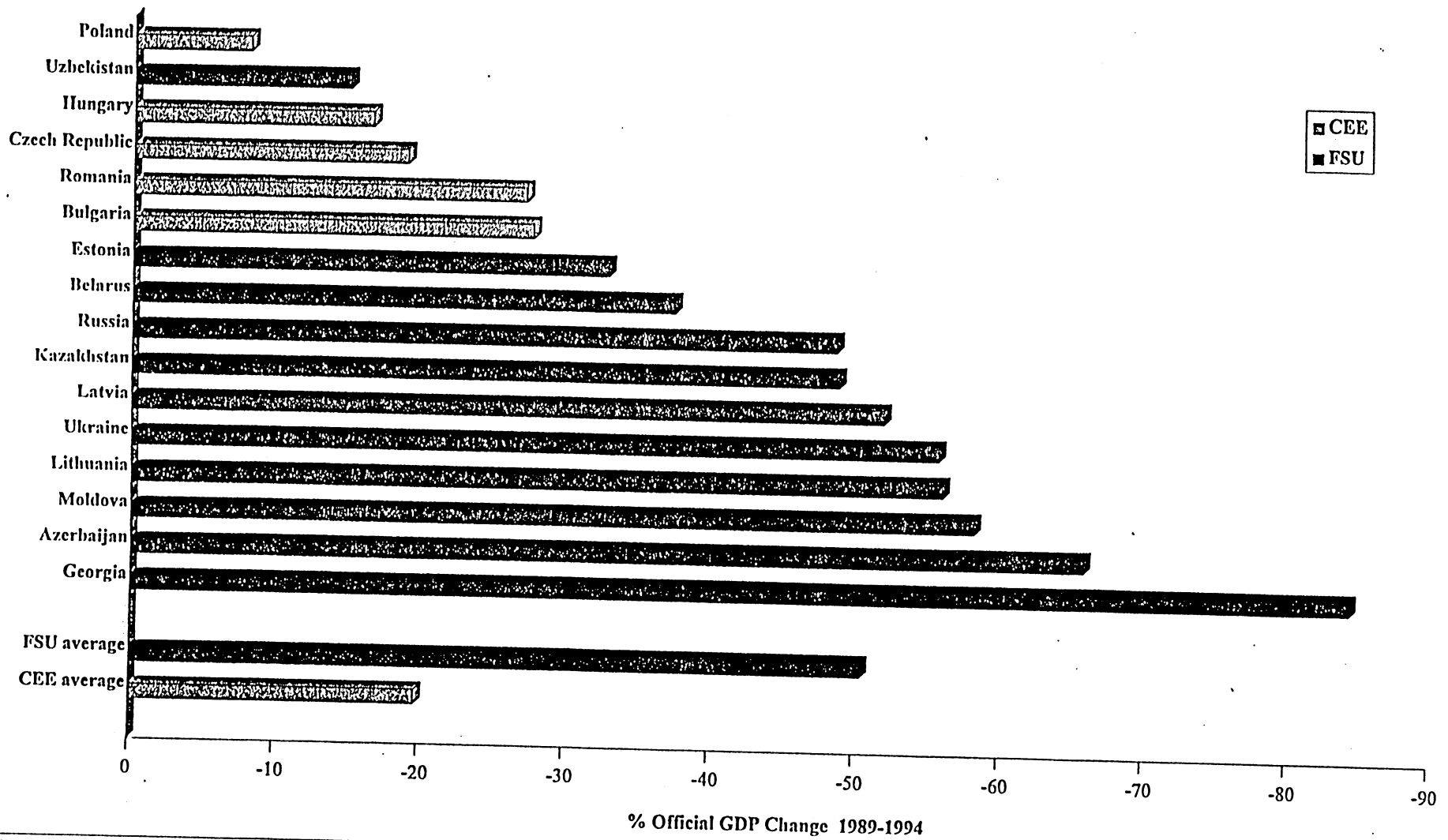
33. Ibid.

34. At least in the medium term.

35. Hence, in a country with given preconditions favoring crossover to the unofficial economy it can be hypothesized that the rate of adoption of the unofficial economy over time is akin to an S-shaped curve that tapers off at higher levels of adoption due to the dwindling residual universe (as in the literature of adoption of technological innovation). More generally, when forecasting it is important to consider that inappropriate policies providing an incentive for crossover will also bring down aggregate demand, slowing down all activities, unofficial and official alike. In other words, there is a complex interplay between a country's economic reforms (or lack thereof) and the substitution and income effects on the path and dynamics of the unofficial economy.

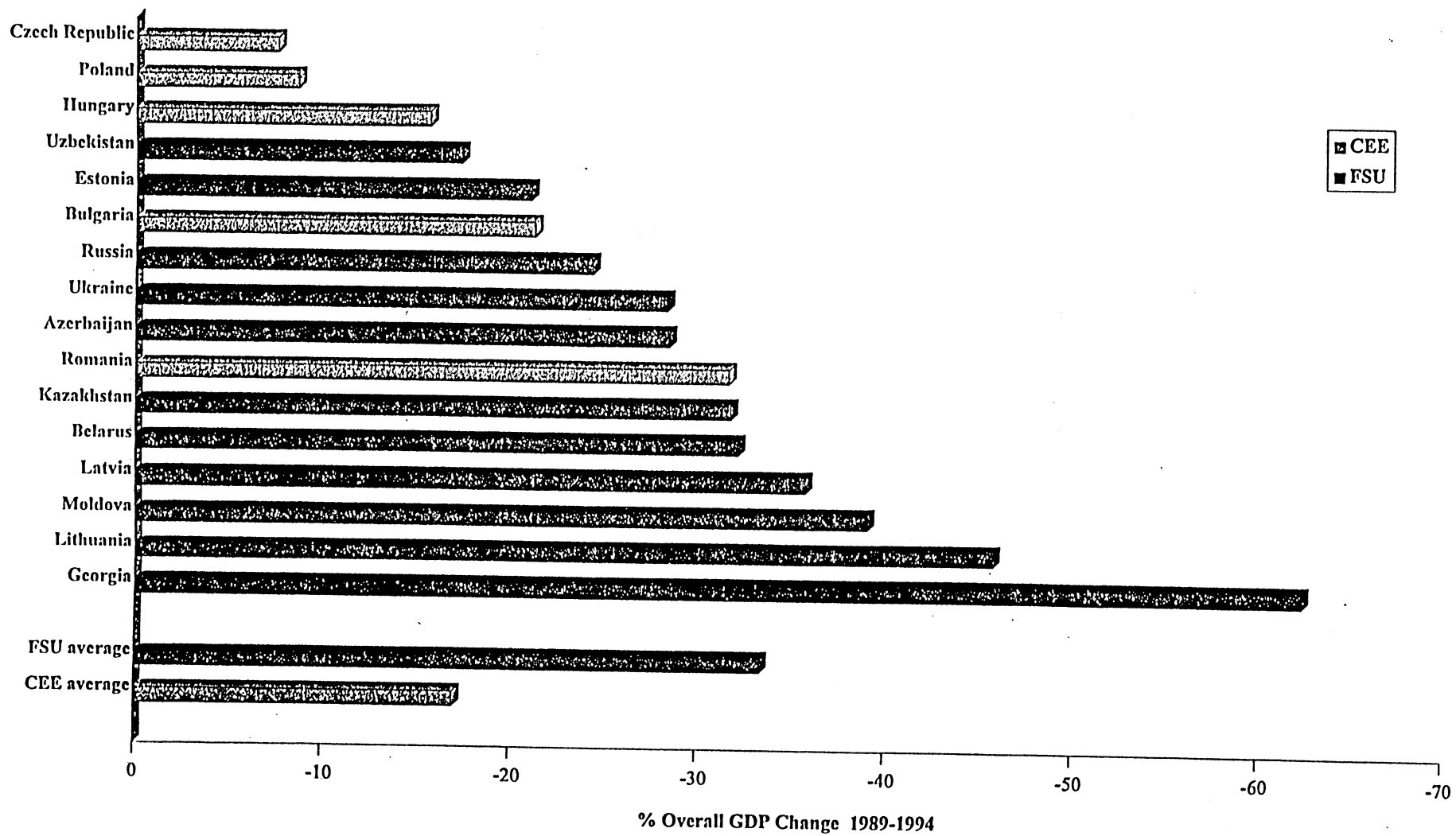
36. A program of macroeconomic stabilization, liberalization, and privatization was launched in Ukraine in late 1994, shortly after President Kuchma's speech to Parliament.

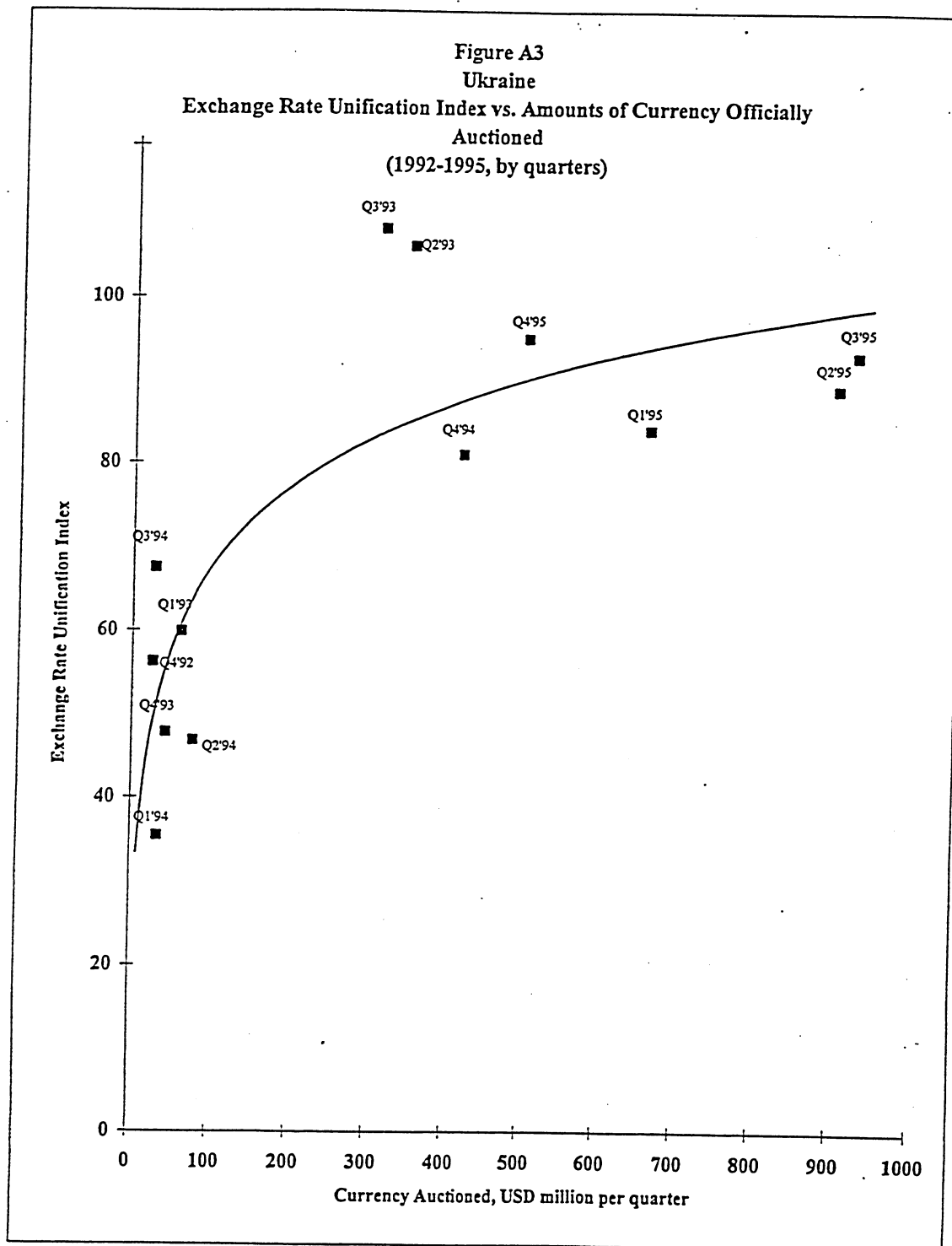
Figure A1
Official GDP Decline in CEE and FSU Countries 1989-1994



A-1

Figure A2
 Overall GDP Decline in CEE and FSU Countries 1989-1994





Note: An index of 100 signifies complete unification (i.e. equivalency in utilizing official or open market channels to redeem dollars). The Exchange Rate Unification Index is calculated according to the formula:

$$ERUI = [(NBU \text{ Rate} / \text{Market Rate}) * \text{Forex Surrender Share} + (\text{Auction rate} / \text{Market Rate}) * (1 - \text{Forex Surrender Share})] * 100.$$

For the period 1992 - Jan. Feb. 1993 when 40% tax was applied (instead of surrender requirement) the formula applied was $ERUI = (\text{Auction Rate} / \text{Market Rate}) * 0.6$. Since October 1994 Auction rate is equal to NBU effective surrender rate.

Source: National Bank of Ukraine data, World Bank calculations.

Figure A-4
 1994 Share of the Unofficial Economy in CEE and FSU Countries, 3 Scenarios

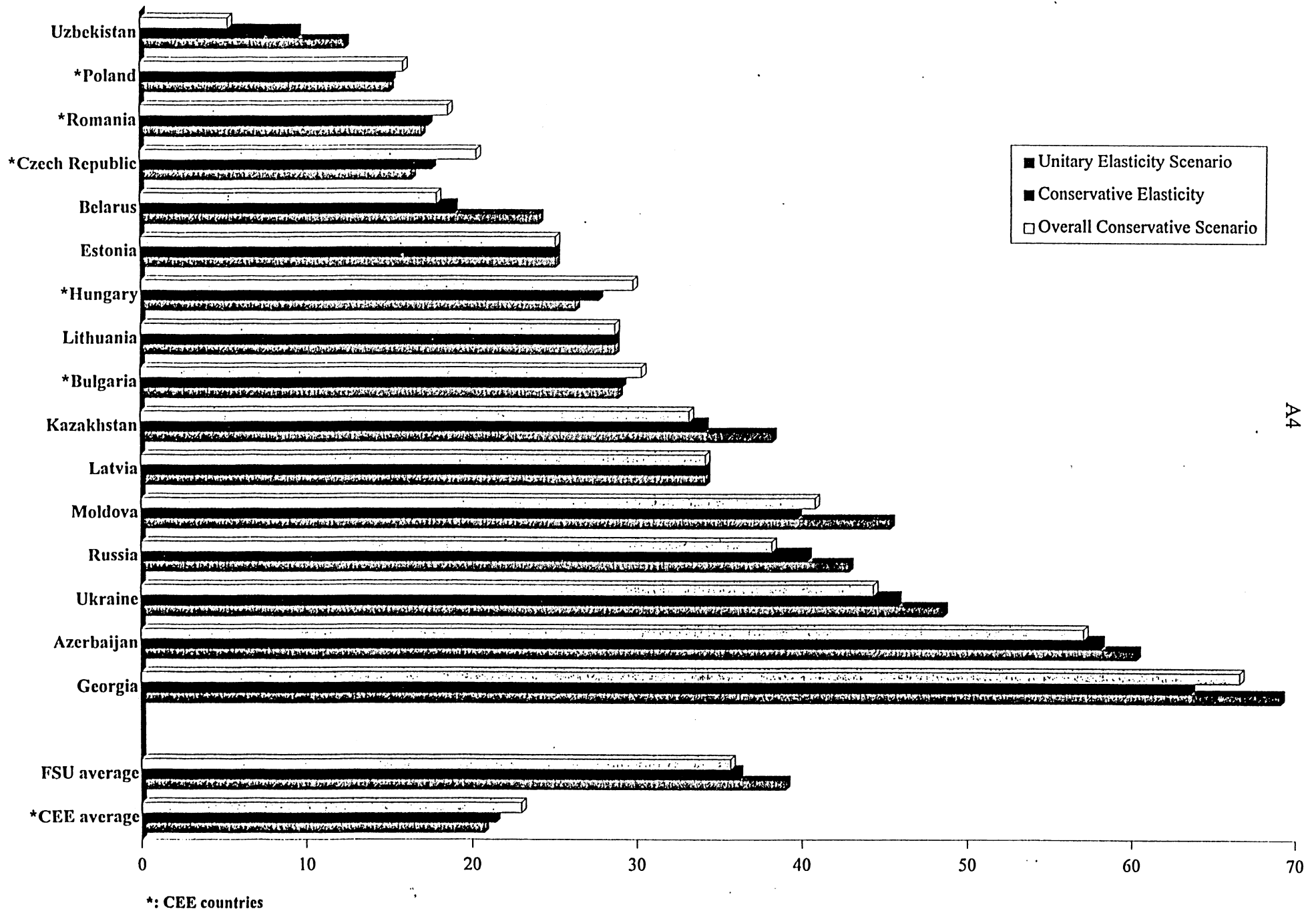


Figure A5
Official GDP Growth and the Dynamics of the Unofficial Economy,
Yearly Changes, 1989-1994, 16 Countries, Pooled Sample

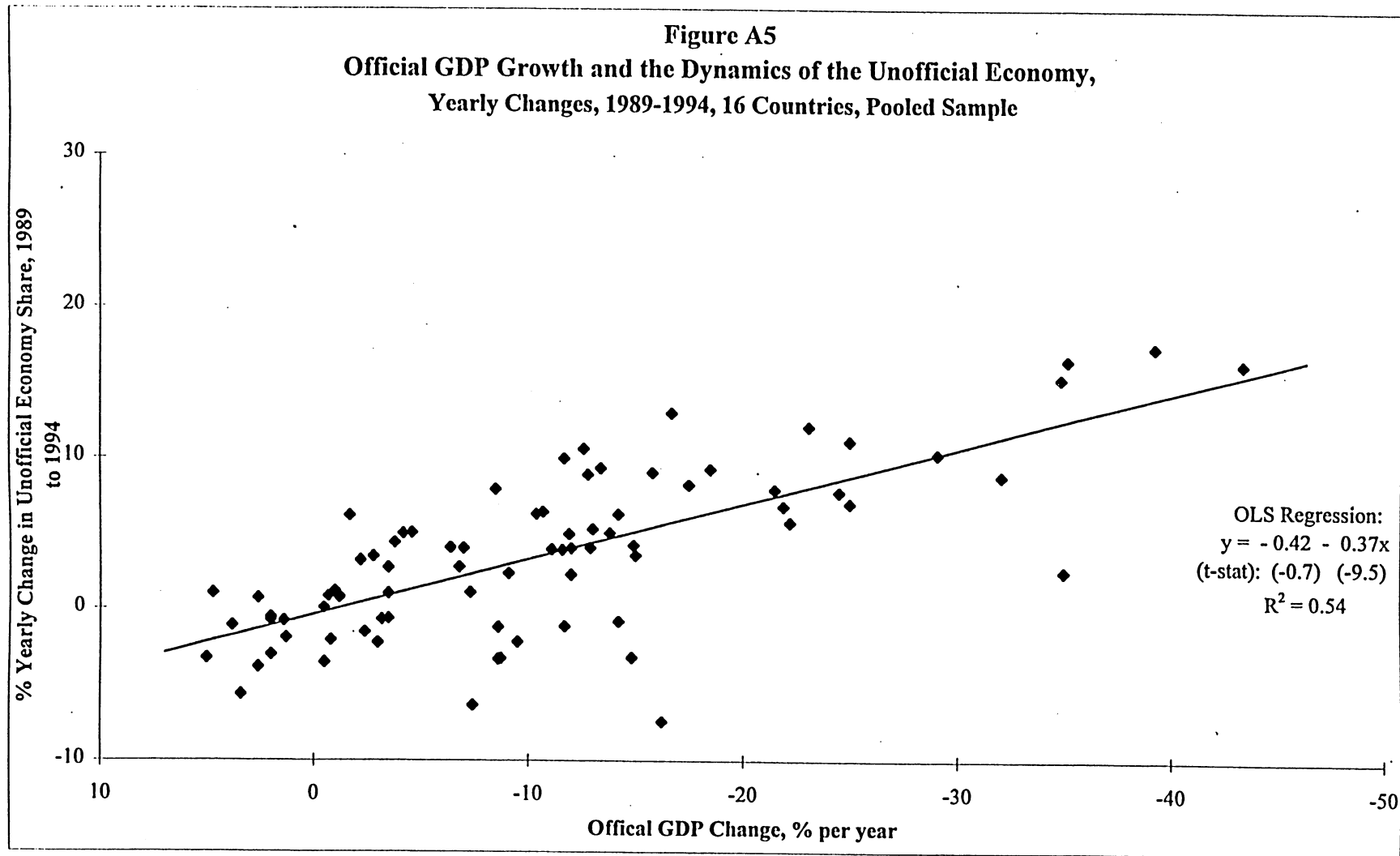
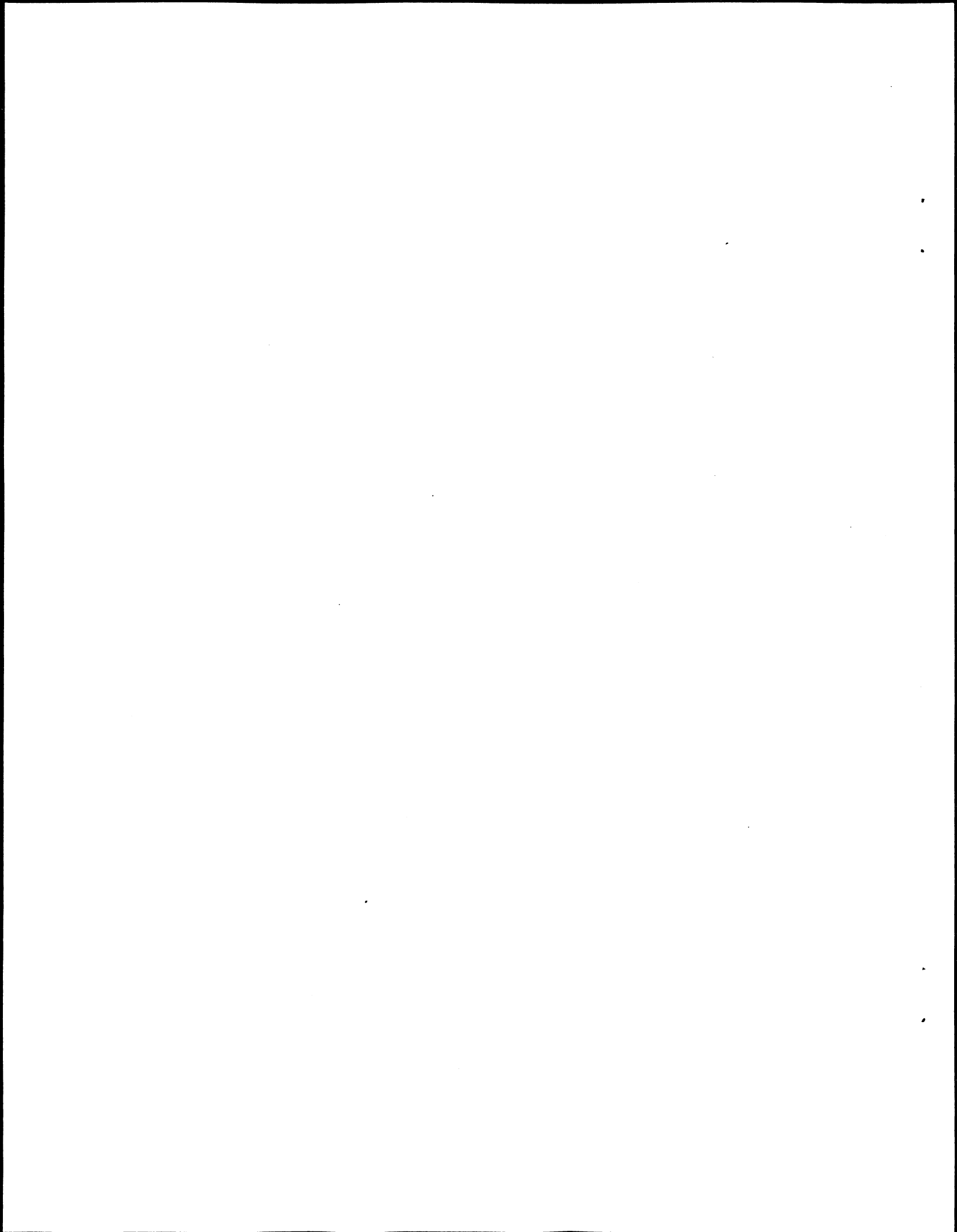


Table A1
Basic Results from Electric Approach to Measurement of Unofficial Economy
Conservative Elasticity Scenario

Countries	Estimated Share of the Unofficial Economy						Change in Unofficial	Official GDP decline	Overall GDP decline
	1989	1990	1991	1992	1993	1994	Economy Share 1989-1994	1989-1994	1989-1994
*Romania	22.3	13.7	15.7	18.0	16.4	17.4	-4.9	27.2	31.5
Uzbekistan	12.0	11.4	7.8	11.7	10.1	9.5	-2.5	15.0	17.4
*Poland	15.7	19.6	23.5	19.7	18.5	15.2	-0.5	8.1	8.7
*Hungary	27.0	28.0	32.9	30.6	28.5	27.7	0.7	16.6	15.7
*Bulgaria	22.8	25.1	23.9	25.0	29.9	29.1	6.3	27.7	21.3
Belarus	12.0	15.4	16.6	13.2	11.0	18.9	6.9	37.5	32.2
*Czech Republic	6.0	6.7	12.9	16.9	16.9	17.6	11.6	19.0	7.6
Estonia	12.0	19.9	26.2	25.4	24.1	25.1	13.1	32.9	21.1
Lithuania	12.0	11.3	21.8	39.2	31.7	28.7	16.7	56.1	45.8
Kazakhstan	12.0	17.0	19.7	24.9	27.2	34.1	22.1	48.9	31.8
Latvia	12.0	12.8	19.0	34.3	31.0	34.2	22.2	52.0	35.8
Moldova	12.0	18.1	27.1	37.3	34.0	39.7	27.7	58.3	39.1
Russia	12.0	14.7	23.5	32.8	36.7	40.3	28.3	48.7	24.4
Ukraine	12.0	16.3	25.6	33.6	38.0	45.7	33.7	55.8	28.4
Azerbaijan	12.0	21.9	22.7	39.2	51.2	58.0	46.0	65.9	28.5
Georgia	12.0	24.9	36.0	52.3	61.0	63.5	51.5	84.4	62.4
<u>FSU average</u>	12.0	16.7	22.4	31.3	32.4	36.2	24.2	50.5	33.4
<i>including: Baltics</i>	12.0	14.7	22.3	33.0	28.9	29.3	17.3	47.0	34.2
<i>Other non-war</i>	12.0	15.5	20.1	25.6	26.2	31.4	19.4	44.0	28.9
<i>War countries</i>	12.0	23.4	29.4	45.8	56.1	60.8	48.8	75.2	45.5
*CEE average	18.8	18.6	21.8	22.0	22.0	21.4	2.6	19.7	17.0
<u>Overall average</u>	14.1	17.3	22.2	28.4	29.1	31.5	17.4	40.9	28.2

*: CEE countries



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