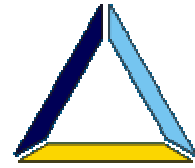


**INSTITUTE FOR ECONOMIC RESEARCH AND
POLICY CONSULTING**



Working Paper No.11

Iryna Mel'ota, Paul Gregory

**New Insights into Ukraine's Shadow Economy:
Has it Already been Counted?**

July 2001

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New Insights into Ukraine's Shadow Economy: Has it Already been Counted?

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1 Introduction

In this paper, we interpret the shadow economy (SE) as encompassing all forms of economic activities, which are not reflected in the official statistics (Lacko, 1998, Schneider, 2000). This definition includes all activities which generate added value that are in the "statistical underground", (non-responding, non-registering, or not surveyed enterprises), the "economic underground" (underreporting or unregistered enterprises), the informal sector, or the illegal sector. The World Bank (World Bank, 2001) distinguishes a total of eight types of SE operations that must be considered when properly accounting for SE activities.¹ Measuring the shadow economy is a complicated undertaking that seeks to capture a wide range of economic activity, which its instigators are attempting to conceal. In this business, there are no right or wrong answers. What we are seeking is the best approximation. The international literature singles out Ukraine as a transition economy that has a particularly large SE sector (Kaufmann, 1996; Lacko, 1998; Schneider, 2000). A widely accepted study (Kaufmann and Kaliberda, 1996) suggests that Ukraine's GDP would be 40 percent larger if the shadow economy (SE) were included and that the economic decline between 1990 and 1999 (when positive growth resumed) would be 41 percent instead of the official 67 percent if the shadow economy were included (see Table A 1, Appendix A). Estimates of the relative size of Ukraine's SE range from 30 percent to 100 percent (Telgmaa, 1999). Moreover, experts believe that the structure of Ukraine's SE is unusual in that it is concentrated in large enterprises as opposed to the more common pattern of SE concentration in household and small enterprises (Johnson and Kaliberda, 1996).

The literature on Ukraine's shadow economy provides both a comforting and a disturbing message. The comforting message from this literature is that Ukraine's national output is not as small and that its economic decline has not been as dramatic as official statistics suggest. In effect, the SE has provided a buffer that has allowed ordinary citizens and small businesses to survive during hard times.

The disturbing side of Ukraine's shadow economy story is that such a large share of economic activity devoted to illegal or semi-legal activities cannot be healthy. Such an economy cannot collect taxes, will be corrupt, and cannot make appropriate macroeconomic choices. Ukraine's private enterprise sector cannot develop dynamically because SE enterprises cannot grow into larger enterprises as their access to outside capital will be

¹ See Appendix B for a listing of these eight categories.



limited. If the U.S. Silicon Valley entrepreneurs had not been able to leave their garage establishments for capital market financing they would never have grown into the giant concerns that spurred US growth in the 1990s.

2 Ukraine's shadow economy in official statistics

The extensive shadow economy literature (see survey by Schneider and Enste, 2000) applies primarily indirect methods (based on electricity usage or currency demand) to estimate the size and growth of the SE's of a large number of countries. These studies largely assume that national statistical authorities have not properly captured both the size and growth of the SE in their official aggregate statistics. The fact that most national statistical agencies attempt to adjust for SE omissions from GDP (see World Bank, *Statistical Issues in Transition Economies*, 2001) tends to be overlooked. The appropriate question, therefore, is whether these adjustments already "count" the shadow economy and whether indirect estimates of the SE are counting them twice? In fact, if national statistical agencies adjust too generously for SE activities, official GDP may even overestimate the real size of GDP. Obviously, the fact that SE activities are deliberately hidden from public scrutiny means that it will not be possible to definitively determine whether a particular country's adjustment for the SE is too small or too large. What we emphasise is that the SE literature has appeared to ignore the fact that such adjustments are made at all. For transition economies, where it is essential to measure the true decline in output and current living standards, it is essential to have a correct understanding of the content of official measures of growth and GDP.

International organisations (OECD, 1997) spell out methodologies for national statistical authorities to include, as best as they can, the shadow economy in official estimates. Most countries, including transition economies where the SE is presumed to be large, do indeed make serious efforts to include the shadow economy in their official estimates (World Bank, 2001). Unlike the shadow economy literature (Schneider and Enste, 2000), which is published in scholarly journals, the SE adjustments carried out by national statistical agencies are, at best, published in technical appendices that are limited in circulation.

3 Ukraine's official SE adjustments

This paper analyses Ukraine's adjustments for SE activities in its official national accounts. It finds that Ukrainian statistical authorities have indeed made substantial adjustments, although we conclude that the size of the SE is still underestimated.

Economic statistics in Ukraine have been in the process of adjustment from material production statistics (MPS) to the System of National Accounts (SNA) concepts since 1993. Ukraine's state statistical agency,



Derzhkomstat (hereafter denoted as DKS) has included the shadow economy in its national accounts since 1995, following the recommendations of international agencies such as Eurostat and has published an internal report on its adjustments.²

DKS experts contend that Ukraine's official GDP estimates already capture its SE, although they recognise that such adjustments are inherently inaccurate due to the concealed nature of the activities. Table 1 summarises DKS's adjustments for shadow economy activities for the year 1999. DKS adjusts for two types of SE activities; namely, value added from informal household activity (which results in an upward adjustment equal to 15.6 percent of GDP), and secondly, adjustments for SE activity of non-financial corporations (enterprises). The second adjustment raises GDP by significantly less, by 3.6 to 4.6 percent of GDP. Thus, the total adjustment to GDP for Ukraine's SE is approximately 20 percent of GDP. DKS also estimates the percentage of the labour force engaged in the informal shadow economy at 10.3 percent; namely in "household" enterprises that employ five persons or less.

Participants in the SE attempt to conceal their actions; therefore, we cannot expect great accuracy in the adjustments summarised in Table 1. DKS's adjustments are based on rules of thumb and expert assessments, and represent its best estimate. Outside researchers can, however, ask whether these DKS adjustments appear to "reasonable" in the sense of corresponding to a-priori expectations based on anecdotal and other fragmented evidence. Surprisingly, DKS attributes more than three-quarters of the Ukrainian SE value added to household production and only one quarter to non-financial corporations. The Ukrainian stereotype suggests, to the contrary, that a special feature of Ukraine's SE is that it is carried out by large enterprises, including large state enterprises. The state newspaper "Uryadovy Kurier" (Governmental Courier), for example, has carried a number of reports of illegal expenditures and asset stripping in enterprises controlled by the Ministry of Energy and Fuel and the State Committee on Industrial Policy.³ The prominent role of private households in DKS's approach is reflected in the relatively small adjustments for industry, and the very large adjustments made for agriculture and trade – activities that are carried out largely by households.

² Derzhkomstat National Accounts Department Report "Account of Informal Economic Activities in The National Accounts of Ukraine", 1999.

³ See, for example, "Uryadovy Kurier", August 3, 2000.



Table 1
Adjustments for the Ukrainian shadow economy by Derzhkomstat, 1999

Sectors	Adjustments as % of sectoral GVA		Sectoral share in GDP (GDP = 100%)	Adjustments as % of GDP		Total adjustments as % of GDP	Estimated methods used for adjustments
	Households (informal activity)	Non-financial corp's (hidden and non-registered production)		Households (informal activity)	Non-financial corp's (hidden and non-registered production)		
1	2	3	4	5 = 2 x 4	6 = 3x 4	7 = 5 + 6	8
Industry	2.5-3%	n/a	33.2%	1.0%	2-3%	3-4% ¹⁾	STA data, HBS
Agriculture	70%	-	12.8%	9.0%	-	9.0%	Report on activity in agriculture, HBS
Construction	19-20%	7%	5.2%	1.04%	0.36%	1.4%	Expert estimates
Fishery	15%	-	0.1%	0.02%	-	0.02%	HBS
Forestry	20-25%	-	0.4%	0.1%	-	0.1%	HBS
Other goods	-	-	0.7%	-	-	-	-
Transportation	0.6-0.7%	-	13.2%	0.09%	-	0.09%	HBS
Trade ²⁾	25-30%	14%	9%	2.7%	1.26%	4.0%	Random surveys, HBS, expert estimates
Consumer services ³⁾	25%	-	0.6%	0.15%	-	0.15%	HBS
Housing and communal services	30%	-	5%	1.5%	-	1.5%	HBS
Other services	-	-	20.8%	-	-	-	-
Total adjustments as % of GDP				15.55%	3.6-4.6%	19.2-20.2%	

¹⁾ Only total adjustments for informal activities of small businesses as % of GDP

²⁾ Trade includes retail trade and catering

³⁾ Consumer services include tailoring, hairdressing etc.

* Calculations for the shadow economy in the non-financial corporation sector are made by industries (production, construction, transport, trade) and for informal activities of households for the following sectors: industry, construction, agriculture, trade, services, education, health care, and culture. These calculations are based on economic surveys of households and on information from the tax administration. Import/export adjustments on so-called 'shuttle' trade are done by the National Bank and are included in the balance of payments. Additional calculations were made for small enterprises that distort their production activities reports (e.g. understate outputs and overstate production costs). Enterprise summary reports were compared with reports of average enterprises to measure the output of small enterprises. This adjustment raises GDP by 2-3 percent.

Source: Account of informal economic activities in the national accounts of Ukraine (unpublished)



To get some feel for the DKS adjustments, we compared them with those for 10 other transition economies plus Cyprus⁴, all candidate countries for membership in the European Union, where a uniform methodology was used throughout. Tables 2a and 2b compare Ukraine's adjustments for SE activities by sector and by the eight categories suggested by international organisations with the corresponding average adjustments made for the eleven candidate countries. As is evident, the most substantial discrepancy is Ukraine's extraordinary 70 percent adjustment for agriculture (57% above the average adjustment of 13% and well above the maximum adjustment of 44%) and its relatively small (6-9 percent⁵) adjustment for industry. If we apply the average adjustment for industry (10 percent) to Ukraine, the SE share would rise by 2.5 percentage points.

Table 2a

Comparison of Ukraine's SE adjustments by industry with adjustment for 11 transition economies (candidate members of the EU, including Cyprus), in % of GVA

	Candidates			Ukraine
	Minimum	Maximum	Average	
Agriculture, forestry, fishing	0	44	13	70
Industry broadly defined	2	26	10	6-9
Construction	0	46	26	20
Trade broadly defined	2	37	27	25
Services	1	23	12	25

Source: World Bank, Statistical Issues in Transition Economies, Table 1

Based on the experience of the candidate countries, we regard most of these adjustments to be underestimates for Ukraine. The candidate countries are at a more advanced stage of reform and should have smaller SEs than Ukraine. Even if larger adjustments were made, we still doubt the validity of DKS's major conclusion – that households represent the major source of SE value added. We suspect that the SE activities of Ukrainian companies have been underestimated, and we will present evidence below to support this contention.

⁴ The 11 candidate countries are 10 countries in transition (Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia) and Cyprus.

⁵ There are no adjustments to SE in industry as a percentage of sectoral GVA in DKS's report and thus they are marked as n/a in the table 1. These estimates could be directly calculated from the table by dividing adjustments in industry as a percentage of GDP (column 6) by the industry's share in GDP (column 4).



Table 2b
Comparisons of adjustments for under-coverage: Ukraine and candidate countries

Eurostat "tabular approach" type of adjustments	Derzhkomstat estimates	Sources and methods used by Derzhkomstat	Average adjustments as % of GDP in 11 countries	Adjustment as % of Ukrainian GDP
Statistical underground (non-response)	n/a	-	2.5	- ¹⁾
Statistical underground (not updated register)	n/a	-	0.4	-
Statistical underground (not register, not surveyed)	n/a	-	1.1	-
Economic underground (underreporting)	Hidden activities and underreporting	Fiscal audit data, experts estimates, sample surveys	7.2	} 3.6-4.6% ²⁾
Economic underground (not registered)	HH sector	HBS, sample surveys	4.2	
Informal sector (not registered, underreporting)	HH sector	HBS, sample surveys, STA income reports	1.6	15.55% ³⁾
Illegal activities	were not considered	-	1.3	-
Other GDP under-coverage	HH sector	HBS	0.4	-

¹⁾ A hyphen means that DKS does not make this type of adjustment for Ukraine.

²⁾ Eurostat's economic underground (underreporting and not registered) corresponds to hidden and non-registered activities of non-financial corporations in terms of DKS. The 3.6-4.6% adjustment is calculated as the sum of column 6 in the table 1.

³⁾ Eurostat's informal sector (not registered, underreporting) corresponds to DKS's informal activity in the household sector. The 15.55% adjustment was calculated as the sum of column 5 in the table 1.

Source: World Bank, Statistical Issues in Transition Economies, Table 1



4 Relative productivity

Ukraine's DKS also estimates the share of the household labour force devoted to the shadow economy at 10 percent, while estimating 15 percent of GDP value added for the informal (household) accounts. Hence, implicit in the DKS calculation is the fact that in the shadow economy labour is 50 percent more productive than labour in the official sector. Work effort or the incentive to work is effectively stronger in the shadow economy.

Schneider (2000) provides roughly comparable data on the shadow economy labour force and output for a sample of transition countries, which is not limited to the informal (household) sector alone.⁶ According to Schneider's data, the SE labour force in transition countries averages 49 percent of the official labour force and 24 percent of official GDP; that is, the shadow economy labour is twice as efficient as officially documented labour. If these rough figures are to be believed, Ukraine's shadow labour force does not have as much of a productivity advantage as that in other transition economies, but it should be emphasised that these calculations are very approximate. This discrepancy may reflect the absence of enterprise shadow economy activities in the Ukrainian estimates, which capture primarily informal household activities. Ukraine's relative productivity figures are more comparable to those of OECD countries. Schneider shows that shadow economy GDP per capita is about 40 percent higher than official GDP per capita in OECD countries, the same as the average for all countries anywhere, which is also around 40 percent.

The higher relative productivity of Ukraine's shadow labour conforms to the general patterns of other countries, but it may be somewhat lower than in other transition economies (or result from DKS's restrictive calculation).

5 Household budget surveys

Household Budget Surveys (HBS) represent a means of checking the consistency of the adjustments for SE activities of households. Presumably, households would be reluctant to reveal shadow economy earnings, but they might be more willing to reveal their expenditures, particularly if expenditures are aggregated from individual spending items.

According to Table 1, Ukrainian households conceal 15.55 percent of the value added they create in household production. We can use the new Ukrainian household budget survey, first conducted in 1999 according to international standards, to test the proposition that households will not

⁶ The transition countries in Schneider's sample include Armenia, Bulgaria, Croatia, Georgia, Kazakhstan, the Kyrgyz Republic, Romania, and Russia.



reveal income.⁷ We assume that SE activities are conducted in cash and not barter or offsets. Table 3 shows that reported household cash expenditures exceed household cash revenues by a substantial 17 percent of GDP. Ukrainian households spent almost 50 percent more than their income, which means either that households were drawing down savings at an incredible rate or that they are underreporting their income. The 17 percent figure is quite close to the adjustments for shadow economy in household sector made by Derzhkomstat and reported above. Thus, the household budget survey supports the credibility of adjustments for the informal activities made by Derzhkomstat.

Table 3

Shadow household income revealed by Household Budget Surveys, alternate estimates, 1999, (UAH m)

	1999
1. Number of households, thousands	17,748
2. Total monetary income (TMI) of households	45,072
3. Total monetary expenditures (TME) of households	66,882
4. Unreported income (3-2) (Direct estimate from HBS)	21,810
5. Reported saving	631
6. Alternate saving estimate (UEPLAC)	7,166
7. Unreported saving	6525
8. Unreported income (3+7-2) (indirect estimate)	28,335
9. Unreported income as a percentage of GDP (from 4 and 8)	17% - 22%

¹⁾ The savings rate in the HBS is defined as purchases of real estate, securities, foreign currency, bank deposits and residential construction.

Source: Derzhkomstat, Statistical bulletin of income and expenditures of Ukrainian households in 1999

Table 3 may in fact underestimate the discrepancy between reported expenditures and reported income in that the reported savings of households, defined as purchases of real estate, securities, foreign currency, bank deposits and residential construction, equal only 1.4 percent of total monetary income (UAH 631 m). The expenditure data suggest virtually no saving. It is quite possible that Ukrainian households are as reluctant to report their savings as they are their shadow earnings. Only 0.4 percent of all respondents reported real estate investment, 1.4 percent residential construction, and 4.7 percent reported purchases of securities, foreign currency or bank deposits. Such a low saving rate contradicts UEPLAC's estimate of Ukrainian household saving (15.9 percent) based on independent data of asset accumulation.⁸ If we take the higher saving figure (UAH 7166 m) as the true Ukrainian savings figure,

⁷ The survey was carried out under aegis of the United State Agency for International Development (USAID) and the World Bank.

⁸ UEPLAC (Ukrainian-European Policy and Legal Advice Centre) uses its own and Derzhkomstat calculations: Total savings are the sum of savings in banks and the increment in cash balances (and net purchases of foreign currency).



the household shadow economy share of GDP increases from 17 to 22 percent for 1999.

Comparative studies of saving rates do not suggest a clear pattern for transition economies. Russia's household saving rate is probably in the neighbourhood of 11 percent, while Hungary's is 18 percent, Poland's 9 percent and Bulgaria's is practically zero.⁹ If we assume that Ukraine follows the pattern of its nearest neighbour, Russia, then unreported household income would be around 20 percent of GDP – some four percent higher than DKS's estimate of the household shadow economy.

Unreported household earnings do not necessarily capture only hidden household entrepreneurial activities, one form of proprietor's income. They would also capture concealed wages paid by enterprises, hidden primarily to save on payroll taxes. According to a survey of enterprises in Ukraine made by the International Financial Corporation, some enterprises do indeed pay employees in cash (in an envelope).¹⁰ It seems logical that a portion of the 17-22 percent of concealed income is concealed enterprise income, not concealed household income. If we accept DKS's estimate of unreported household income of 15.5 percent of GDP and the 20 percent figure for the total of unreported (concealed household income), then 4.5 percent of unreported income should be attributed to the enterprise sector.

6 End use versus production

The fundamental accounting premise of national income analysis states that a country consumes (in the form of consumption, investment, government consumption and net exports) what it produces. GDP can be calculated as the sum of end uses and/or as the sum of value added by production units. A number of industrialised countries use GDP by end use (consumption plus gross investment plus government consumption plus net exports) as the foundation of their GDP accounts. This is particularly true of countries that have reliable means of calculating personal consumption expenditures because most countries have reasonably accurate measures of government consumption, net exports and gross investment. Independent measures of GDP by sector of origin are then made with a statistical discrepancy separating the two. In some cases, this statistical discrepancy serves as a measure of the magnitude of the shadow economy, such as in contemporary Russia.

DKS reports Ukrainian GDP by both end use and by sector of origin, but does not report a statistical discrepancy. This practice suggests to us that DKS assumes the sector-of-origin figure is accurate and calculate personal consumption as a residual. It would be unlikely for the sum of

⁹ C. Denizer, H. Wolf, and Y. Ying, "Household Saving in Transition Economies, "World Bank, Typescript, 2001"; P. Gregory, M. Mokhtari, and W. Schrettl, "Do the Russians Really Save That Much: Alternative Estimates from the RLMS Survey," *Review of Economics and Statistics*, Vol. 81, no. 4 (November 1999). 694-703.

¹⁰ Ukrainian enterprises in 2000, an IFC Survey of Ukrainian Business.



consumption, investment, government, and net exports to exactly equal the sum of value added by sector of origin.

We can, however, calculate our own GDP-by-end-use figures by taking DKS's figures on investment, government, and net exports, and using the HBS to calculate personal consumption expenditures.¹¹ The results, shown in Table 4, generate a statistical discrepancy of 12 percent of official GDP, which can serve as a measure of the shadow economy activity *not incorporated* in the official figures.

Table 5 summarises our results: Recall that DKS's official GDP estimate already incorporates an adjustment of approximately 20 percent for the shadow economy activities of households and enterprises, 15.5 percent of which is for households and, at best, 4 percent of which is for the enterprise sector. The HBS data gathered from an independent survey, one presumably using international standards, does not contradict this figure but does suggest that it is a lower bound. Unreported household income may equal as much as 22 percent of GDP, but we suspect 20 percent is closer to the truth. However, not all of this unreported income is from the household sector. An undetermined portion captures unreported wage income paid by the enterprise sector.

Table 4

Comparisons of GDP-by-end-use with GDP-by-sector-of-origin, Ukraine 1999

	DKS data,	as % of GDP	Data with correction from HBS	as % of corrected GDP
1	2	3	4	5
C (consumption)	76453	60.1%	90838	64.3%
Households	72956	57.4%	87755	61.8%
Non-profit organisations	3497	2.8%	3497	2.5%
Government purchases of goods and services	24148	19.0%	24148	17.0%
I (gross domestic investment)	25147	19.8%	25147	17.7%
X-M (Export - Import)	1378	1.1%	1378	1.0%
GDP	127126	100%	141925	100%
Statistical discrepancy between DKS data and corrected data	14799 or 11.6 percent of official GDP			

Source: National accounts of Ukraine, Statistical publication, Derzhkomstat 2000

¹¹ We calculate personal consumption expenditures by subtracting intermediate expenditures (see Appendix B), such as on private plots, monetary assistance to other persons, reported savings, and alimony from total HBS expenditures. This figure includes the value of home grown and consumed products, which are typically included in personal consumption expenditures.

**Table 5**

Comparison of different calculations of the Ukrainian shadow economy, as a percentage of official GDP, Ukraine 1999.

	DKS estimations	DKS adjustment plus statistical discrepancy	Electricity consumption approach	Money demand approach
Shadow GDP	~20%	~32%	42% ¹⁾	67% (lower bound) ²⁾
Household sector	16%	16%	n.a.	n.a.
Enterprise sector	4%	15%	n.a.	n.a.

¹⁾ Estimates are based on the Kaufmann assumptions (Kaufmann and Kaliberda (1996)).

²⁾ Estimates by U. Thiessen, I. Mel'ota, T. Vakhnenko in "Fiscal and Regulatory Causes of the Shadow Economies in Transition Countries: The Case of Ukraine". Working paper N^o 9, IERPC. There is a range of estimates because different explanatory variables are included in different models.

The statistical discrepancy adds 12 percent to the "lower-bound" DKS figure of 20 percent. Thus we obtain a total shadow economy figure of 32 percent of GDP, 20 percentage points of which are already included in the official estimate. This result provides a more plausible estimate for it suggests that half of Ukraine's shadow economy is conducted by the enterprise sector with the remaining half conducted by the household sector. This conclusion is more consistent with anecdotal evidence.

7 Conclusion

The contribution of this paper is to show that official statistics already make generous adjustments for the size of Ukraine's shadow economy. In fact, we conclude that the national statistical agency already captures about two thirds of Ukraine's shadow economy with its substantial adjustment for household production and it rather minimal adjustment for the enterprise sector. Policy makers should therefore put aside the notion that official statistics grossly underestimate Ukraine's standard of living by not including the shadow economy activity. The so-far undetected shadow economy activity (now detected through the statistical discrepancy) raises the "real" Ukrainian GDP by only 12 percent. In 1999 the "true" Ukrainian GDP - according to our calculations - was UAH 141 bn, instead of the official UAH 127 bn. Of these UAH 141 bn approximately UAH 40 bn was shadow economy activity, two thirds of which were already included in the official figures.

The consistency tests we made suggest that our adjustment is a lower bound, but they do not indicate that the upper bound is very much above the lower. We would suggest an upper limit of some 35 percent.



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Appendix A

Table A 1
Official GDP vs. overall GDP

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
% change in official GDP	-4.0	-8.7	-9.8	-14.2	-22.9	-12.1	-10.0	-3.0	-2.0	-2.5
% change in overall GDP*	0.0	-7.5	-6.3	-7.8	-11.7	-5.4	-5.2	-1.8	-3.2	-2.0
Official GDP index	100	91.3	82.3	68.2	45.3	39.8	35.8	34.7	34	33.2
Overall GDP index	100	92.5	86.7	79.9	70.6	66.8	63.3	62.1	60.2	59

* Overall GDP includes official and unofficial economy

Source: Kaufmann and Kaliberda (1996); own calculations

Appendix B

Derzhkomstat SE adjustments

The tabular approach of Eurostat considers eight types of GDP of under-coverage:

T1: Statistical underground (non-response)

T2: Statistical underground (not updated register)

T3: Statistical underground (not registered, not surveyed)

Derzhkomstat adjustments do not cover these types of underground.

T4, T5: Economic underground (under-reporting and intentional non-registration)

Derzhkomstat treats the economic underground as hidden activities and as underreporting by non-financial corporations.

Adjustments for non-reporting are based on a comparison of registered reporting and registered non-reporting enterprises. A comparative analysis of the different firms shows that intermediate consumption in the production of some small enterprises is much higher than that of large and median ones for the same type of economic activity. Considerable differences between wages of persons employed in small and large enterprises within the same branch of activity and in similar locations also give rise to doubt.



This information allows us not only to determine the output of small enterprises but also other figures, such as gross value added, remuneration of labour, gross profit. After adjustments, GDP increased by 2-3 percent, that is the sum of value added of small enterprises that are underreporting.

Therefore, GDP figures whether derived by the production or the sources method need correction to output, intermediate consumption and employee remuneration data.

For the non-financial corporations sector the adjustments are made for the following fields:

- industry (hidden production of alcohol, meat and dairy products, tailoring etc.). Estimates are based on comparison of output and consumption of goods in term of physical units;
- construction: Experts' estimates increase output of construction by 7%;
- transportation;
- trade (including catering): Estimates are based on surveys of unorganised markets. As result the sales data was augmented by 14%.

T6: Informal sector (not registered, underreporting) and

T8: Other GDP under-coverage

This type of under-coverage, according to Derzhkomstat, is concentrated in informal household activities. The adjustments are based on studies of economic surveys of households and on information from the tax administration.

Table 1 shows adjustments in % of GVA of the sector and in % of GDP.

The most important adjustments, on average, are made to agriculture, trade and construction. Agriculture, though heavily adjusted, in the end only causes moderate adjustments to total GDP because of its relatively low share in GDP.

The total adjustments for the informal economy in Ukraine reached 15.5% of GDP in 1999.

T7: Illegal activities

Derzhkomstat does not make GDP adjustments for illegal activities.



Appendix C

Household Budget Survey. Estimation of the informal economy in households

Table C 3a
The relation between different types of incomes

Monetary, Total, and Aggregate Income	UAH, '000
Compensation for work	24,127.8
Revenue from entrepreneurship and self-employment	1,884.8
Revenue from sale of agricultural products	2,687.7
Revenue from sale of personal property	191.7
Revenue from sale of real estate	394.0
Dividends, interest payment, revenue from rental real estate etc.	108.6
Pensions	10,410.1
Stipends	80.9
Assistance* – total	3,271.3
= Total Monetary Income	45,071.6
+	
Value of consumed goods from farm and private subsidiary plots	16,266.9
Benefits & subsidies for municipal housing services, on gas, oil- and solid fuel	264.7
Access to limited number of health resorts facilities, inter-town transport, and trunk communication	694.3
Monetary estimates of charity	3,999.6
= Total Income	68,679.7
+	
Usage of savings, net borrowing and lending	2,016.9
= Total Aggregate Income	70,695.6

* Assistance includes charity, social security, allowances to single mothers and mothers with many children, unemployment benefits, assistance provided by relatives, friends and income from other sources.

Source: Derzhkomstat, Income and Expenditures of Households in Ukraine in 1999, Statistical bulletin



Table C 3b
The relationship between different types of expenditures

Consumption expenditures, monetary and aggregate expenditures	UAH, '000
Consumption expenditures on goods & services	63,378.8
+	
Expenditures on private subsidiary plots	1,444.0
Monetary assistance to other people	1,011.6
Purchase of real estate, securities, foreign currency, bank deposits	628.3
Alimony	72.4
Compulsory payments and voluntary contributions	112.9
Other expenditures	6.4
= Total Monetary Expenditures	66,882.2
+	
Value of household consumption derived from goods from farm and private subsidiary plots	n.a.
Benefits & subsidies for municipal housing services	2734.6
Access to limited number of health resorts facilities, inter-town transport, and trunk communication	607.0
= Aggregate Expenditures	90,839.6

Source: Derzhkomstat, Income and Expenditures of Households in Ukraine in 1999, Statistical bulletin



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