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contrasting results in the case of Croatia. In particular, we consider the results of related research by sociologists from our team on the socio-cultural dimensions of the informal economy (see Štulhofer, 1999; Štulhofer and Rimac, 2002). This research indirectly provides convincing evidence of the decline in the size of the informal economy, which leads us to argue in the end in favour of the null hypothesis.

The remainder of this paper is divided in three sections. Key results of our surveys on the size of the informal economy and the extent of tax evasion are presented in Section 2. Section 3 discusses other evidence supporting our main finding on the declining size of the informal economy, including the results of research conducted by sociologists on the socio-cultural dimensions of the informal economy in Croatia. Section 4 concludes and provides some policy recommendations.

II. ESTIMATES OF THE SIZE OF THE INFORMAL ECONOMY AND TAX EVASION

Figure 1 summarises seven different estimates of the size of the informal economy in Croatia during 1990-2000. The different methods are described below

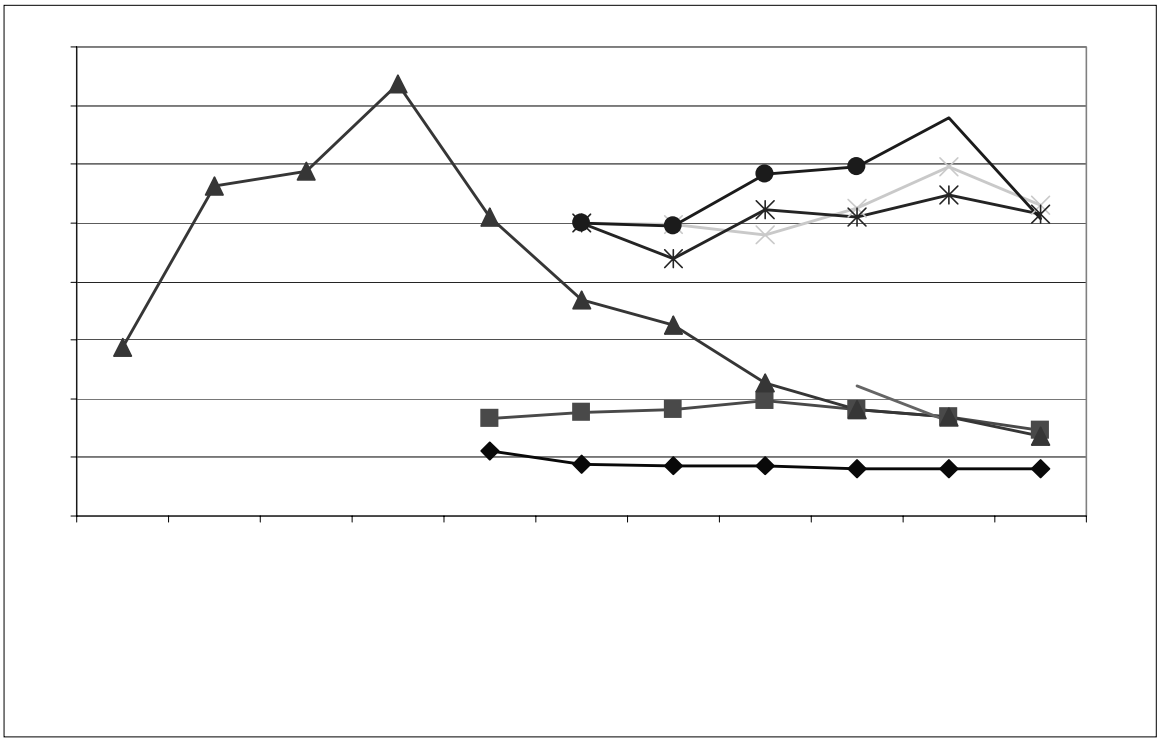
Box 1
Methods of estimating the size of the informal economy and tax evasion

1. and 2. Tax evasion - Tax evasion refers to a legal economic activity that is not reported for the purpose of avoiding the payment of taxation. Method: estimating the gap between collected and potentially collected taxes. Madžarevi -Šujster (2002); Blades (1982).
3. SNA - The informal economy is defined as the unrecorded economy. Method: independent sources of information (e.g. household budget surveys) are used to assess the level of GDP, which is usually higher according to the expenditure approach than according to the production or income approach. Results derive from the fact that individuals have fewer incentives to hide their real consumption in household budget questionnaires than income in tax files. The informal economy is thus interpreted from the difference in GDP calculations from two sources. Madžarevi -Šujster and Mikuli (2002); Blades (1982).
4. Electricity consumption – the unofficial economy is estimated on the basis of electricity consumption. Under the unit elasticity condition a percentage change in electricity consumption changes total GDP (includes both official and unofficial economy) for the same percentage. Kaufmann and Kaliberda (1996), Šoši and Faulend (2002).
5. Foreign currency – the unofficial economy is approximated on the basis of the estimated amount of foreign currency cash, given the underlying hypothesis that says that foreign currency cash is mainly used for transactions in the unofficial economy. This method could be particularly interesting for dollarized/euroized economies. The only known source, Šoši and Faulend (2002).
6. Ratio of domestic cash and deposits – the unofficial economy is approximated on the basis of the estimated amount of domestic cash currency that is used in the unofficial economy, since the main idea is that transactions in the unofficial economy are conducted only in (domestic) cash. Gutmann (1977); Šoši and Faulend (2002).
7. Eurostat – data about employment from the official sources are compared with data derived from the household labour force survey and from other sources. Eurostat (1995); Lovrin evi , Mikuli and Nikši -Pauli (2002).

We should first stress that empirical evidence for other countries also indicates wide discrepancies in the estimated size of the informal economy based on different methods. National accounts discrepancies methods usually give lower, while various monetary methods usually give higher results. Schneider and Enste (2000) compare results of various methods e.g. for Germany in the same period the discrepancy between expenditure and income resulted in an informal economy of 13 % GDP while the transactions approach resulted in 30%; for Italy in almost the same period the discrepancy between expenditure and income gave around 9%, while the cash-deposit ratio gave around 30%, and the transactions approach over 34% GDP.

In the case of our research in Croatia four of the seven methods indicate that the size of the informal economy continuously declined in the second half of the 1990s. The SNA method indicates the most significant reduction in the informal economy, from about 37% of GDP in 1993 to an estimated 7% of the GDP in 2000. The Eurostat method, which could be applied only to 1998 and 1999 because of the lack of data for other years, strongly coincides with the SNA method.

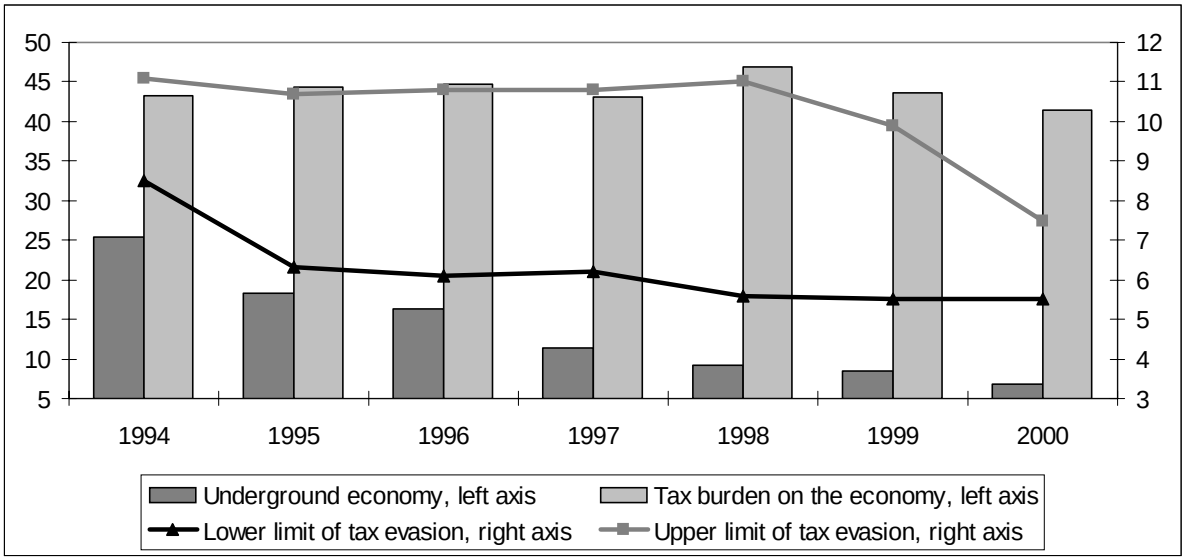
FIGURE 1: ESTIMATES OF THE SIZE OF THE INFORMAL ECONOMY AND TAX EVASION IN CROATIA (% OF GDP)



sake of evading the payment of taxes[2] is a major source of the informal economy in Croatia (Lovrin evi , Mikuli and Nikši -Pauli , 2002).

Figure 2 compares the upper- and lower-bound estimates of the share of tax evasion in GDP with two alternative indicators that are expected to be positively correlated with the size of the informal economy: the size of the tax burden on the economy, defined as total tax revenue of consolidated general government in official GDP; and the estimated size of the informal economy. The tax burden indicator is clearly highly correlated with the upper-bound estimate of the extent of tax evasion, while the estimated size of the informal economy is highly correlated with the lower-bound estimate, thus confirming the initial result. One should note, however, that the lower limit estimate of missed revenue in 2000 (8.6 billion kuna) is still very large - it is greater for instance than the deficit of consolidated general government in 2000 (7.7 billion kuna).

FIGURE 2. COMPARISON OF TAX EVASION AND THE SHARE OF THE UE (% OF GDP)



Source: Madžarevi -Šujster (2002).

In summary, the SNA, Eurostat, and the (upper limit) tax evasion methods indicate that the informal economy in Croatia accounted for about 9% of GDP in 1998 and about 7% in 1999. The similarity of these estimates is in itself a remarkable result – that the three different methods yield almost identical estimates in two consecutive years would hardly seem to be a coincidence.

Yet measures of the informal economy using the ratio of domestic cash and deposits (C/M1), the so-called Gutmann method; the ratio of foreign cash in circulation and domestic monetary aggregate (FCC/M1); as well as the electricity consumption method suggest that the size of the informal economy increased more or less continuously from 1995 to 1999 and subsequently declined in 2000. Again, the three estimates are remarkably similar, but indicate that the informal economy was much

[2] Estimate of tax evasion was given on the basis of selected direct (personal income, surtax and social security contributions, corporate income) and indirect (value added, excise on tobacco) taxes.

larger in 2000, equivalent to about 25% of GDP. We must here stress that measurements with monetary methods in Croatia are in a way problematic because of the short time series and the unsatisfactory statistical basis (more about the shortcomings in Jankov, 1997 and Šoši and Faulend, 2002). Particularly important is that e.g. the Gutman method does not take into account the specific circumstances in a country like Croatia, i.e. experience of hyperinflation and frequent devaluations. As a consequence citizens are apt to turn their free resources into foreign currency and put them into short-term time deposits. This can not be considered real savings, rather

making in the economy, high tax burdens and a non-payment culture are recognized by several authors Kaufman and Kaliberda (1996), North (1997), Vehovec (2001). All these factors became less pronounced in the late 1990s in Croatia and hence point to the decline in the size of the informal economy.

Political repression certainly gradually started to phase out after the end of the war in the mid-1990s.

FIGURE 3. THE UE IN AGRICULTURE, INDUSTRY AND TRADE (% OF GDP)

Source: Mikuli and Madžarevi (2002).

Socio-cultural factors

In addition to macroeconomic and transition-related factors, evidence from research conducted by sociologists from our team also points to conditions that are conducive to reduced role of the informal economy in the late 1990s. Štulhofer and Rimac (2002) start off from the theoretical assumption that the dynamics of social opportunism coincides with the dynamics of the informal economy: the rise in opportunism reduces the moral costs of engaging in informal economic activities, i.e. increases the readiness of individuals to get round or break the standards of economic behaviour. And if such informal activities go unpunished, they may sustain the expansion of opportunism on their own.

Box 2

Socio-cultural dimension of the informal economy

Using "World Values Survey 1995 and European Values Survey 1999 data for Croatia" the authors analyse the dynamics of opportunism and lack of trust in institutions regarding them to be socio-cultural proxies of (the acceptance and volume of) the informal economy, measuring:

opportunism, defined by the extent to which respondents are ready to justify the payment of bribes and the evasion of taxes;

distrust in institutions (the legal system and parliament);

inclination towards *economic traditionalism* defined as preference for

The evidence presented in this paper suggests that, on balance, the size of the informal economy and the extent of tax evasion declined in Croatia in the second half of the 1990s. One should note, however, that changes in the quality and scope of statistics during the past ten years make it difficult to assess the trends in informal economic activity with much certainty. Further research will therefore be necessary to provide better insight into the scope and dynamics of informal activities.

One area that needs to be explored in particular is "moonlighting" i.e. the labour that is not registered for economic reasons (subjects are not registered, so-called T5 in accordance with OECD, 2001) which seems to be an important component of the informal economy according to Lovrin evi , Mikuli and Nikši -Pauli (2002). As the process of transition goes on, we can expect a reduction of the share of "moonlighting" and an increase in the amount of underreporting. This fact could have serious imws T-c dPeclaiTu/ l 1 .o6 f-) t8ah9t ta e rra0 0g 8i swTt 7666]0 .T 6Jax1lo os ffo n0 ia t x

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