

## REFeree REPORT

### REVEALING OF SHADOW PRODUCTION AT THE ENTERPRISE

#### SUMMARY

The paper aims to estimate the shadow output scale at the enterprises producing one or several output kinds.

Author concludes that this method can be useful to audit firms and tax authority as well as to state and municipal authorities.

#### **OVERALL EVALUATION**

The article deals with a literature that focuses on the methods to estimate shadow production. The major shortcoming of the manuscript is that the proposed method needs of an availability of (too) detailed data on the productive process. It makes this system applicable for internal auditing.

The original contribution is poor. This approach is an adapted input-output accounting method applied at the enterprise level.

This method is out of literature on methods to estimate at the (aggregate) level the shadow economy - see Schneider and Enste (2000) for an overview-. Moreover there are not references to contextualize author's approach in the current literature.

#### **COMMENTS**

##### **1) Relevance of the issue**

According to the author, the “*main virtue [of the proposed method] consists in the opportunity of determination of the volume and the level of shadow output at the enterprise (p.1 )*”.

In my view, previous sentence do not reveals the “main virtue” but the only aim that this approach can pursue. It is due to the huge quantity and quality of data required to apply this method.

In other words this estimation method is not suitable without a fair collaboration of the entrepreneur/taxpayer. This circumstance reduces strongly the relevance of this method. From a macroeconomic point of view, it became inappropriate to estimate shadow economy at the aggregate level. From a microeconomic point of view, it can not be applied by tax authorities to discover the size of tax evasion.

The proposed estimation method is inspired by an input-output accounting system rather than an econometric approach. In this sense it seems to me on the border line of an “economic” Journal and more suitable for a Journal of Accounting of Applied Input Output Analysis.

As economist, interested to estimate shadow economy, I do not find any significant contributions (empirical or theoretical) by reading this article.

##### **2) Definition of Shadow economy**

Author uses indifferently term of shadow economy, shadow production or shadow output, but these terms are not synonymous. In order to be able to fully understand the results presented in the paper, the shadow economy (or production) must be clearly defined.

There are numerous definitions available for shadow production so it is essential that the entity being measured be clearly defined and match with the methodology and variables employed in the study.

The author defines the shadow economy rather abstractly: “*There are legitimate per se entities’ economic activities which demand registration, which are not taken into consideration in the official accountancy and which, as a rule, cause decrease in assignments to the budget and to non-budget funds. Such entities’ economic activities are here meant by the shadow economy.*” (p.1).

This definition does not follow international standard definition. To obtain a more accurate definition of shadow output can be useful to refer at the System of National Accounts (SNA93). According to OECD (2002) is better define a “non observed economy”, it comprises all product activities that can be classified into the following three areas:

- (1) Underground production;
- (2) Informal production;
- (3) Illegal production.

According to the OECD standards, the use of the terms: non-observed, underground, informal, illegal, economy is not just a question of nomenclature. They clearly measure different aggregates therefore may require diverse theoretical and empirical methodologies of estimate.

It is not clear if the proposed approach is able to estimate illegal, informal economy or can be useful to estimate tax evasion.

I suggest is to avoid the use of terms “shadow economy” and use (and define) the concept of “shadow output”.

### **3) Inadequate literature review.**

The analysis of the methods to estimate (aggregate) shadow economy is not appropriately discussed in the context of earlier literature. (For an overview see among the others Schneider, Enste, 2000).

The proposed classification in five groups of the methods to estimate shadow economy does not fit to the main literature. It is not a shortcoming *per se* but author should better explain both how his classification method fits better to existing literature and cite some references for each category proposed.

Actually, author cites Bekryashev, Belozyorov (2000) as reference for his classification, but this document is difficult to get. I try to download the article (by reference section: *Bekryashev, A.K., Belozyorov, I.P. 2000. The Shadow Economy and Economic Crime. Omsk: Open Society Institute. <http://newasp.omskreg.ru/bekryash>*) but the link refers to a web site written in Cyrillic

alphabet therefore hard to understand by a not Russian scholar. Anyway it seems to me an unpublished document.

In general, the cited literature is poor (only six references) and not recent (the most recent reference has written in the 2003).

I realize that this paper follows a different approach respects to the existing methods to estimate shadow economy, but it is a further reason to survey the economic literature. It may support the reader (and the referee) to recognize the advantages and relevance of the proposed approach.

#### **4) About the: “Normative-resource method”**

The third paragraph is hard to understand and troublesome to read. It is a long list (about 7 pages) of definitions and symbols. With exclusion of figure 1, there is not a sufficient effort of the author to give a broad view of the method.

In this sense may be useful to present a simplified examples or case studies of this approach.

Moreover, in this section there are several times (p.8 and p.10) indications to a national currency (roubles) that have to be deleted in the manuscript.

#### **5) Conclusions**

The conclusions are not surprising. Author should better specify the circumstances in which the proposed method may be useful to audit firms by tax authorities or it is only for internal auditing.

Author states that this approach was applied “*to reveal the shadow output scale at the rate of 18 tons of the conditional output including meat in live weight and peat-manure compost. This output cost is 46 thousand euro in release prices*”. This sentence has to be deleted if the author does not include details about this analysis (e.g. in an appendix or in a subsection of paragraph 3).

This sentence confirms as this method is relevant (only) at enterprise level and as a internal accounting system.

Conclusively, the paper addresses an interesting issue but it is hard to get excited about arguments and findings.

In my view, the proposed method requires too detailed and structured data to be applicable to different contexts than a single enterprise. In this sense the relevance of findings are relevant mainly for business or accounting disciplines.

#### **References**

Schneider, F., Enste, D. (2000), Shadow Economies: Sizes, Causes, and Consequences, Journal of Economic Literature, 38(1), p. 77-114.