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## The shadow economy beyond European public governance



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### ABSTRACT

The purpose of this paper is to try to analyze the Shadow Economy (SE) and its determinants by means of the Structural Equation Model (SEM)-Partial Least Squares (PLS). The overall topic of the SEM-PLS approach is controversially debated in the literature. In the past decades, the focus on the SE has increased and the range in the estimated size of this phenomenon is very divergent. By examining the effects of a set of indicators, economic theory often emphasizes the need for lower taxes and less regulation, but many other factors, such as administrative quality, are frequently neglected. Policy implications are discussed. Estimates for the SE as a percentage of GDP can be calculated and European countries are clustered according to the obtained results.

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## 1. Introduction

The Non-Observed Economy (NOE) in different countries and regions is a subject that has been and continues to be studied due to its important ramifications for the economy.<sup>1</sup> More precisely, the size of the NOE and what determines its size is a much considered matter (Buehn and Schneider, 2012a; Blades, 2011; Schneider and Enste, 2007; Dell'Anno and Piirisild, 2007). Economists are interested in

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<sup>1</sup> NOE refers to all productive activities that may not be captured in the basic data sources used for compiling NA (Eurostat, 2012). The following activities are included: underground production, informal activities (including those undertaken by households for their own final use), illegal activities and the related statistical estimation problems (OECD, 2002; UNECE, 2008).

the underground sector for several reasons: What are its causes? What is its size and extent? Can economists make policy recommendations on these issues? How can one fix the NOE? The result is that the literature is beginning to come to some agreement on several aspects regarding the crucial factors that might drive or monitor underground activities.

Even though some European Union (EU) states are at the forefront regarding the NOE, it is common knowledge that the lack of exhaustiveness can distort National Accounts (NA) and seriously affect the international comparability of data.<sup>2</sup> In the context of a prolonged crisis in parts of Europe, this question is becoming increasingly important.

Despite the fact that a substantial literature exists on single aspects of the NOE, the subject is still quite controversial. For instance, among the numerous determinants of the Shadow Economy (SE), a few have been identified as relatively more significant than others (Schneider, 2007).<sup>3</sup> On the one hand, the overall tax and social security contribution burdens have been noted to have a large impact on the SE. In the same way, the intensity of regulations reduces the freedom for individuals engaged in the official economy, for example labour market regulations, trade barriers, etc. (Tanzi, 1999; Johnson et al., 1998; Giles, 1999; Fenn and Veljanovski, 1988). On the other hand, the role of public governance needs to be considered, even though it is multifaceted (Hwang and Akdede, 2011). It is not completely clear which government activities aid and abet the SE. Important political decisions have been made based on these estimations.

It is important to underline that various factors have been found to be related to the SE at the global level, including among others the degree of corruption, the lack of a credible legal system, the degree of ethnic fragmentation (Lassen, 2003). For example, the relationship between corruption and the SE is known, even though only few academic papers address this relationship explicitly.<sup>4</sup> The problem is that there are numerous costs associated with corruption. A report by Transparency International (2012) notes that corruption hinders the development of fair market structures and distorts competition. With special reference to SE literature, Hindriks et al. (1999) observed that the more corruption there is, the larger the SE. Likewise, Johnson et al. (1997) present a model in which corruption positively affects the SE in a cross-section analysis for thirty-two OECD countries. On the contrary, Choi and Thum (2005) present a model in which the existence of the SE reduces corruption, making the SE and corruption substitutes.

Directing attention to the methodology for measuring the SE, it is difficult to estimate its size and trend by using a model which catches all the effects that the SE has on production, labour and the money market simultaneously. Recently, several approaches have been introduced by Brambila Macias (2008), Schneider et al. (2010), Buehn and Schneider (2012b), Elgin and Oztunali (2012), and Orsi et al. (2012). Schneider and Enste (2007) give a comprehensive overview of the approaches to estimate SE activities. Some of these approaches have been criticized by Breusch (2005a, 2005b) and Ahumada et al. (2007), while some researchers (e.g. Dell'Anno and Schneider, 2006) validate the general goodness of fit against the mentioned critique.<sup>5</sup>

The purpose of this paper is to address the knowledge of methods to estimate the SE by applying a similar estimation technique to that used by Ruge (2010, 2012) in various ways. Firstly, the authors propose the Structural Equation Model (SEM)-Partial Least Squares (PLS) to estimate the SE, while in the existing literature the SEM-LISREL approach is largely predominant. The authors reconsider the

<sup>2</sup> It should be noted that there is no unique standard method which is applied internationally. Several methods or combinations of methods are usually applied to the NOE depending on the characteristics of each country.

<sup>3</sup> Following Schneider et al. (2010, pp. 4–5) and Buehn and Schneider (2012a, p. 141; 2012b, p. 5), in this paper a more narrow definition of the SE is used: “The SE includes all market-based legal production of goods and services that are deliberately concealed from public authorities for the following reasons: (1) to avoid payment of income, value added or other taxes, (2) to avoid payment of social security contributions, (3) to avoid having to meet certain legal labour market standards, such as minimum wages, maximum working hours, safety standards, etc., and (4) to avoid complying with certain administrative procedures, such as completing statistical questionnaires or other administrative forms”. Alternative definitions of the SE appear in Smith (1994, p. 4).

<sup>4</sup> The most general definition of corruption is: “the abuse of public power for private gains”. The World Bank provides a narrower description: “[corruption] distorts the rule of law, weakens a nation’s institutional foundation, and severely affects the poor who are already the most disadvantaged members of our society”.

<sup>5</sup> Even though this introduction refers to various articles from the literature, it does not review the literature comprehensively.

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