The Portuguese Non-Observed Economy: Brief Presentation

Note: this document presents a summary of the research developed by Nuno Gonçalves, under the orientation of Oscar Afonso, both members of the *Observatório de Economia e Gestão de Fraude* (OBEGEF). The complete version of the study will be published soon as an e-book and will be available at the OBEGEF's web page.

In all countries of the world there is a part of the economy, let's call it the Non-Observed Economy (NOE), whose activities are not reflected in national accounts, and its size, causes and consequences differ from country to country.

Although substantial literature exists on single aspects of the NOE the subject is still quite controversial as there are disagreements, for example, about the definition and estimation procedures. Nevertheless, the fact that the NOE is a growing phenomenon appears to be a widespread conclusion. This phenomenon has received increasing attention in the economic literature, mainly due to its relevance to macroeconomic policy.

Studies on the NOE in Portugal and estimates of its size are scarce. This study aims to take the first steps in estimating the NOE in Portugal, but following the methodology presented in the existing studies. Thus one must be aware that the results will reflect the problem assigned to the various studies on the subject: underestimation of the NOE.

What is the NOE?

A difficult though important step in the study of the NOE is to present a definition of the phenomenon under evaluation. It is a difficult task to define correctly the NOE (i) because of the complexity of the phenomenon, (ii) because it is a reality in constant development, and (iii) because it incorporates several economic activities – according to an OECD report, from 2002, it includes illegal economy, unreported (hidden or underground) economy, informal economy, household production for own final use and the economy missed due to statistical deficiencies. This OECD report was based on the System of National Accounts (SNA93) and on the European System of National Accounts (ESA95), since, according to the SNA93 and ESA95, the use of the terms illegal, underground, informal, missed, is not a simple matter of nomenclature.

The broader definition of NOE in the sense that it can cover all the sectors emphasized by the OECD is the one that encompasses all economic transactions that contribute to GDP, but which for various reasons are not taken into account.

However, mainly due to the dynamism and complexity of the phenomenon and to the available data, the current studies generally consider as NOE only one or some of the components, and thus end up significantly underestimating the object of study. Indeed, it seems that the activities of NOE particularly emphasized by several studies are related to underground production.

Why is it important to study of the NOE?

The NOE distorts significantly the measurement of macroeconomic variables, so policies based on such statistics tend to be inefficient. From an economic policy point of view, there are four types of effects of the NOE on the official economy: allocation, distribution, stabilization and impact on public revenues.

The allocation effect is related with economic growth. The NOE distorts competition because firms (and individuals) that operate in official economy support, for example, taxes and social security contributions, facing this way a higher operating cost. When firms in the official economy cannot provide goods and services at competitive prices compared to those in the NOE, they might record profit losses and eventually exit the market. Thus, the resource allocation is not efficient because an increase in the NOE's supply, imply a loss in the official economy. There are, however, who considers that if, on the one hand, the reduction in demand for goods and services produced in the official economy is compensated with an equivalent increase in demand in the NOE and if, on the other hand, the NOE use the same factors to produce goods and services that the official economy, then the impact on overall economic activity will not be negative. This point of view is valid only in the short term.

It can be also considered that, given the price difference, the shift in demand from the official economy to NOE leads to an increase in disposable income of the economic agents. If this increase is saved, it will lead to an increase in capital stock in the economy; if consumed it results in an increased demand for goods and services. The value generated in the NOE can be reintroduced in the official economy, diluting the effect of transferring resources from the official economy to the NOE. Under this perspective, the positive or negative effect of the NOE in economic growth depends on the percentage of the reintroduced income. But it will always be accompanied by an increase in money laundering (perhaps financing terrorism).

The distribution effect is associated with tax evasion. Tax evasion has effects on income distribution by distorting the redistribution function of the state. Faced with the falling of tax revenues, a government must reduce the public spending (in social transfers) or increase the tax burden in some sectors of the population. Thus, the NOE tends to increase the unequal distribution of income. There may be some counter-trend with minor impact: low-income households can obtain additional income and thereby improve their living standards operating at NOE.

In stabilization effect it is asked if the NOE strengthens economic activity or whether destabilizes it by introducing volatility to the economy. Since the activities of the NOE are not taken into account in the statistics and official economic indicators, it makes these indicators biased, influencing economic policy decisions that may become inadequate.

It is usually assumed that the growth of the NOE reduces public revenues and therefore the efficiency in providing public goods and services, although some authors admit some countertrend. This reduction might be true in the short term and when the activities of the NOE replace completely those in the official economy. Thus, the impact of the NOE in public revenues in the short-term depends on the complementarity and substitutability between the official economy and the NOE.

Depending on the economic context and to some extent, the culture of a country, the NOE arise and adapts to the constraints imposed by regulatory institutions. In order to identify the causes behind the NOE, it should be questioned the motivation of economic agents and to this purpose, identified the associated costs and benefits.

As major causes of the growth of the NOE are identified inter-related factors such as: the increasing tax burden and social security contributions; the increasing regulation of the official economy (especially the labour market); the unemployment; the social transfers; the public sector services; the low level of human capital in the economy; the labour force composed by illegal immigrants; the lack of culture and civic participation; environmental reasons; the lack of credibility of the authorities due to the conduct of some of its representatives; the inefficiency of public administration and lack of transparency in public services; the market conditions created by globalization of markets and production; and low productivity. The increase in fraud, the importance of offshore bank accounts and the influence of international mafias are other causes of the NOE.

Corruption also contributes to the formation of the NOE, but the relationship is still not clear at all in literature, in particular its complementarity and substitution.

The costs and benefits of the passage of economic agents (on both the demand and supply) to the NOE can be identified as the rising costs of acting in the official economy (e.g. due to the increase in tax burden, contributions to social security and legislation); the lower costs of operating in the NOE (e.g., due to unemployment or underemployment within the official economy), and the rising costs of operating in NOE due to the expectation of punishment by regulators.

Particularly for the growth of the underground production and illicit labour, the existing economic literature on the subject suggests that two groups are the dominant causes: the direct and indirect taxes (taxes and social security contributions) and restrictions (laws, licensing, regulation and barriers).

The presence of the NOE is part of our daily lives. Knowing its amount and evolution (NOE index) is therefore essential.

How to estimate the NOE?

The NOE is a complex phenomenon that is not observed, and as such is difficult to measure. Attempts directly to estimate the size of the NOE are made through statistical surveys of households and individuals, through audits of company accounts, comparisons of surveys of income and expenditure of families, analysis of income statements and external signs of wealth. However, the accuracy of the results depends on how the survey or investigation is undertaken and on the cooperation and goodwill of the respondents, who may not want to admit but to conceal their involvement in illegal or fraudulent practices, so this approach tends to be inaccurate. So the question arises: how does one measure the "invisible"?

By OECD (2002) a distinction is made between three groups of statistical and econometric methods: (i) monetary methods, (ii) global indicator methods, and (iii) latent variable method(s). Each method has its specific strengths and weaknesses. This work studies the NOE in Portugal using the latent variable method. Despite the latent variable method having some limitations in estimating the size of NOE, it is the only one that takes into account multiple causes that lead to the existence and growth of NOE and multiple NOE indicators over time. This method is usually referred to as the MIMIC (Multiple Indicators Multiple Causes) model.

The variables used in this study as causes and indicators of NOE were therefore determined by taking into account the theory and the data available for Portugal. One can distinguish between three types of causes: (i) Tax burden – weight of direct and indirect taxes

and contributions to social security on GDP; (ii) Regulation burden – weight of government consumption on GDP; (iii) Labour market evolution – percentage of self-employed in the total labour force and unemployment rate.

Moreover, a change in the size of the NOE can be reflected in the following indicators: (i) currency in circulation outside banks; (ii) Labour force participation rate; (iii) GDP.

Index of NOE in Portugal

Based on MIMIC models it was computed an index to determine the size of the NOE (as % of GDP) in the period 1970-2009. The results are summarized in Table 1.

Table 1: the Portuguese NOE (as % of official GDP), 1970-2009

Year	1970-73	1974-78	1979-83	1984-88	1989-93	1994-97	1998-01	2002-05	2006-08	2009
NOE/GDP	9.6	14.9	17.3	17.6	18.1	20.0	20.5	22.0	22.4	24.2

Graph 1 shows the evolution of the average NOE for the period 1970-2009. As can be seen in this chart the weight of NOE in official GDP increased from 9.3% in 1970 to 24.2% in 2009. After the rise recorded in the period 1974-1981, NOE showed a stabilization trend at around 17.5% in the subsequent period (1982-1990), even registering a small reduction. In the period 1991-2005 the NOE reveals an average annual growth rate of 1.57%. Despite the smooth fall observed during 2005-2007, from 2008 there was again a growth pattern, and in 2009 NOE reached the highest value of the entire period under study, 24.2% of official GDP.

**Graph 1:** the Portuguese NOE as % of official GDP 1970-2009
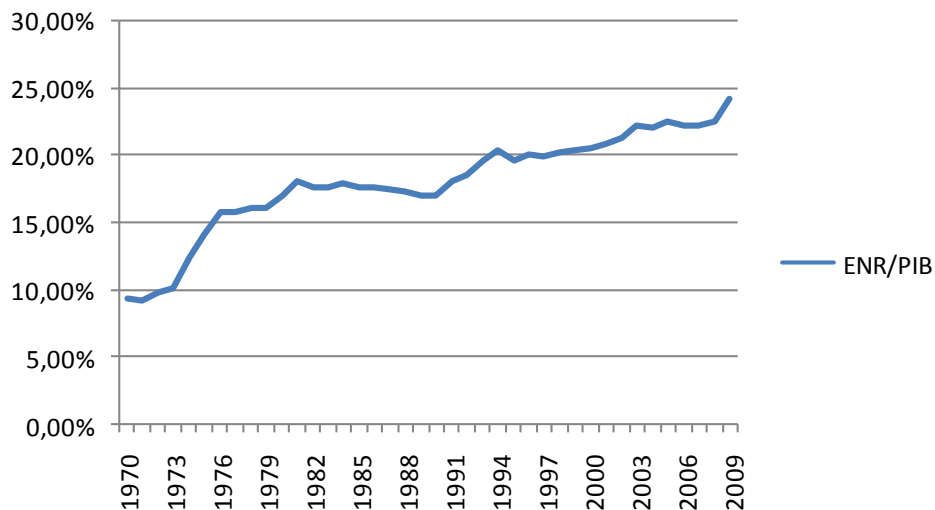
Using MIMIC models it was estimated the NOE disaggregated in economic sectors for the period 1998-2009, quarterly.

For that purpose the economy is disaggregated into three main sectors:

(i)   Agriculture – agriculture, forestation and fishing;

(ii) Industry – electricity, gas, steam and water, industry and construction;

(iii) Services – commerce, restaurants and hotels, transportation, mail and communications, banks, insurance and real estate and other services.

One should be conscience that, despite the limitations imposed by the availability of data from economic sectors and by the MIMIC model itself, there is still the limitation imposed by fact that this is the first study that try to estimate the NOE by economic sectors in Portugal. Therefore, the results of this study suffer from some lack of calibration and will be developed in further research. In a provisory base, the achieved results are presented in Graph 2, 3 and 4.
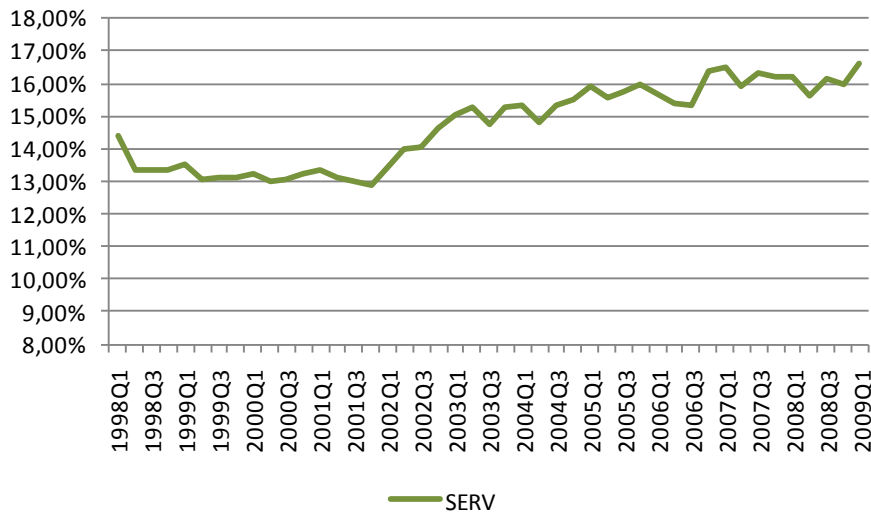
Graph 2: the NOE in agriculture, as % of official GDP

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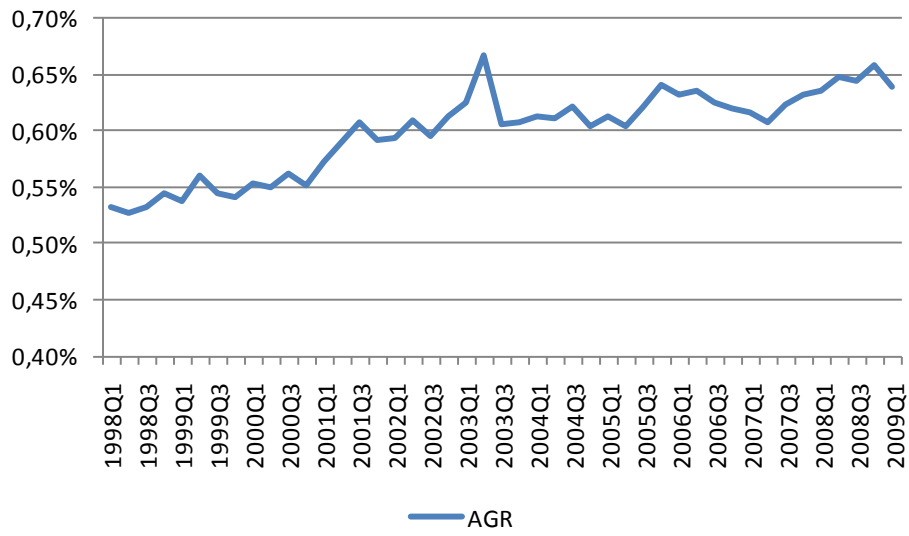
Graph 3: the NOE in industry, as % of official GDP
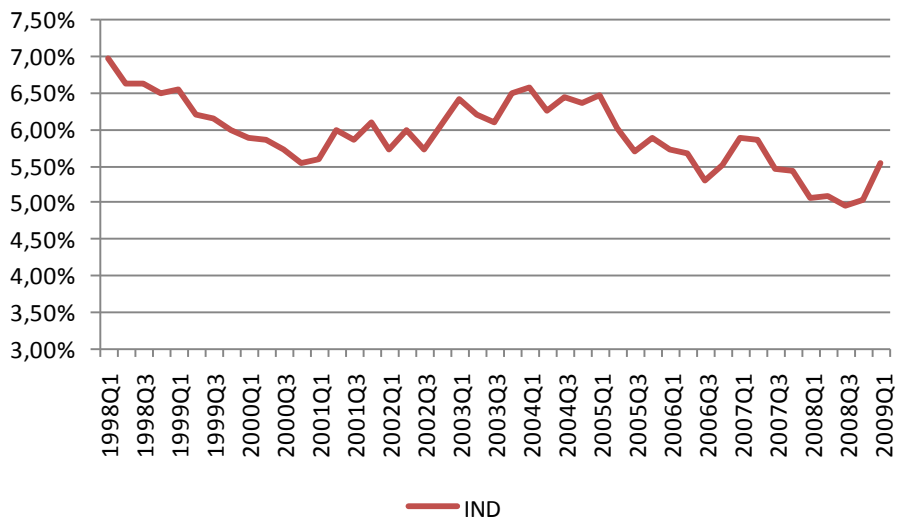
Graph 4: the NOE in services, as % of official GDP

In general, the graphs show a growth pattern of the NOE (as % of GDP) in agriculture and services sector, while in industry, in most part of the period in study, it appear to exist a fall in NOE.

This study aims to make a contribution to a better understanding of the NOE in Portugal, using, in line with the dominant literature on the subject, MIMIC models. The results can be summarized in the following conclusions:

i)   The proportion of NOE in the official GDP has increased from 9.3% in 1970 to 24.2% in 2009.

ii)   The activities of the State, reflected in the weight of taxes and contributions to social security on GDP and in the benefits transferred to households and firms, along with the unemployment, are the major causes that contributes to the formation of the NOE.

iii) In the first quarter of 2009, by economic sectors, are observed the following values of the NOE as % of GDP: 0.6% in agriculture, 5.5% in industry and 16.6% in services. For the period 1998-2009, the results show a rise of the NOE in agriculture and services, and a fall in industry.

The NOE values obtained should be read as an approximation rather than an exact value due to the limitations imposed by the MIMIC model and available data. Therefore, more important that determine with accuracy the size of the NOE, this work pretends to evidence the evolution or path of the NOE in the period 1970-2009.