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GROUP OF EXPERTS ON NATIONAL ACCOUNTS

UNDERGROUND ECONOMY AND VAT FRAUD IN NATIONAL ACCOUNTS

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Introduction

- NOE is pervasive in Italian economy
- In 2019, NOE amounts to 202.9 billion euros, 11.3% of Italian GDP
- Underground component of NOE is 183.4 billion euros (10.2%)
- Illegal component of NOE (drugs trafficking, prostitution and smuggling) is 19.4 billion euros (1.1%)
- From 2014, the incidence of underground economy is lowered by 2 percentage points (from 13.4 to 11.4% of total value added) because of the introduction of peculiar contrast policies (e.g. electronic invoicing, review of sector studies)

Introduction

- In Italian National Accounts underground economy is measured separately for each component (under-reporting, value added for un-registered workers, VAT fraud)
- **Under-reporting** is measured starting from an identification and adjustment of business units at micro level (different approaches, e.g. Reference Income method, Behavioural models, are used for different typologies of firms)
- **Value added from un-registered workers** is measured within statistical strata (4-digits NACE and size class), considering both employees and self-employed
- **VAT fraud** is calculated by using underground value added as tax base, and by applying VAT rate by typology of transactions
- Each component is estimated so as to avoid any possible overlap (the total value of under-reporting can be obtained as the sum of them)
- Each component is broken-down into SUT disaggregation by product and economic activity, and by institutional sector for ASA

Under-reporting of value added | Overview

- Under-reporting of value added is the largest component of under-ground economy in Italy
- Measurement is based on micro-identification and adjustment of business units, starting from the Frame-SBS Archive, a mixed admin-survey database covering economic and structural information about the whole population of 4.4 million of Italian firms
- The procedure for measuring under-reporting is composed by three stages
 - Definition of the population
 - Procedure for micro-enterprises (Reference Income Method)
 - Procedure for other business units (Behavioral Models)

Under-reporting of value added | Definition of population

- The first stage is devoted to break-down the whole population of business units into homogeneous classes with the aim of having a good matching between typologies of firms and methods
- In particular, five classes are defined:
 - Non treatable units (e.g., MNEs, Firms over 100 workers, M&A, regulated markets, PA, start-ups)
 - Micro-enterprises (self-employed, no capital)
 - Small firms (1-5 workers in services, 1-10 workers in industry)
 - Organized firms (5-99 workers in services, 10-99 workers in industry)
 - Firms belonging to domestic groups (independently from the size)
- In 2019, **470K** are Non-treatable, **1.2M** are Micro-enterprises, **2.2M** are Small firms, **249K** are Organized firms, **63K** are Firms belonging to domestic groups

Under-reporting of value added | Micro-enterprises

- Under-reporting of value added for **micro-enterprises** is identified and adjusted by using the Reference Income Method adjusted to account for:
 - Difference in working hours between employee and self-employed
 - Sector-specific elements
 - Business cycle
- Reference income is represented by the average (or maximum) wage of employees within statistical strata defined using Regression Trees over a set of structural characteristics (gathered from Social Security database)
- Reference income is adjusted to account for different working hours between employees and self-employed (gathered from LFS). Reference income is adjusted for sector-specific elements and business cycle by using Fixed Effect Panel models
- The amount of under-reporting is defined by the difference between the adjusted reference income and the declared value added of micro-enterprises

Under-reporting of value added | Other typologies

- Under-reporting of value added for **Small firms, Organized firms** and **Firms belonging to domestic groups** is identified and adjusted by using behavioral models
- Each typology is further broken-down in homogeneous statistical strata in term of economic activity, size class and territory
- For each strata, a given set of economic and structural indicators is selected in order to describe the economic behavior of business units
- A proxy of suspect of under-reporting is defined for each strata according to the value of profits of each business unit with respect to average of the strata
- ROC analysis is used to define the threshold that distinguishes, starting from the proxy of suspect and considering a composite indicator summarizing the set of economic characteristics, under-reporting and non under-reporting business units
- For each under-reporting units, the value of under-reporting is given by the amount of value added the given business units must have in order to be on the threshold (and thus classified as non under-reporting)

Value added from un-registered workers | Overview

- The measurement of un-registered workers (in terms of FTEs) is obtained by comparing administrative database and LFS by 4-digits NACE and size class
- This procedure allows to estimate both black and grey FTEs for both employee and self-employed
- The value added connected with the use of un-registered workers is separately obtained for the following components:
 - Compensation of un-registered employees
 - Mark-up of employers on un-registered employees
 - Compensation of un-registered self-employed

Value added from un-registered workers | Measurement

- **Compensation of un-registered employees** are estimated starting from the compensation of registered employees (by strata in 4-digit NACE and size class), net of social security), adjusted for the salary gap between registered and un-registered workers gathered from LFS
- **Mark-up of employers on un-registered employees** is estimated (by strata in 4-digit NACE and size class) taking into account the average mark-up gathered from Frame-SBS Archive considering the (possible) adjustment for under-reporting
- **Compensation of un-registered self-employed** is obtained (by strata in 4-digit NACE and size class) taking into account the average value added-to-self-employed ratio gathered from Frame-SBS Archive considering the (possible) adjustment for under-reporting

VAT fraud | Overview

- Only VAT fraud without complicity has to be included in GDP and GNI
- Both VAT fraud with and without complicity are measured
- VAT fraud (both components) is measured by considering:
 - Underground value added (under-reporting + value added from un-registered workers) as the tax base
 - The VAT rate gathered by the VAT database from Italian Revenue Agency
 - The distinction between B2B and B2C transactions
- VAT fraud (both components) is measured by applying the VAT rate to the underground tax base:
 - At micro-level for under-reporting
 - At 4-digits NACE and size class for value added from un-registered workers

VAT fraud | Measurement

- In order to distinguish between VAT fraud with and without complicity, the following assumptions and corrections are done:
 - VAT fraud with complicity is generated by B2B transactions, except some quote gathered from electronic invoicing by Italian Revenue Agency
 - VAT fraud without complicity is generated by B2C transactions, except some specific sectors (e.g. constructions, health services ...)
 - Value added from un-registered employees (both remuneration and mark-up components) are the tax base of VAT fraud with and without complicity according to the B2B and B2C assumptions
 - Value added from un-registered self-employed are by definition with complicity because of they are un-registered enterprises without any VAT number

Results

- Total under-reporting in 2019 is 80.3BN euros, with the following break-down:
 - Micro-enterprises account for 17.4BN euros (21.7%)
 - Small-firms account for 41.5BN euros (51.6%)
 - Organized-firms account for 17.4BN euros (21.7%)
 - Firms belonging to domestic groups account for 4.0BN euros (5.0%)

- Total value added from un-registered workers in 2019 is 68.9BN euros, with the following break-down:
 - Remuneration of un-registered employees is 26.4BN euros (38.3%)
 - Mark-up of employers on un-registered employees is 10.1BN euros (14.7%)
 - Remuneration of self-employed is 32.4BN euros (47.0%)

- Total VAT fraud in 2019 is 25.0BN euros, with the following break-down:
 - VAT without complicity (added to GDP and GNI) is 5.0BN euros (20.0%)
 - VAT with complicity is 20.0BN euros (80.0%)

Measurement of IFFs in the context of SDGs indicators

- SDG 16.1 claims for *Significantly reduce illicit financial and arms flows, strengthen recovery and return of stolen assets, and combat all forms of organized crime*
- SDGs indicator 16.4.1 measures the *Total value of inward and outward illicit financial flows*
- **IFFs** are defined for statistical purposes as *Financial flows that are illicit in origin, transfer or use, that reflect an exchange of value and that cross country borders*
- UNODC and UNCTAD task force developed a statistical framework for measuring IFFs which has been endorsed by the UN Statistical Commission in 2022
- This conceptual framework allows to distinguishes IFFs into two classes which are coherent with international accounting schemes (i.e. SNA and BoP):
 - **Income generation**, when IFFs are generated by economic operations related to the generation and distribution of income
 - **Income management**, when IFFs are generated by economic operations related to the use of income (consumption and investments)

Measurement of IFFs in the context of SDGs indicators

- UNODC and UNCTAD are developing guidelines in order to:
 - Classify different activities that may generate IFFs (i.e. illegal markets, tax and commercial practices and corruption)
 - Provide different methods to measure different typologies of IFFs within the statistical framework
 - Define an aggregation scheme in order to estimate the final amount of IFFs avoiding possible overlap and making the measurement coherent with international accounting standards (i.e. NA and BoP)
- In 2023 there is the possibility of a global project on measuring IFFs managed by UNODC and UNCTAD, as indicator custodians, and regional Commission
- UNECE countries may join this effort and test some of the methods in the guidelines in order to have an advanced statistical capacity to apply, refine and develop some of the most sophisticated methods

Thank you.

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