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“THE ROLE OF THE TAX ADMINISTRATIONS IN THE GLOBAL CRISIS”

Topic 2.3

**USE OF THE RESULTS OF TAX GAP MEASUREMENT FOR STRUCTURING THE
RISK MAP AND DESIGNING CONTROL PLANS**

Italian Tax Administration

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Summary

The mission of the Italian Tax Administration is to maximize taxpayers' compliance with tax obligations. In planning the strategy inherent in fulfilling its mission, it is necessary to adopt appropriate methodologies to estimate potential collection, i.e. the maximum collection enabled by current tax legislation¹.

Tax evasion is the most critical factor accounting for the gap between potential collection and effective collection. This paper analyzes the calculation sources and methods adopted by the Administration, setting forth the uses of this indicator as a parameter to schedule activities. The Administration has followed the top-down approach, chiefly based on comparing the tax data to national account aggregates.

Tax evasion, the typical underlying variable that is complex to assess, calls for the use of several independent calculations to undertake a reliability analysis based on the observation of the results attained. Rather than an end, this paper is the beginning of future developments, as presented in the conclusion.

1. Introduction.

The Italian Tax Administration's (hereinafter, the Administration) activity is ruled by an agreement with the Ministry of Economy and Finance. Such agreement establishes the objectives to be met and the resources required to do so. The objectives are referred to the activities we shall pursue (number of controls and services rendered) as well as the collectible amounts following tax controls.

Knowing the objectives is relevant in fulfilling the Administration's mission, namely to maximize taxpayers' compliance with tax obligations.

In order to plan the strategy, face the potential risks and foresee the criticalities tied to the fulfillment of the mission, we must rely on appropriate methodologies to estimate potential collection, defined as the maximum collection enabled by current tax legislation². In other words, "potential collection is that which would be collected if no taxpayer would voluntarily breach the law and involuntary errors would amount to zero³".

The most critical factor explaining the gap between potential collection and effective collection is evasion, which stands as the main aggregate by which the Tax Administration's performance should be assessed⁴.

¹ Sevilla Segura (2006).

² Sevilla Segura (2006).

³ Das-Gupta, Mookherjee (2000).

⁴ Viol (2006).

The objective of this paper is to present the sources and the calculation methods adopted by the Administration to estimate tax evasion as the missing portion of the tax potential, setting forth the uses of such indicator as a parameter to schedule the Administration's activities, making the most efficient use of the finite resources available. Numerous publications are available on the possible methods to calculate evasion⁵. The Administration undertakes the top-down approach, chiefly based on comparing the tax data to national account aggregates.

The following measurements are especially considered: the underground value added, estimated by the Italian National Statistics' Institute (ISTAT, as per the Italian acronym) and two evasion estimations based on the VAT and the Regional Tax on Productive Activities (IRAP, as per the Italian acronym).

The calculation of the underground sets the general benchmark framework, VAT evasion follows an approach based on the exchange of goods and services (demand-side) and the IRAP is a proxy of the gap existing in the business profit-earning process (supply-side).

For the Administration to apply it clearly, we must first define the benchmark framework of the three indicators with respect to the taxable amount and the applicable potential collection:

1. The comparisons based on the aggregates of National Account expenditures and the resources account (GDP, Final Consumption, etc.) comprise the transactions recorded on the businesses' profit and loss account and exclude the net worth status; therefore, the calculation of tax evasion from the collection amount is incomplete, since it fails to comprise evasion arising from changes in net worth;
2. The national account system provides a reliable indication of the potential profit and not the subsequent tax; thus, we recommend comparing with the tax data on the taxable amount rather than on the tax potential;
3. From item 2, we may infer that all evasion types arising from an incorrect tax statement with a tax base that was filed correctly are excluded from the estimations (such as the application of a VAT rate different from the actual one).

Despite such limitations, the comparison with the national accounts' system data offers a wealth of information, since profit earning is the time of wealth creation of the country from which all the forms of taxation originate, directly or indirectly. On the other hand, tax evasion based on total or partial concealment of the tax base accounts for the most relevant form of tax evasion, since it is the most difficult one to identify.

For evasion indicators to have operating relevance, they are broken down to comprise type of tax (VAT, IRAP), economic sector, geographical area and taxpayer type.

The paper is structured as follows: the second item is aimed at informing on the methodology and the sources to calculate the underground value added employed by

⁵ For a summary, refer to OECD (2004a, 2008).

the ISTAT, the subsequent item discusses VAT and IRAP tax evasion and, finally, it presents a number of conclusions and references to future papers.

2. The underground value added.

Since 1993, the United Nations System of National Accounts (UNSNA) establishes that the national accounts estimations shall also include the informal economy. The informal economy includes different groups of activities; this paper shall focus on the underground economy, defined as: "legal productive activities that are not registered mainly due to a deficiency of the statistical data collection system or to economic reasons; that is, the will to avoid the tax and social contribution obligations in order to reduce production costs⁶". Therefore, the national statistics' institutes rely on methodologies that enable them to estimate and include the underground economy in national account aggregates⁷.

Within the underground economy, the ISTAT isolated the item that statistics fail to record owing to the economic underground⁸, which represents the legal productive activity which nevertheless escapes direct observation because of its connection to tax evasion⁹. The ISTAT applies the Labor input method (LIM) approach because the elements of the GDP are obtained by expanding into the universe the per capita data obtained from the studies undertaken in businesses through the employed labor input (measured in terms of Full Time Equivalent Unit, FTE).

To summarize, the estimation-development process is based on the following phases:

- a) Calculation of the total FTE considering the registered component (regular) and the non-registered one (irregular), the total regular and irregular FTE constitutes the national accounts' benchmark universe;
- b) Based on the studies performed in businesses, we may calculate the per capita values for output, intermediate costs and value added, with the possibility of correcting them as required, whether based on an invoice understatement or a cost overstatement;
- c) By multiplying the result obtained in b) by the FTE set forth in a), we obtain a preliminary supply estimation (GDP);
- d) The estimation of c) is part of an Input-Output system that compares with demand-side estimations (consumption, investment, etc.), since individuals are less reluctant to file the data on expenses than on income earned, the demand data exceed the supply and, based on such discrepancy, the new GDP correction is applied.

Therefore, from a theoretical standpoint, the ISTAT estimations capture the concealment of the total added value produced (based on the estimation of irregular

⁶ For a more in-depth analysis, refer to OECD (2002).

⁷ For a summary on the international methods employed, refer to UNECE (2008).

⁸ Baldassarini, Pisani (2000).

⁹ Always considering the caveats presented in the introduction.

FTE) such as partial concealment arising from an invoice understatement or an exaggerated cost overstatement (items b and d).

The ISTAT regularly published the measurements of the economic underground¹⁰. Based on the latest data available, we may infer that in 2006, 16.9% of the GDP was produced by the underground sector (Figure 1). Likewise, 38% of the underground economy results from the employment of irregular labor and the remaining 62% is concealed with other methods. On the other hand, we may obtain a measure of the phenomenon by macro-sectors of activity (Figure 2), from which we infer that 80% of the underground comes from services, 17% from industry and the remaining 3% from agriculture. The small percentage figure of agriculture is based on the fact that this sector has very little impact on the GDP, and thus, although marked by high evasion rates, represents a marginal share of the underground economy.

¹⁰ For more updated estimations, refer to ISTAT (2008).

Figure 1. Breakdown of the GDP based on the economic underground and its components

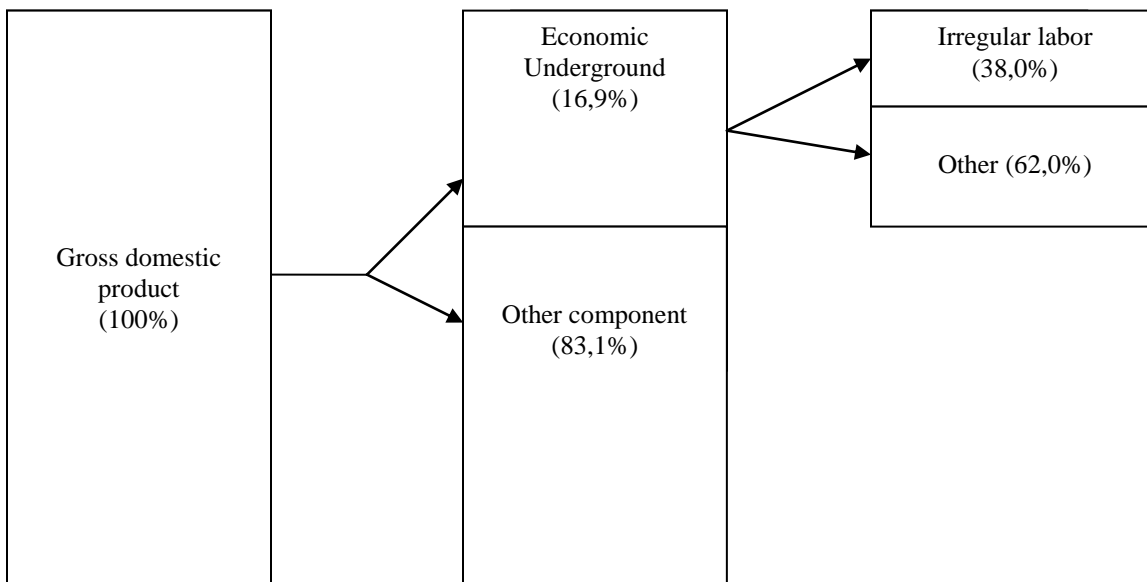
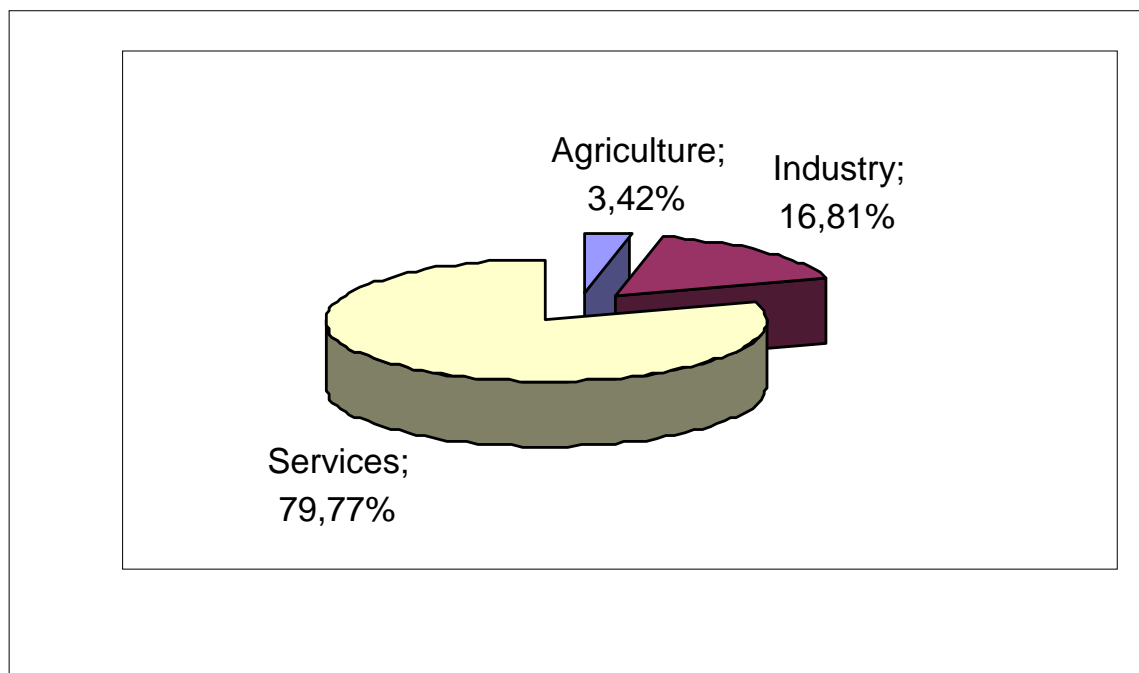


Figure 2. Breakdown of the economic underground by sector of economic activity



Source: ISTAT

Therefore, the ISTAT estimations of the economic underground only provide the general benchmark framework of the potential taxable amount, but also suggest potential general guidelines on which to focus control activities (informal labor, etc.) and focus attention towards the macro-sectors posing highest risk.

Based on such features, the Administration employs the regional GDP calculated by the ISTAT as the indicator to assign the monetary recovery objectives that each regional office¹¹ undertakes to attain in the budgetary allocation phase for the activities.

3. Estimation of evasion of taxable amounts.

The ISTAT information of the economic underground, although a relevant benchmark factor, fails to fully meet the Administration's need. Firstly, because the value added, to the extent it is an elementary unit of national wealth, represents an indirect indicator that excludes the regulatory specificities vis-à-vis the assessment of the tax bases.

On the other hand, we may actually observe that the evasion rate of the income produced may not be truly significant if it is tied to the tax bases stemming therefrom. Such differences may be due to: norms that regulate the assessment of the different tax bases, the degree of complexity of the obligations tied to the specific tax¹², the degree of difficulty in concealing certain types of taxes compared to others¹³.

On such grounds, the Administration conducts its own tax evasion estimations, diversified by type of tax.

3.1 Value Added Tax.

Tax compliance may be better analyzed when considered from the VAT approach. In fact, although it fully affects the end consumer, its transfer mechanism in the different stages of the productive and commercial chain makes it a "central" tax in the overall tax behavior. Many of the figures of tax evasion (concealment of the overall productive chain, understatement of income, overstatement of costs and/or accounting of inherent costs) are generated by a reduction of the VAT base.

The methodology adopted by the Administration accounts for the adjustment to the Italian reality of a method that is widely spread internationally, based on national account data¹⁴. The Italian approach is centered on the assessment of the potential VAT base, obtained by changing national accounts' flows to match them with the tax regulations.

¹¹ The agency is articulated across the territory in 21 regional offices.

¹² Androni et al (p. 852), Christie, Hozner (2006).

¹³ Viol (2006).

¹⁴ Nam et al. (2001), HM Custom and Excise (2004), HM revenue and Custom (2006), Reckon (2008, 2009), in the case of Italy, refer to Marigliani, Pisani (2006).

Pursuant to the notions set forth in Reckon (2007), two tax evasion definitions are adopted: “not remitted” and “not collected” VAT base.

The first one (not remitted - without complicity) considers that there is no complicity between the selling party and the buying party and, therefore, tax evasion is materialized because the selling party fails to remit the VAT applicable.

The second one (not collected - with complicity) measures the tax base and the tax that the selling party did not invoice to the buying party by virtue of a mutual agreement; tax evasion is thus materialized by the selling party's failure to invoice.

The example in Chart 1 clarifies the difference between both behaviors. Chart 2 assumes three types of transactions between a selling party and the end consumer, who share the same VAT base of € 1,000. On the other hand, it entails a single tax rate amounting to 20% and the absence of costs deductible from the invoiced tax.

Transaction 1 is not affected by evasion, therefore, the selling party invoices VAT for a €200 amount, which is subsequently paid to the tax authority. On the national accounts, the amount registered in the consumption of families is € 1,200.

Transaction 2 assumes an agreement between the selling party and the buying party, according to which the former accepts an informal payment amounting to € 1,000, without the corresponding invoiced or remitted tax. On the national accounts, the amount registered on the consumption of families is € 1,000.

Transaction 3 does not feature an agreement between the selling party and the buying party; therefore, the former invoices the latter € 1,000 for the tax base + € 200 for VAT, but fails to deposit the money with the tax authority. On the national accounts, the amount registered on the consumption of families is € 1,200.

Table 1. Example of 3 types of transactions considered in VAT estimation (VAT rate=20%)

ID.	VAT base	VAT invoiced	VAT actually remitted	National accounts' figures	Economic behavior
1	1,000	200	200	1,200	No evasion
2	1,000	0	0	1,000	Evasion with complicity
3	1,000	200	0	1,200	Evasion without complicity
Total	3,000	400	200	3,400	

Chart 2 describes the way in which the transactions reported on Chart 1 are reflected on the evasion estimations. The base premise is the end consumption on the national

accounts, amounting to € 3,400, which includes an actual VAT remittance amounting to € 200. This premise is related to the tax statements featuring a € 1,000 VAT base and a VAT remittance amount of € 200. Evasion, which is unknown in the aggregate, is € 2,000 for the base and € 400 for VAT.

If we assume that evasion occurs with complicity, we must subtract the actual VAT remittance (€200) from the National Account premise (€ 3,400), thus obtaining a potential base of € 3,200, € 1,000 of which have been filed and € 2,200 evaded. In this case, we overestimate the tax base evasion (€ 2,000).

Table 2. Impact of the different kinds of fraud on estimated tax evasion

N.A. figures: Final consumption = 3,400 of which: VAT actually remitted = 200
 VAT return: VAT base 1,000; VAT=200.
 Effective evasion (not observable): VAT base = 2,000; VAT = 400.

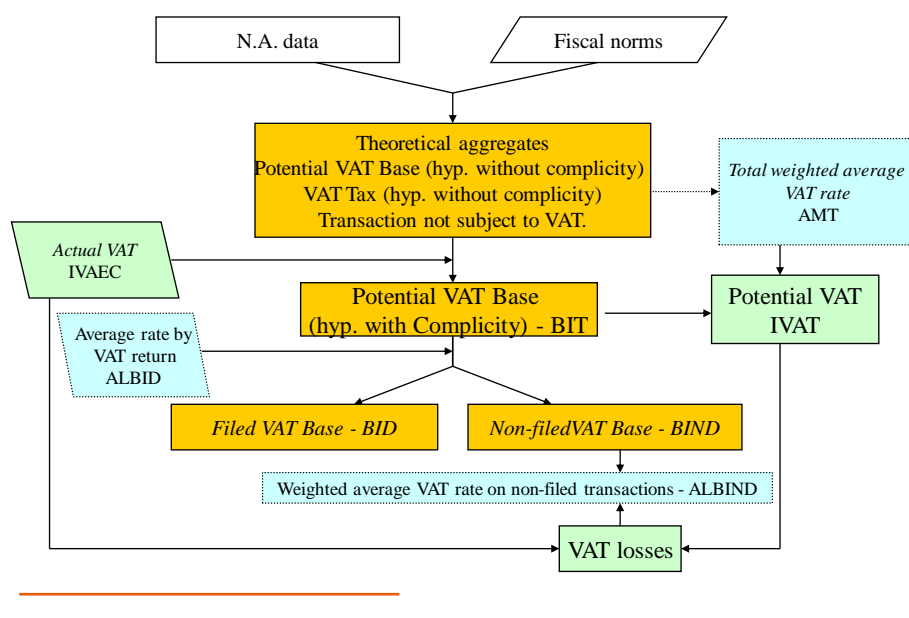
Aggregates	With complicity (Not collected)	Without complicity (Not remitted)
N.A.	3,400	3,400
VAT actual remitted	200	
Potential VAT base	3,200	3,400/1.2=2,833
Estimation of VAT Base Evasion	2,200 Overestimate	1,833 Underestimate

In the assumption that the overall fraud is perpetrated without complicity, the potential base is obtained by dividing the national accounts' data (€ 3,400) times 1 plus the theoretical tax rate (0.2). The result obtained is € 2,833, from which we subtract the tax base filed for € 1,000 to obtain an estimation of the evaded tax base lower than the effective one (€ 1,833 against € 2,000).

In this situation, it is impossible to differentiate between evasion with complicity and evasion without complicity; consequently, the Administration derives two estimations, considering both hypotheses, where evasion without complicity accounts for the bottom limit and evasion with complicity accounts for the top limit.

Figure 3 presents the flowchart of the potential tax base calculation method and subsequent evasion. It highlights the most relevant elements of the procedure: correction of national accounts' data based on the existing procedure, comparison with the data stemming from tax statements and the different steps to calculate evasion with complicity and without complicity.

Figure 3. Flow chart of the methodology used to estimate the potential VAT base and the Tax



The quality of estimations is strongly conditioned by the adjustments performed to transform the national accounts' data in order to make them homogeneous with tax regulations. Therefore, it is crucial to rely on highly detailed information, since more specific regulations call for further detail.

The Administration uses the following information groups in its calculation:

1. Final consumption by households (261 items);
2. Intermediate consumption by government (17);
3. Intermediate consumption by non-profit institution serving households;
4. Intermediate consumption by industry (58);
5. Intermediate consumption by product (5);
6. Gross fixed capital formation by government (11);
7. Gross fixed capital formation in dwellings (new and improvements);
8. Gross fixed capital formation by other market sector (58);
9. Valuables.

The tax under consideration enables to draft sufficiently extensive historical series; in the case of Italy, reliable information is available as from 1980. Likewise, the calculation methodology enables to perform estimations in brief terms. Therefore, the potential VAT base is used to perform long-term analysis as well as considerations on the most recent evolution of regulatory compliance.

As regards the structural analysis, an econometric estimation was conducted, which tends to isolate the context variables that influence evasion, in order to capture the

Administration's specific role¹⁵. Empirical evidence confirms that there is an important positive relation between the system's tax rates and tax evasion. The positive correlation between evasion and the economic cycle is also less intuitive, in the sense that evasion tends to drop in the recessive stages of the cycle and to grow in the expansion stages. This relation may be explained by the behavior of marginal companies operating partially or fully in the informal market; since they are also weaker they tend to be the first to be expelled from the market in times of crisis. Upon isolating the structural factors, we identify that taxpayers perceive a negative relation with the Administration's control power.

3.2. Regional Tax on Productive activities (IRAP).

The studies performed on VAT fail to render detailed information by economic activity and geographical area. Therefore, we have used the IRAP, a relatively recent tax created in 1997. This tax assumes the regular regional undertaking of activities organized autonomously for the production or exchange of goods or rendering of services.

The features of this tax are:

- ✓ A large taxpayer universe spanning the operators comprised in the assessment of the GDP almost in full;
- ✓ A tax base that is very similar to the value added to the cost of the national accounts' factor;
- ✓ Regional articulation performed on the basis of the production carried out in the location.

The three above-mentioned features facilitate comparison with the national accounts' data and enable detailed analyses both from the sectoral and territorial perspectives¹⁶. The analysis of the supply enables, on the one hand, to divide the taxpayer universe on the basis of business size.

Finally, on the basis of the IRAP, we may distinguish between the evasion component generated by informal labor and the one stemming from other types of fraud.

The Administration employs such estimations mainly for territorial analyses, to identify the areas with highest tax criticality as well as the sectors with the highest exposure to tax evasion risk, considering the area where they belong. In particular, we rely on information that subdivides the national territory into 102 provinces, within which six economic activity sectors are detailed¹⁷.

¹⁵ For a summary of the general evasion data, refer to Androni et al. (1998) and Christie E., Hozner M. (2006). Specifically for VAT, refer to Keen; Smith (2007), Nam et al. (2001).

¹⁶ For further information on the methodology, refer to Pisani, Polito (2006).

¹⁷ The detail of the economic sectors is limited to a greater territorial breakdown. At the national level, estimations are conducted for 50 branches, while for the 20 regions the sectors are limited to 20.

4. Conclusions.

This paper described the sources and methods of the key indicators applied by the Administration to estimate the tax gap and set forth a number of notions on how such information is used to plan and schedule the Administration's activity.

The methods use the top-down approach and are based on the comparison with macro-economic aggregates, which is extremely useful to provide a general benchmark framework of the system's structure and evolution.

Considering that evasion is a typically underlying variable and one which is particularly complex to estimate, it is necessary to use several independent estimations in order to undertake a reliability analysis based on the observation of the results obtained.

More than an end, it is the starting point for future actions. In order to attach greater operating value to the indications obtained from the top-down approach, we must integrate them with bottom-up techniques, based on the use of the results of tax controls¹⁸, in order to better qualify the information by type of taxpayer (for example, differentiating individuals from corporations) and extend the types of taxes that may be affected by tax evasion (for example, income tax).

Once the database is fine-tuned, we must analyze the grounds for evasion, in order to neutralize the effect of the scenario variables and isolate the role of the Tax Administration in reducing the tax gap, and therefore, increasing voluntary compliance. The latter variable is the most important objective in fulfilling the Administration's mission.

¹⁸ Please refer to OECD (2004b).

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