**International Journal of Scientific Research and Management (IJSRM)** 

||Volume||12||Issue||7||Pages||6893-6904||2024|| | Website: https://ijsrm.net ISSN: 2321-3418

DOI: 10.18535/ijsrm/v12i07.em17

# A Review of Tax Indirect Auditing Methods against Tax Evasion: The case of Greece

D. Stasinopoulos<sup>1</sup>, C.Kastanioti<sup>1</sup>

<sup>1</sup> University of Peloponnese, Department of Business & Organization Administration, Kalamata, Greece Corresponding author: D. Stasinopoulos, Avidou 130 Street, Zografou, Greece,

#### **Abstract:**

This paper aims to review and analyze the indirect auditing methods that were applied in Greece for the first time at the beginning of 2012 as a tax auditing tool, for the more comprehensive identification of taxable items. By employing the use of indirect auditing methods (mark up method, net worth method, source & application of funds technique, unit & volume method and bank deposits/cash expenditure technique) an attempt is made to determine withheld taxable items, other than those measured by the tax forms and the official accounting books and taxpayers' tax data, by utilising the information from various sources and bodies.

The implementation of indirect auditing methods by the Tax Authority is gradually taking precedence among other methods as on the one hand it can provide more effective monitoring and disclosure of withheld tax liabilities and on the other hand it requires proper utilization and feedback with data and information from public and non-public bodies. The full digital restructuring, the systematisation of process flows, the automatic digital recording of data on a single platform and, above all, the multi-level 'interoperability' of the public services involved can become an 'effective tool' for the successful implementation of indirect auditing methods.

**Keywords:** Tax Evasion, Indirect Methods, Tax Audits, Shadow Economy

#### 1. Introduction

#### 1.1 General remarks

Indirect audit methods are internationally acclaimed practices that enable the tax authorities, alongside traditional audit methods that focus on the data derived from accounting records and tax returns, to more effectively capture any undeclared taxable items, while obtaining and utilizing information on the financial status and behavior of taxpayers, from other external sources, such as financial institutions, insurance organizations, investment management organizations, mortgage companies, transport/postal services companies, public utility bodies of electricity, water, natural gas, private educational institutions/schools, tourist agencies, etc.

The importance of indirect audit methods in the context of tax audits has been the subject of analysis by international organizations such as the Organization for Economic Cooperation and Development (OECD), the International Monetary Fund (IMF), the European Organization of Tax Services (Intra-European Organization of Tax Administrations- IOTA) [1],[2].

# 1.2 Background

Since the 1950s, the United States Tax Administration has used indirect methods as a key tool against tax evasion. After all, based on the study in question, as early as 1954, the U.S. Supreme Court noted that indirect methods have been instrumental in securing public revenues [3],[4]. Increasingly, governments are resorting to the use of indirect methods for determining withheld tax items to reduce tax evasion and increase government revenues by collecting the attributable taxes and fines [5]-[8].

Above all, the significance of indirect methods and their emerging importance has been demonstrated through the shared experience of tax authorities internationally and in the international literature [9]-[13].

Meanwhile, certain concerns have been expressed on the rightful and rational access of tax authorities to all kinds of information that does not infringe upon individuals' fundamental rights and sensitive data. The existing legislation should provide the administration with wide powers to collect information, and exploitation of Big Data but at the same time offer safeguards on the protection of individuals' fundamental rights and freedoms [14], [15].

#### 1.3 Choice of the indirect audit method

Indirect audit methods were first introduced in the Greek law under the Law no. 4038/2012 and were amended to the provisions of the Income Tax Code (Law 2238/94) by Article 67B of Law. Specifically, these provisions state that: The determination of results by audit may also be carried out by applying one or more of the following audit methods:

- (i) the analysis of the taxpayer's liquidity (source & application of funds technique),
- (ii) the taxpayer's net worth (net worth technique),
- (iii) the amount of bank deposits/cash expenditure (bank deposits/cash expenditure method),
- (iv) the principle of ratios (mark-up technique),
- (v) the ratio of selling price to the total turnover (unit & volume technique)

The same methods were included in the provisions of the new tax laws passed in 2013 (Article 27 of Law 4174/2013) in the context of the modernisation of the Greek tax administration. However, for their implementation by the Tax Authority, specific conditions that were set out in the provisions of Article 28 of Law 4172/2013 (Income Code) must be met. Also, a series of Decisions and Regulatory Acts were issued by the Greek Tax Authority in order to determine the implementation details by auditors [16].

#### 1.4 Indirect methods share on total Tax Audits

In recent years, as illustrated in Table 1, there has been an increase in the use of indirect methods (still at a low percentage) by the Greek Tax Administration.

In 2020, the audit centres of the Greek tax authority conducted 18,239 tax audits, of which only 427 were carried out using indirect methods. The amounts established from audits in 2020 amounted to  $\epsilon$ 1.6 billion (against an annual target of  $\epsilon$ 1.8 billion), up 11.1% compared to 2019, and the amounts recovered amounted to  $\epsilon$ 169.8 million, down 58% compared to the previous year ( $\epsilon$ 404.5 million). The amounts established from audits based on indirect methods amounted to  $\epsilon$ 89.27 million [17].

In 2021, audit centres carried out 17,743 tax audits of which only 686 were carried out using indirect methods. The amounts established from audits amounted to  $\in$ 3.3 billion in 2021, compared to  $\in$ 1.6 billion in 2020 (annual target 2021:  $\in$ 1.3 billion). This increase is mainly due to the recovery of approximately  $\in$ 1.4 billion from one audit case in December. Recoveries amounted to  $\in$ 179.7 million in 2021, up 5.9% year-on-year ( $\in$ 169.8 million). The amounts established from audits based on indirect methods amounted to  $\in$ 172.11 million [18].

In 2022, audit centres carried out 17,506 tax audits of which 2,189 were carried out using indirect methods. The amounts established from audits amounted to  $\in$ 1.56 billion in 2022, compared to  $\in$ 3.3 billion in 2021 (annual target 2022:  $\in$ 1.8 billion). This decrease is mainly due to a specific recovery of approximately  $\in$ 1.4 billion from an audit case in December 2021. Recoveries amounted to  $\in$ 197.7 million in 2022, an increase of 10% compared to the previous year ( $\in$ 179.7 million). The amounts established from controls based on indirect methods amounted to  $\in$ 624.59 million [19], [20].

Table 1: Number of Indirect audit methods in Greece

Results of Tax Audits	2019	2020	2021	2022
Number of Tax Audits Using Indirect Methods	N/A	427	686	2,189
Established Amounts Using Indirect Method Audits (€ million)	N/A	89.27	172.11	624.59
Total Number of Audits				
(Based On General Provisions And Indirect Methods)	20,247	18,239	17,743	17,506

Total Amounts Established (€ million)	1,466.35	1,629.37	3,325.85	1,559.98
Total Amounts Recovered (€ million)	404.47	169.79	179.7	197.7

Source: [21]

# 2. A Review of Indirect Audit Techniques

In this section, the theoretical framework of indirect audit methods and a brief case study for each one of them will be presented. The first three methods to be presented (source & application of funds technique, net worth technique, bank deposits & cash expenditure technique) mainly concern natural entities while the next two (mark up technique and unit and volume technique) are applicable to legal entities engaged in business activities.

# 2.1 Source and application of funds Method

#### 2.1.1 Theoretical Framework

The Source and application of funds technique involves an audit of the taxpayer's cash flows and a countercheck of all known expenditures with all known revenues regarding the reference period. Net increases/decreases in assets and liabilities are taken into account along with non-deductible expenses and non-taxable income. The excess of expenses over the sum of reported and nontaxable income is considered as unreported taxable income. This technique is founded on the theory that any excess in expenditure (capital outlays), compared to revenues (capital resources), represents an underestimation of taxable income [22], [23].

This technique is used when the taxpayer's cash assets are not deposited in a bank account from where it is easy to track their source and allocation, or when the expenditures made are disproportionate to the income declared. To apply the method, a balance sheet with two main columns is created - as shown in the example in the next subsection:

(i) Sources of Capital / Revenues and (ii) Capital / Revenue Outlays

The first column contains all revenues received during the reference tax period under audit where the realization and legality of transactions is highlighted (for the types of revenues see the table in the example below).

The second column contains all the realized expenditures made during the reference tax period under audit (see also the table below).

The unreported taxable amount is obtained by summation of the amounts of these two (2) columns. If income was properly reported, the revenues received should be equal to the realized expenditures. If, however, the realized expenditures are greater than revenues received, the conclusion drawn is that there is a revenue underestimation or expenditures overestimation. In any case, the difference between revenues received and capital consumed is treated as unreported income and if not properly justified, it is taxed according to the effective provisions.

#### 2.1.2 Case Study Source and application of funds technique

For the purposes of the Case Study, we make use of the following data:

Consider a Pharmacist (taxpayer), that has reported the following in his tax declaration form as shown in

**Table 2:** Case Study data

Fiscal Year	2022
Total amount of declared personal income	0
1. Dividends - shares - rights	0
2.Real estate	0
3. Losses from business activity	€100,000
Total amount of declared spouse income	0

Total personal expenditure	€20,000
Income tax etc.	€25,000
Expenditure	€50,000

As can be deduced from the above table, the total amount of the taxpayer's declared family income is negative and does not cover his personal expenses according to Article 28 of Law 4174/2013 (conditions for the use of indirect audit techniques by the Tax Authority). The use of indirect auditing methods for the fiscal year 2021 is therefore justified. Table 3 below is composed with fictitious data:

**Table 3:** Case Study

I. Capital/Revenue Resources	Tax Period 1/1/2022 31/12/2022 (€)	II. Capital/Revenues Expenditure	Tax Period 1/1/2022 - 31/12/2022 (€)
1.Financial account balances at the beginning of the audited period (personal, family, business)	1,000	1.Financial account balances at the end of the audited period (personal, family, business)	10,000
2. Disposable at the beginning of the fiscal year (Sole proprietor with accounting records of C category of the Commercial Code or double-entry book-keeping of the Fiscal Code).		2. Disposable cash at the end of the fiscal year (Sole proprietor with accounting records of C category).	
3. Withdrawals from business(es)		3. Contributions to business accounts	
4.Gross income from business activity	50,000	4. Owning stocks in companies	
5. Income from other sources	,	5. Purchases of assets (personal/professional)	
6. Other non-taxable income (compensation/donations, etc.)		6. Purchases of goods/raw materials and other commodities for professional purposes	20,000
7. Proceeds from the sale of assets		7. Professional/business expenses of all kinds	60,000
8. Loans from financial institutions, etc.		8. Repayment of personal or business loans	
9. Other income of all kinds, taxable or non-taxable		9. Insurance premiums, compensation, donations and other expenditures	5,000
10. Increases in accounts payable		10. Taxes, fees, charges, levies and fines of any kind	10,000
11. Decreases in accounts receivable		11. Expenditure for all types of living expenses (personal/family)	5,000
12. Increase in advance payments received vis-à-vis revenue of the following year(s)		12. Reductions in accounts payable	10,000
13. Other types of revenues		13. Increases in accounts receivable	
		14. Loans granted to third parties.	
		15. Decrease in advance payments received vis-à-vis revenue of the following year(s)	
		16. Other types of consumption	5,000
TOTAL	51,000	TOTAL	125,000

II	II. Balance	Tax Period 1/1/2022- 31/12/2022
Total disposa	able income/capital	51,000
Consumed D	Disposable	
revenue/asset	ets	125,000
Balance		-74,000

The negative difference between the column "Capital/Revenues Resources" and the column "Capital/Revenues Resources" is considered as unreported personal earnings and if not expalined in accordance with the effective provisions, should be taxed.

#### 2.2 Net worth method

#### 2.2.1 Theoretical Framework

This method of the taxpayer's (physical entity) net worth reconstructs the financial history of the taxpayer by taking into account, for a period of one or more years, all assets and available capital, personal, family or business liabilities, personal, family or business receivables, personal, family or business expenses and even personal and business income, as well as personal, family or business assets and liabilities. The philosophy behind this method is that a tax evader who accumulates wealth in a certain fiscal year will either invest it in assets or spend it or will reduce his liabilities with funds that are not reported as taxable income [1], [2].

The determination of the taxpayer's net worth is based - as shown in detail in the following example - on the creation of a balance table for all audited tax periods using as a base tax year the one preceding the first audited tax period, which in fact represents the taxpayer's financial history. Thus, the first part of the table consists of the assets, and includes all personal, family and business assets of the auditee, his/her spouse and their dependants, as well as deposits in banks.

Assets included in the first part of the table are real estate, personal effects of high value, furniture, appliances, other equipment, jewellery and other valuables, miscellaneous receivables, motor vehicles, disposable cash, shares, the end-of-year inventory in the case of a sole proprietorship and miscellaneous accounts or other assets. All the above are recorded in the actual acquisition cost derived from the data available for auditing.

The liabilities part of the table, includes all the liabilities of the audited person's spouse and his dependants, including professional liabilities, if and only if, they relate to a sole proprietorship. Liabilities include loans from banks, bills and cheques payable and any other demonstrable liability to creditors and depreciation. The difference between assets and liabilities is therefore the taxpayer's net worth for the corresponding tax period. Based on the worth net of each tax period, the initial net worth is deducted in order to produce the "net worth table", where for the 1st year of audit, the initial "worth net" is the "worth net" of the base point. This change in the net worth will be modified in cases of acquisition of assets free of charge (e.g. death,

donation, gift, parental benefits, lottery winnings, exchanges) and in cases of disposal of assets, with non-deductible personal and family expenses of all kinds (e.g. personal and family living expenses, other expenses, tax-free income from various sources, non-taxable income cases or taxable in a special way). The resulting final balance is the estimated revenue/net income of the audited taxpayer, his or her husband/wife and dependent members, according to the net worth technique. This determined taxable amount is then compared with the related reported income from each source. In case of a resulting difference between them, this remains to be verified as unreported income and if not sufficiently documented, it is taxed according to the applicable provisions [6],[7],[25].

#### 2.2.2 Case Study: Net Worth method

This is a case study of the Net Worth Method as presented in Tables 4 and 5.

Table 4: Case Study Net Worth method

	ALANCE SHEET	
Audited Items	BASE YEAR: TAX PERIOD 2021	TAX PERIOD 2022
ASSETS		
(Assets personal/family/professional)	BASE YEAR: 1/1/2021	01/01/2022
Real estate (cost)	100,000	90,000
Furniture, Appliances, Other equipment	10,000	10,000
Personal effects of high value > €5000	0	0
Jewellery etc. Valuables >€5000	0	0
Sundry receivables	0	0
Motor Vehicles - Boats - Aircrafts etc.	0	0
Disposable income	0	0
Deposits with financial institutions	200,000	1,000,000
Shares, other securities	0	0
End of year inventory	0	0
Miscellaneous accounts - other assets	0	0
Total assets	310,000	1,100,000
LIABILITIES (Personal/family/professional		
liabilities)	0	0
Personal/family loans	0	200,000
Business loans (sole proprietors)	0	0
Bills	0	0
Sundry creditors	0	0
Miscellaneous liabilities (depreciation, etc.)	0	0
Total liabilities	0	200,000
Net Worth	310,000	<u>900.000</u>

 Table 5: Case Study: Net Worth method

	Table: Net Worth		
	NET WORTH METHOD	TAX PERIOD 1/1/2022-31/12/2022	
	NET WORTH END OF TAX PERIOD	900,000	
minus	net worth start of tax period	310,000	
	annual net worth increase	590,000	
minus	adjustment of net worth with free of charge assets		
	adjusted net worth	590,000	
plus	non-deductable expenditure (cheques and cash)		
	personal and family substistence expenses	50,000	
	other expenditure/purchases		
	loss on assets divestment		
	subtotal	640,000	
minus	other income	50,000	
	untaxed income from miscellaneous sources		
	untaxed or taxed in a specicic way income (donations, profits from sale of fixed assets, grants, etc.)		
	total other revenues	50,000	
	income determined according to the method (a)	690,000	
minus	income declared to the tax authority (b)	400,000	
	DIFFERENCE (A) - (B)	290,000	

Therefore, this method results in an additional taxable amount of €290,000 compared to the income declared to the Tax Authority.

# 2.3 Bank Deposits and Cash Expenditure method

#### 2.3.1 Theoretical Framework

The third indirect audit method laid down by the Greek legislation is the bank deposits/cash expenditure techinque. Based on this technique, auditing is carried out by monitoring the movements of the taxpayer's disposable capital of his or her husband/wife and dependent members either by deposits in bank accounts or by expenditure in various transactions in cash. In essence, this technique analyzes the total deposits and assets in bank accounts in addition to the purchases/expenses in real money for personal and business purposes during the audited time period in comparison to the total reported income.

The rationale of this method is based on the fact that when a taxpayer receives money, he has three choices: deposit, spend or invest.

This method gives a complete picture of the taxpayer's trading activities by providing information on the type and amount of deposits, the frequency of these deposits, the entities making these deposits or withdrawals and the credit institutions where these transactions take place [20].

#### This method is used when:

- the taxpayer makes periodic deposits of money to a financial account which indicates that they are derived from an income-generating activity,
- the taxpayer pays most of the business expenses by means of bank cheques,

With this method, taxable income is determined by "tracking" the movement of the taxpayer's funds and through an analysis of bank deposits, monetary transactions, electronic debits, transfers and credits to bank accounts as well as the taxpayers' expenditures in cash.

The implementation of this method determines the total bank deposits in the audited period. Subsequently, the deposited amounts of the bank accounts relating to non-taxable income are deducted.

- loan disbursement amounts
- -compensation transactions between the accounts of the taxpayer, his/her spouse and their dependent members
- transfers and other transactions which do not constitute net deposits.

Payments in cash for professional and business expenses, purchase of commodities, purchases of assets, personal/family expenses, taxes paid, contributions and fines of any kind, repayment/reduction of debts in cash, increases or decreases in disposable cash in the audited period, and any other cash payment are added to the balance of the net bank deposits.

From the new net bank balance, the non-taxable income not deposited into bank accounts, such as loans or donations is deducted. The resulting balance is adjusted for increases/decreases in accounts receivable and increases/decreases in advance payments received vis-à-vis revenues in subsequent years and is then compared to the total declared income. If a positive difference occurs, it is considered and monitored as unreported income and if not sufficiently documented by the auditee-taxpayer, it is taxed according to the existing provisions [5], [24].

#### 2.3.2 Case Study: Bank Deposits/Cash Expenditure Tecnique

This is a case study on the Bank Deposits and Cash Expenditure method. Consider a physical entity, who is a doctor. His financial data are depicted in the table 6 below:

BANK DEPOSITS/CASH EXPENDITURE TECHNIQUE € TAX PERIOD total amounts deposited in all forms of financial accounts (audited period)

**Table 6:** Case Study Method of Bank Deposits/Cash Expenditure

minus	transactions not constituting net deposits		
€	net bank deposits' balance	1,000,000	
€	net bank balance attributable to the audited entity	1,000,000	
plus	business/professional expenses (in cash)	100,000	
plus	purchase of commodities, raw or auxiliary commodities (in cash)	30,000	
plus	purchase of assets personal/professional (in cash)	0,00	
plus	personal/family expenditure (in cash)	0,00	
plus	paid taxes, contributions and duties of any kind (in cash)	20,000	
plus	payment/reduction of debts (in cash)	0,00	
plus	increase/decrease of disposable cash in audited period	0,00	
plus	other payments in cash	0,00	
plus	vat rates on inputs (for the audited activity) (in cash)	30,000	
€	balance of deposited and accrued revenue	1,180,000	
minus	not taxable revenue	180,000	
	not deposited amounts in bank/financial accounts		
minus	raise in advance paymens received	0,00	
	vis-à-vis revenue from subsequent year(s)		
plus	decrease in advance paymens received	0,00	
_	vis-à-vis revenue from subsequent year(s)		
plus	increase in accounts receivable (e.g., sales on credit)	0,00	
minus	decrease in accounts receivable (e.g., sales on credit)	0,00	
€	total annual gross revenue based on method (a)	1,000,000	
€	total gross revenue declared from the exercise of the auditied activity in tax declaration form (b1)	600,000	
€	output vat (from the exercise of the audited activity) (b2)	240,000	
$\epsilon$	total other revenues in the tax declaration form (b2) excluding the audited activity (b3)	40,000	
€	Difference (a)-(b1)-(b2)-(b3)	120,000	

The resulting positive difference of €120,000 is considered as unreported taxable income that is not justified and as such is subject to taxation.

### 2.4 The mark up method

#### 2.4.1 Theoretical Framework

Under the "mark up" principle, the taxpayer's income is restated using percentages or ratios, which are considered indicative, for the calculation of the actual tax liability. Under this method, an analysis of sales and/or cost of sales is carried out and an appropriate percentage is applied to estimate the taxpayers' gross income [1],[20].

This method is recommended as an effective one especially in cases where:

- The enterprise's stockpile purchases can be easily allocated to similar groups with the same gross profit rates,
- When stockpile (inventory) is the key revenue generator for the enterprise,
- When stockpiles originate from a limited and confirmed number of suppliers,
- -When there is an increased degree of stability in the sales prices charged by the taxpayer

#### 2.4.2 Case Study: The mark up method

Suppose Ippokrateio Company is engaged in the trade of medical supplies and markets two types of orthopaedical bedding: A) Model A and B) Model B.

Based on the accounting records maintained by the enterprise during the audited period the following are deduced (see Table 7):

**Table 7:** Case Study: The Mark up method

Data	Amounts (€)
Wholesale Sales	100,000
Retail Sales	300,000
GROSS REVENUES	400,000
Purchase cost A	80,000
Purchase cost B	320,000
Cost of Sales	400,000

Based on the accounting records of the enterprise, the audit concluded that the average purchase price for item A was  $\in 1,000$ , and for item B  $\in 2,000$ .

The selling prices (see Table 8) according to the price list for item A were €1,200 per item and for item B €2,200 per item.

Table 8: Case Study: Mark up method

	ITEM A	ITEM B
AVERAGE PURCHASE PRICE	1,000 €	2,000 €
SELLING PRICE	1,200 €	2,200 €

Source: The Authors

The audit made the following calculations for estimating the gross profit on purchases:

# 1<sup>st</sup> method of calculation

(%) Ratio of gross profit margin to cost of sales = 
$$\frac{\text{Sales price excluding V.A.T} - \text{Purchase price excluding V.A.T}}{\text{Purchase price excluding V.A.T}}$$

Therefore:

Item A: (1,200 - 1,000) / 1,000 = 0.2Item B: (2,200 - 2,000) / 2,000 = 0.1

Gross revenues are then calculated as follows:

Revenues from business activity =

Total cost/expenses of sales excluding V. A. T \* (%) Ratio of Gross profit margin on cost of overall sales

Item A: 80,000\*(1+0.2) = €96,000Item B: 320,000\*(1+0.1) = €352,000Total audit-based revenue: €448,000Gross revenue recorded: €400,000

Difference: €48,000

This difference is considered as undeclared (withheld) taxable income.

# 2<sup>nd</sup> method of calculation

(%) Ratio of margin/gross profit on sales 
$$=$$
 
$$\frac{\text{Sales price excluding V.A.T - Purchase price excluding V.A.T}}{\text{Sales price excluding V.A.T}}$$

Item A: (1,200 - 1,000) / 1,200 = 0.17Item B: (2,200 - 2,000) / 2,200 = 0.10,

The ratio (%) of cost of sales to overall sales is then calculated as follows:

Ratio (%) of cost of sales to sales = 1 - Ratio (%) of gross profit margin of sales

Item A: 1-0.17 = 0.83

Item B: 1-0.10 = 0.90

Finally, revenues are determined based on the equation:

Income from business activity = Total cost of sales excluding VAT / Ratio (%) of cost of sales

Item A: 80,000 / 0.83 = €96,385Item B: 320,000 / 0.90 = €355,556

Total revenue based on audit: €451,940.60

Gross Book Revenue: €400,000

Difference: €51,940.60

Same as previously, for the incurred difference, the corresponding income tax and the corresponding VAT

must be calculated.

# 2.5. Unit & volume method (The ratio of selling price to total turnover)

# 2.5.1. Theoretical Framework

This technique can be utilized to determine the income from business activity by specifying the production capacity of a company when the company produces one or more similar commodities that have a standard relation between the factors of production (e.g. relation of fabric to the trousers produced) or by determining the volume of turnover when the level of sales is linked to variable costs/operating costs that are proportional to turnover (e.g. relation of packaging to portions of distributed fodder) or by determining the volume of turnover when the level of sales is linked to variable costs/operating costs that are proportional to turnover (e.g. relation of packaging to portions of food distributed, relation of electricity and water supply costs to services provided) [1].

Under the above method, the auditor uses the data at his disposal (purchases of raw materials, price lists, etc.), converts them into products and, on the basis of the prices in the pricelists, draws a conclusion on the gross (revenues) receipts (net of VAT) that the company should have. If those are higher than the gross (revenues) receipts (net of VAT) declared in the tax return, then the difference, if not justified, is taxed [20].

# 2.5.2. Case Study: The unit & volume method

Consider that the company Medical Consumables Ltd. is a manufacturing craft of COVID-19 protection masks and imports the special fabric as raw material and then processes it to create the COVID-19 protection masks in three colors.

We also know that the company produces only three types of masks by colour: black, blue and pink.

Depending on the colour of the fabric, we can calculate the number of masks produced on the basis of the measures of fabric used per mask.

# In the auditee's books we observe that the gross receipts from the sales of Mask A is $\leq 30,000$ , for Mask B $\leq 20,000$ and for Mask C $\leq 50,000$ respectively.

-Having in mind that the selling price for Mask A is €2 and that 20,000 masks were produced we conclude that:

Selling price = €2.

Number of masks produced = 20,000 (as derived from the ratio of fabric measure/mask).

Sales determined from the audit =  $20,000 \times \text{€}2 = \text{€}40,000$ 

Final undeclared receipts from selling mask A = 40,000-30,000 = €10,000

-Having in mind that the selling price for mask B is €1 and that 20,000 masks were produced we conclude that:

Sales price = €1

Number of masks produced = 20,000 (as derived from the ratio of fabric measure/mask).

Sales determined from the audit =  $20,000 \times 1 \in \pm 20,000$ 

Therefore, the declared gross receipts from mask A = £20,000

Final unreported revenue from mask B = 20,000-20,000 = €0

-Having in mind that the selling price for mask C is €3 and that 20,000 masks were produced we conclude that:

Sales price = €3

Number of masks produced = 20,000 (as derived from the ratio of fabric measure/mask).

Sales determined by the audit =  $20,000 \times €3 = €60,000$ 

Therefore, the declared gross receipts from mask C = 60,000Final undeclared income from mask A = 60,000-50,000 = 10,000

#### 4. Conclusion

The implementation of indirect auditing methods by the Tax Authority is gradually taking precedence among other methods as on the one hand it can provide more effective monitoring and disclosure of withheld tax liabilities and on the other hand it requires proper utilization and feedback with data and information from public and non-public bodies. The full digital restructuring, the systematisation of process flows, the automatic digital recording of data on a single platform and, above all, the multi-level 'interoperability' of the public services involved can become an 'effective tool' for the successful implementation of indirect auditing methods. However, the channeling to the Tax Authority of a wealth of information containing valuable financial aspects but in many cases with sensitive information from a wide range of public and private entities raises inevitable issues for the adequate protection of the privacy of individuals, which should be of the utmost concern of the Tax Authority, so as to create a sense of security for taxpayers about the type of information collected and the way it is used by the tax auditors.

**Acknowledgments:** This manuscript has been done within the framework of the Post Doc Programme in Business & Organization Administration of the University of Peloponnese (Greece)

#### References

- 1. OECD (2006). Strengthening Tax Audit Capabilities: Innovative approaches to improve the efficiency and effectiveness of indirect income measurement methods. Organization for Economic Co-operation and Development. Retrieved from: https://www.oecd.org/tax/administration/37590009.pdf
- 2. Rettig, P.C. (2014). Overview: Indirect Methods of Determining Taxable Income. Journal of Tax Practice & Procedure pp. 19-24.
- 3. Duke, S. (1966). Prosecutions For Attempts To Evade Income Tax: A Discordant View of a Procedural Hybrid. The Yale Law Journal Volume 76, No. 1.
- 4. Taylor, N.W. (1955).Taxation Tax Fraud Cases Use of Net Worth Method. North Carolina Law Review, Volume 33, Number 4, Article 19
- 5. Dugan, M. and Taylor, G. (2020). The indirect method A valuable fraud detection tool. Journal of Forensic & Investigative Accounting 12(3): 452-470.
- 6. Eisenberg, P. (2018). Application of the net worth method in forensic accounting investigations. International Research Journal of Multidisciplinary Studies, 4(10), 1-23. Retrieved from: http://dx.doi.org/10.2139/ssrn.3324282
- 7. Botha, A.E.(2009). The Net Worth method as technique to quantify income during investigation of financial crime. University of South Africa, Pretoria
- 8. Davis-Culler, P. L., Harvin, O., Killey, M., Solar, D (2021). Utilizing Methods of Proving Income in Fraud Examinations. Journal of Forensic and Investigative Accounting. 13(1): 90-101.
- 9. Wise, R. (2000). Tax Fraud and Mens Rea Forensic Accounting. Association of Certified Fraud Examiners Montreal Chapter, Sixth Annual Fraud Conference.
- 10. Branko, M. (2017).Indirect Methods in Assessing Illegal Origin of Income and Assets. *Journal of Accounting and Management*, vol.: 07, no.: 02
- 11. Stasinopoulos, D., Goula, A., and Soulis, S (2022b). Estimation of Tax Evasion in the Greek Busi ness Sector». Journal. Vision: The Journal of Business Perspective (VIS), (VIS-2021-0356.RV1-doi: 10.1177/09722629221129090)
- 12. Retting C. (2011). IRS Audit Techniques Guides and Current Tax Enforcement Priorities. Journal of Tax Practice & Procedure.
- 13. IRS (2023).Internal Revenue Service (U.S.A): Internal Revenue Manual, Criminal Investigation, Part 9.5.9.2.2, Indirect Method. IRS Manual. Retrieved from: https://www.irs.gov/irm/part9/irm\_09-005-009#idm140538264151792
- 14. Biber, E. (2010). Revenue Administration: Taxpayer Audit Use of Indirect Methods. *International Monetary Fund, Fiscal Affairs Department, pp. 1-12*

- 1. 15.Stasinopoulos, D., Goula, A., and Soulis, S (2022a). The Economics of Shadow Economy in Health: The Case of Greek Physicians Sector». Journal of Health Management (JHM) (Volume 24 Issue 4, December 2022 issue-doi:10.1177/09720634221128090)
- 15. IAPR (2013). Independent Authority for Public Revenue. Circular N. 1171/4-7-2013, 1171/4-7-2013, 1050/17-02-2014, 1094/07-04-2014, 1180/16-7-2014, 1259/22-12-2014, 1180/16-7-2014, 1259/22-12-2014, 371/8-5-2019, 1293/31-7-2019. Retrieved from: http://elib.aade.gr/elib
- 16. IAPR (2020). Independent Authority for Public Revenue. Annual Report 2020. Retrieved from: https://www.aade.gr/epiheirisiaka-shedia/apologistiki-ekthesi-aade-2020
- 17. IAPR (2021). Independent Authority for Public Revenue. Annual Report 2021. Retrieved from: https://www.aade.gr/epiheirisiaka-shedia/apologistiki-ekthesi-aade-2021
- 18. IAPR (2022). Independent Authority for Public Revenue. Annual Report 2020. Retrieved from: https://www.aade.gr/epiheirisiaka-shedia/apologistiki-ekthesi-aade-2022
- 19. Stasinopoulos, D., & Kastanioti, C. (2024). The Implementation of Tax Indirect Auditing Methods in Greek Economy Against Tax Evasion. Vision, 0(0). https://doi.org/10.1177/09722629241237395
- 20. IAPR (2023). Independent Authority for Public Revenue. Open Data-KPIs. Retrieved from https://www.aade.gr/open-data
- 2. IRS (2023b). Internal Revenue Service (U.S.A): Internal Revenue Manual, Criminal Investigation, Part 9.5.9.5, Net Worth Method of Proof. IRS Manual. Retrieved from https://www.irs.gov/irm/part9/irm\_09-005-009#idm140538264151792
- 21. IRS (2016). Internal Revenue Manual: Chapter 4.10.4.6.3.2. Internal Revenue Service. Retrieved from: https://www.irs.gov/irm/part4/irm\_04-010-004-cont01.html
- 22. IRS (2023c).Internal Revenue Service (U.S.A): Internal Revenue Manual, Criminal Investigation, Part 9.5.9.6, Expenditures Method of Proving Income. IRS Manual. Retrieved from: https://www.irs.gov/irm/part9/irm\_09-005-009#idm140538264151792
- 23. IRS (2023d).Internal Revenue Service (U.S.A): Internal Revenue Manual, Criminal Investigation, Part 9.5.9.7, Bank Deposits Method of Proving Income. IRS Manual. Retrieved from https://www.irs.gov/irm/part9/irm\_09-005-009#idm140538264151792

#### **Authors' Profile**

#### Dr. Dionysios STASINOPOULOS

Postdoctoral researcher in the Department of Business & Organization Administration, University of Peloponnese, Department of Business & Organization Administration, Kalamata, Greece

Interests: Tax Evasion, Shadow Economy, Health Economics

#### **Prof. Catherine KASTANIOTI**

Professor in the Department of Business & Organization Administration, University of Peloponnese, Department of Business Administration, Kalamata, Greece

Interests: health economics; health planning; health management; organizational behaviour; organizational culture; leadership; organizational change and development