



ISTITUTO DI STUDI E ANALISI ECONOMICA

Book-Tax Gap. An Income Horse Race

by

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Working paper n. 61
December 2005

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ABSTRACT

This paper presents some stylised facts about the book-tax gap, i.e. the difference between book and taxable income, of Italian corporations. This divergence is a reflection of the usage of any tax shields and any applicable credits and rebates which, in turn, implies that the concept of taxable income is elusive. Moreover overlapping fiscal policies make harder, on the one hand, firms' tax planning and, on the other hand, policymakers' control on the effectiveness of their manoeuvres. As for the fiscal year 2000, evidence based on data drawn from the DIECOFIS database shows that, as expected (why pay more?), in Italy there is a widespread and active industry set up to enable taxpayers to identify and take advantage of particular tax effects. In that year there were 55,201 (16% of the) firms with positive book profits and reported non positive taxable incomes. A less expected outcome shows that the "income race" may finish in a quite different way. More than half (57%) of the uneconomic companies, end up with positive taxable incomes (83,449 in absolute terms). A disaggregated analysis highlights that this latter share is much lower among southern corporations and large enterprises, especially in the construction and in the hotel/restaurant services sectors. Finally, it results that industries whose firms more often declare negative taxable incomes tend to display significantly higher shares of irregular workers, as well.

Keywords: Corporate income tax, tax avoidance, accounting.

JEL Code: G14, M4, K2

NON-TECHNICAL SUMMARY

Tax and tax policy are at the heart of the State, reflecting decisions on how public and private sectors should work together. The challenges for tax policy increasingly relate to ensuring policy is based upon firm evidence and best use of information is made. One of the issues in policy analysis which has attracted much attention and analysis in recent years is the so called book-tax gap, *i.e.* the difference between book and taxable income. The tax law provides varying opportunities for tax planning, and firms have competing incentives to consider in planning a tax reporting strategy, including financial reporting effects. Some of the reasons why remunerative firms may not report tax liabilities include the difference between tax and balance sheets depreciation of assets, current-year operating losses, losses carried forward from preceding tax years, sufficient tax credits/reliefs available to offset income tax liabilities, *etc.* In fact, due to the dynamic nature of the budgeting activity and to overlapping (and sometimes differently targeted) fiscal policies, some corporation could report positive book profits, while paying nothing in corporate income taxes and some other could show negative book-tax gaps. Due to the several degrees of freedom available, we may say that tax liabilities are endogenous from managers' point of view, in that they are nothing else than a cost to be minimised. I present preliminary results that, as expected (why pay more?), in Italy there is an active industry set up to enable taxpayers to identify and utilize particular tax effects. A less expected outcome shows that there are many unprofitable companies ending up with positive taxable incomes. A disaggregated analysis highlights that this latter situation is much less common among southern corporations and large enterprises, especially in the construction and in the hotel/restaurant services sectors, than elsewhere. Finally, data suggest that industries whose firms more frequently declare negative taxable incomes tend to display significantly higher shares of irregular workers, as well. A question naturally arises – is this picture what really lawmakers, and even managers, want?

REDDITO CIVILISTICO E REDDITO FISCALE. UNA QUANTIFICAZIONE DEL LORO DIVARIO

SINTESI

I differenti criteri sui quali si basa la normativa fiscale rispetto a quella civilistica generano una differenza tra il reddito civilistico e il reddito fiscale. In questo lavoro si tenta una quantificazione di questa differenza, nota in letteratura come *book-tax gap*, con riferimento alle imprese italiane. I dati, elaborati all'interno del Progetto DIECOFIS, si riferiscono all'anno fiscale 2000. Come atteso, le imprese sfruttano ogni appiglio legale per poter ridurre il proprio reddito imponibile: tra le circa 345 mila *corporations* che iscrivono in bilancio redditi positivi, il 16% dichiara imponibili nulli o negativi. Più sorprendente è il risultato che mostra come più di 83.000 imprese tra quelle in perdita civilistica, cioè il 57% delle imprese che nel 2000 non hanno generato profitti, siano nella condizione di dover pagare imposte sul reddito. E' probabile che errori di pianificazione fiscale, causati anche dall'alea imprenditoriale e dalla difficoltà di dover tener sotto controllo tutti i cambiamenti legislativi, giochino un ruolo nelle oscillazioni "perverse" dei due redditi. I dati disponibili consentono anche analisi disaggregate. Le imprese in perdita sono per lo più di grandi dimensioni, sono concentrate nel Mezzogiorno e operano nel settore edile e in quello dei servizi alberghieri e della ristorazione. E' anche interessante osservare che le società che più frequentemente dichiarano redditi imponibili non positivi, appartengono ai settori che utilizzano quote più elevate di lavoro nero e viceversa. Sebbene l'analisi è statica, risentendo di una disponibilità limitata all'anno 2000 essa, nondimeno, consente legittimamente di domandarsi se il quadro sopra delineato è davvero quanto desiderato dal legislatore e/o dagli imprenditori.

Parole chiave: IRPEG, evasione ed elusione fiscale, contabilità di impresa.

Classificazione JEL: G14, M4, K2

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"The art of taxation consists in so plucking the goose to obtain the largest amount of feathers, with the least possible amount of hissing."

Jean-Baptiste Colbert

1 INTRODUCTION¹

Tax and tax policy are at the heart of the State, reflecting decisions on how public and private sectors should work together. Tax policy has developed far beyond its traditional focus on revenue raised (and its stability and predictability), to encompass assessment of the effects of taxation on efficiency, fairness, incentives, and competitiveness, as well as taking account of compliance and administration costs. The challenges for tax policy increasingly relate to ensuring coherence across the tax system, to using tax in support of the Government's wider social, economic and environmental objectives, and ensuring policy is based upon firm evidence and best use of information is made.

One of the issues in policy analysis which has attracted much attention and analysis in recent years is the expanding divergence of the so called book-tax gap, *i.e.* the difference between book and taxable income (Desai, 2003 and 2004; Mills and Plesko, 2003). Some of the reasons why remunerative firms may not report tax liabilities include the difference between tax and balance sheets depreciation of assets, current-year operating losses, losses carried forward from preceding tax years, sufficient tax credits/reliefs available to offset income tax liabilities, *etc.* In fact, due to the dynamic nature of the budgeting activity and to overlapping (and sometimes differently targeted) fiscal policies, some corporation could report positive book profits, while paying nothing in corporate income taxes and some other could show negative book-tax gaps. Due to the several degrees of freedom available, we may say that tax liabilities are endogenous from managers' point of view, in that they are nothing else than a cost to be minimised. In the international literature the real concern with the gap is not that it is exist, but that the difference may be caused by some

1 The work is developed under the DIECOFIS (**D**evelopment of a system of **I**ndicators on **E**conomic **C**ompetitiveness and **F**IScal impact on enterprise performance, financed by the Information Society Technologies Programme (5th Research Programme of the European Union, contract n. IST-2000-31125) coordinated by Paolo Roberti and Maria Grazia Calza, Italian national institute of statistics (ISTAT), website www.istat.it/diecofis. I would like to thank F. Oropallo for able assistance. A special thank to Maria Pia Pesce. All errors are solely those of author as are the opinion expressed herein. E-mail: m.bovi@isae.it.

misleading or even fraudulent activity on the part of firms in reporting book income, taxable income, or both. The recent and dramatic cases of Enron, WorldCom, and, for Italy, Parmalat, Cirio *etc.* suggest that even extreme events are a real problem. Also, while there is little debate about the divergence in the incomes, the cause of the divergence and whether and how to fix it are very much open questions even in the political circles. In 2004 US policymakers released a draft of the final version of the Schedule M-3, Net Income (Loss) Reconciliation for Corporations, targeted to make differences between financial accounting net income and taxable income more transparent.

While similar worries are emerging in Italy as well (see below), to the best of my knowledge very few works on the book-tax gap for Italian enterprises exist (Bernardi and Bernasconi, 1996; SECIT, 2000; Bernardi and Franzini, 2004). The main reason for that is the lack of reliable data - in Italy there is unsatisfactory evidence even on the basic quantification of the gap. Against this framework, the DIECOFIS database (Development of a system of Indicators on Economic COmpetitiveness and FIScal impact on enterprise performance, see Oropallo, 2004) eventually allows searching for some empirical indication on those subjects. In particular, the goal and the contribution of this paper is to highlight some stylised facts lying behind the difference between post-tax book and taxable income of Italian corporations. While it is possible to analyse the gap in order to address tax evasion issues (for a survey on that, see Bernardi and Franzini, 2004), here the main focus is the gap in itself and it is worth recalling that it may be totally generated by “legal” devices. In this sense the present paper is closer to the above mentioned international literature. The DIECOFIS dataset covers one year only and it may be useful just for preliminary indications. Therefore the present attempt must be seen as the initial step of deeper and wider analyses. On the positive side the DIECOFIS database is i) very analytical (item-by-item); ii) fully representative of the universe (nearly 500,000 corporations); iii) under continuous updating. Thus, hopefully, useful insights can emerge in this first static measurement exercise about the “income race” as well.

As the results of this paper show, the industry set up to enable Italian taxpayers to identify and take advantage of particular tax effects, is very active. This is an expected outcome, why pay more? So, firms appear to engage in a variety of behaviours that perhaps, not taking in consideration taxes, would be simply undone. An uncontrolled proliferation of these activities causes an increase of costs for firms and may constitute a serious issue threatening the tax system. A signal of that could be the very high share of not-tax-deductible items on taxable income (80%). That is to say, firms use all their discretionary legal power to reduce their tax liabilities. On the other hand, there are striking

shares of companies with opposite book-tax positions. More than half (57%) of the corporations reports both negative post-tax book profits and positive taxable incomes; 16% of the firms starting with positive post-tax book profits ends up with zero/negative taxable incomes. Another clue suggestive of the potential problems linked to the presence of the income gap can be detected by the increasing “curiosity” of Italian fiscal authorities about corporations’ balance sheets². Side-by-side with the so-called sectoral studies (*studi di settore*), explicitly aimed to disclose “data incoherence”, the section “further balance sheets elements” of the tax form report (*Modello Unico*) is continuously calling for more and more details. On that, it is interesting to notice that fiscal authorities ask corporations to declare revenues and costs not/under reported in the financial accounting. Data show that the former amounts to 474,000 euros, the latter to 22 billions of euro. Needless to say, this result is not necessarily associated with misleading/fraudulent activities on the part of companies, but some suspicion remains (see section 5) and, partly, it could explain the curiosity of the lawmakers.

A disaggregated analysis at the sectoral, geographical, and dimensional level shows that the tax arbitrage across budget items facing different tax treatment generates very different book-tax gaps. As mentioned, 16% of all Italian corporations starting with positive post-tax book profits ends up with zero/negative taxable incomes. Well, this latter share is much lower among southern corporations and large enterprises, especially in the construction and in the hotel/restaurant services sectors. Then, it is worth noticing that data show a high (53%) and significant correlation between sectoral irregularity ratio (irregular full time equivalent units on sectoral total) and share of firms reporting non positive taxable incomes. This outcome is somewhat in line with the worries of the Advisers of the Revenue Departments (SECIT). SECIT (2001) argues that (page 15, translation of the author) “it is worth noting that the tax evasion must play a significant role if even in 1998 more than 40% of the Italian corporations report losses.”

The paper is organised as follows. In the next section I deal with the data set, section 3 explains why pre- and post-tax incomes can be different. The following two sections report some quantitative evidence on how much they are different both at the aggregate (section 4) and at the disaggregate level (section 5). Concluding remarks close the paper.

² In 1999, US Treasury wrote a white paper on this topic (US Treasury, 1999).

2 THE DATABASE ³

The database used in the present analysis is the result of the integration of different sources carried out in the DIECOFIS project. The resulting information system is called Enterprise Integrated and Systematized Information System (EISIS). The first step in integrating all sources is the selection of the “spine” information that will be used as a basis for the integration process. The “spine” is constituted by the statistical register of Italian active enterprises (ASIA)⁴. Other sources are both statistical and administrative. Statistical surveys from Italian national institute of statistics (ISTAT) are:

- Structural Business Statistics
- Survey of Accounts System with 100 or more workers (SCI); Small and Medium Enterprise Survey with less than 100 workers (PMI);
- Industrial Production Survey;
- Foreign trade survey;
- Other surveys such as the Community Innovation Survey (CIS) and the Information and Communication Technology Survey.

The information coming from the administrative sources that have been integrated in the *EISIS* database include:

Company Accounts data from the Chamber of Commerce annual report that complement ISTAT business survey of account system (*SCI* and *PMI*) for all corporate and some co-operatives and consortium enterprises only;

Fiscal data from the Revenue Agency annual tax returns.

The main effort which was necessary to undertake was the development of a methodology to allow data linkage between the information of the above surveys and the whole enterprise universe, represented by the data register of enterprises. In the ASIA archive, ISTAT files all active enterprises except those belonging to Agriculture, Forestry and Fishing (A, B sectors according to NACE classification), to the Public Sector (L) and other services (O91, P and Q). This

³ I thank F. Oropallo to let me reproduce part of his paper (Oropallo, 2005).

⁴ The ASIA project started in 1995, its goal is to improve and update the register of all Italian enterprises. It is the result of the integration of external sources with ISTAT Archives (old Sirio-nai archive, 7th Industry Census and survey SK). External sources are: VAT Register of the Ministry of Finances; Chambers of Commerce; INAIL (National Institute of Insurance Against Accidents at Work); INPS (National Social Security Institute); ENEL (Electricity Public Company); Yellow Pages.

can be used as a starting point or common basis for the linkage of all survey data. In the ASIA archive the following information is included:

- Identification variables (Asia Key, legal code and VAT code);
- Localization variables (Postal, municipality and province code);
- Classification variables (Ateco, and legal type);
- Size variables (Employers, employees and the net turnover);
- Demographic variables (births and deaths);
- Groups variables (code of the group of enterprises).

Looking at the quality of the available information, enterprise size seems to be a “key” variable. In fact, exhaustive information (which covers the whole universe) is available for large enterprises that have at least 100 workers, while for small and medium ones only sample data is available. A second characteristic that appears to be very important is the legal form, as the type of tax that an enterprise is required to pay depends on it. Another problem is to identify the business unit. This means basically choosing a variable which can be a unique key and act as a natural bridge between the different sources. In almost all firms’ databases the identification code is represented by the VAT code or the fiscal code.

The population is shown in the table below. It excludes the financial service sector because the sources available at ISTAT don’t cover it entirely.

Tab. 1 Business Register Asia, by business sector and legal type, year 2000

Business sector / Legal type	Unincorporated	Corporations	Total
Products from mining	2,069	2,067	4,136
Manufacturing	447,324	121,498	568,822
Electrical energy gas steam and water	432	1,761	2,193
Construction	445,667	75,482	521,149
Wholesale and retail trade services	1,210,299	134,175	1,344,474
Hotel and restaurant services	232,666	22,473	255,139
Transport storage and communication services	143,009	24,222	167,231
Real estate renting and business services	684,013	138,119	822,132
Other Services	424,950	35,824	460,774
Total	3,590,429	555,621	4,146,050
Percentage of firms	87%	13%	100%
Percentage of total employment	48%	52%	100%
Percentage of turnover	24%	76%	100%

The total corporate enterprises represent the population of reference of the corporate tax module. They are the 13 percent of the total, but they employ more than the 50 percent of the workers and produce the 76 percent of the total turnover.

The final dataset, made up by 495,882 corporations, is the result of integration steps here not reported for saving space. The interested reader may refer to Oropallo F. (2005).

3 BOOK AND TAXABLE CORPORATE INCOMES

Management calculates corporate income for two external purposes each year. The first is for financial reporting purposes under generally accepted accounting principles and the second is done in accordance with the fiscal code to determine the corporation's tax liabilities. Financial accounting income is intended to provide outside stakeholders (investors, creditors, regulators, *etc.*) with information about firm performance. In contrast, the objectives of the "tax-side" income are to provide a framework for efficient and equitable determination of tax liabilities and the subsequent collection of revenue, and to provide incentives for firms to engage in, or not engage in, particular activities, and to reward particular constituencies.

In Italy corporate income relevant for fiscal purposes is obtained from total business profits (loss) resulting from the company balance sheet adjusted according to specific fiscal rules. In particular, components of the business profits have to be modified in order to take account of fiscal criteria, which may affect positively or negatively the corresponding accounting variables. These fiscal adjustments reflect the difference existing between conventional accounting rules and business accounting for tax purposes. The usual example that can be made to clarify this point regards the definition of depreciation of both tangible and intangible assets provided by the tax law which differs from economic depreciation reported in the balance sheet. As for the fiscal year⁵ 2000 (the only year for which I have data), the procedure going from the profit to the corporate tax due was the following:

⁵ Accordingly, I focus on the relative tax return (Unico 2001).

Tab. 2 A sketched tax return for Italian Corporations (Modello Unico 2001)

ITEM DESCRIPTION	Fiscal Code
Post-tax income (loss) resulting from the balance sheet	RF3 (RF4)
+positive adjustment (not tax deductible items, <i>etc.</i>)	RF32
- negative adjustment (tax-exempt items, non-reported costs, <i>etc.</i>)	RF47
= corporate income for tax purposes	RF50=RN1
+dividend tax credit	RN3
- losses from previous periods brought forward	RN5
= taxable income	RN6
Income subject to the ordinary rate (37%)	RN7
Income subject to the preferential rate (19%, Dual Income Tax system)	RN8
= gross corporate tax	RN11
- tax reliefs (donations to political parties, <i>etc.</i>)	RN12
= net corporate tax	RN13
- tax credits (dividend tax credit, <i>etc.</i>)	RN20
= corporate tax due	RN29

To the present end, the above sketched tax form report (Modello Unico 2001) needs some further explanation. Firstly, the reported fiscal codes correspond to specific rows of the tax return and give an idea of the omitted sub-items. For instance, the missing rows between post-tax profit (RF3) and total positive adjustments (RF32) imply that there are twenty-seven⁶ sort of positive adjustments (see the next section). Then, it must be noted that RF3 is the book profit net of (income and regional) taxes. Therefore the present paper is different from the extant literature (Desai, 2003 and 2004; Mills and Plesko, 2003) because it focuses i) on Italian situation and ii) on the post-tax book income. In fact, here I focus on the differences between three incomes, namely RF3, RN1, and RN6. While it is possible to analyse the gap in order to address tax evasion issues, here the main focus is the gap in itself and it is worth recalling that it may be absolutely independent from fraudulent activities. In this sense the present paper is different even from the literature making use of tax gaps to explicitly deal with tax evasion (for a survey, see Bernardi and Franzoni, 2004). Needless to say, tax sheltering manoeuvres, window dressing activities

⁶ The row RF4 shows the loss resulting from the balance sheet, thus it does not belong to the adjustments (Table 2).

etc., impinge also on these tax incomes by modifying RF3⁷. Finally, since I deal with income gaps I will focus only up to the row corresponding to RN6. Given the ongoing nature of the present paper other possible and interesting analyses are relegated in the agenda.

4 AGGREGATE ANALYSIS

The previous section should have cleared why the three incomes under scrutiny could drift apart. In this section I exploit the DIECOFIS database in search of some evidence. Since I have just one single year for aggregate data I may only offer some descriptive statistics. To this end, it seems productive to start quantifying the most important items as they emerge from the database.

Tab. 3 **Book-Tax Corporate Incomes**
(€, fiscal year 2000)

Item Description (Fiscal Code)	Total	Per Capita (1)*
Post-tax income resulting from the balance sheet (RF3)	44,893,081,302	128,160
Positive adjustment (RF32)	72,974,090,804	147,160
Negative adjustment (RF47)	49,886,496,574	100,602
Corporate income for tax purposes (RN1)	68,962,868,812	158,997
Taxable income (RN6)	66,453,807,118	175,555
Net corporate tax (RN13)	22,776,041,674	60,169

(1) The whole sample is made up by 495,882 firms. Since not all of them report, *e.g.*, post-tax profit or taxable income, per capita value are computed accordingly (*e.g.*, positive post-tax profit are reported by 350,288 corporations). For other details see Table 2.

Had all companies paid the full 37 percent corporate (top) tax rate on their 66.5 € billion in taxable income (RN6), their income taxes would have totalled 24.6 € billion. This latter amount could be, by and large, compared with 22.8 € billion, the net corporate tax (RN13).

⁷ It is well-known that even pre-tax corporate income can be manipulated for tax planning. Just to mention, large firms often adopt transfer pricing strategies to limit taxes exposures.

Per capita values show that RN6 is the largest income. This somewhat puzzling outcome is due to the presence of 83,449 firms with positive taxable income and negative RF3. The following Cartesian graph reports the data for all the four possible book-tax situations.

Graph 1 Firms distribution according to book-tax incomes

Post-tax income		Taxable income
55,201 (11%)	295,087 (60%)	
62,144 (13%)	83,449 (17%)	

RF3=Post-tax income; RN6=Taxable income
 When RF3>0, RN6=0 are added to RN6<0.
 When RF3<0, RN6=0 are added to RN6>0.
 For other details, see Table 2.

Graph 1 shows that the share of firms with coordinate (RN6>0; RF3<0) is greater than that reported into the (RN6<0; RF3>0) sub-space, respectively 17% and 11%. Focusing the attention to the RF3>0 situations, it results that eleven out of seventy-one firms (15.5%) do not pay taxes. In contrast, seventeen out of thirty (55%) “RF3<0 firms” presents positive taxable incomes.

Another interesting picture can be drawn by table 4, which gives a quantitative impression of the firm distribution according to their “income status”.

Tab. 4 Firms Distribution (1st column) and Income Values (€)

ABSOLUTE				
RF3	RN6	RF3	RN1	RN6
>0	≤ 0	6,351,948,426	2,324,325,900	
>0	>0	38,541,132,876	63,559,490,210	63,784,313,965
<0	<0			
<0	≥ 0		3,079,052,702	2,669,493,153
PER CAPITA				
RF3	RN6	RF3	RN1	RN6
>0	≤ 0	115,069	42,107	
>0	>0	130,609	215,392	216,154
<0	<0			
<0	≥ 0		36,897	31,990
RELATIVE				
RF3	RN6	RF3/RN1	RF3/RN6	RN1/RN6
>0	≤ 0	2.7		
>0	>0	0.6	0.6	1.0
<0	<0			
<0	≥ 0			1.2

I do not report negative values. RF3=Post-tax income; RN6=Taxable income; RN1=Corporate income for tax purposes. Other details under Table 2.

The first row, collecting income values for firms with positive post-tax income (RF3) and non positive taxable income (RN6), shows that these firms have larger negative than positive adjustments (see section 3) such that their RF3/RN1 ratio is 2.7. The remaining 2.3 billions euro disappear throughout the second income “race” from RN1 to RN6. In contrast, for the “normal” firms of the second row characterized by positive incomes, the adjustments almost double the income for tax purposes (RF3/RN1 is equal to 0.6), while things are not changed by the second race (RN1/RN6 is equal to one). The last row indicates the emergence of positive taxable incomes even for firms with negative post-tax income. As expected, the per capita values for these latter situations are much smaller than those for normal firms.

As already mentioned, the main difference between RF3 and RN1 is due to positive and negative adjustments. What is behind that? By and large, the former deals with not tax-deductible items and with revenues not/under reported in financial accounting, the latter with tax-exempt items and with costs not/under reported in the balance sheet.

Table 5 show that the most important positive adjustments (columns A, B) are due to unpaid taxes (line 12), not tax deductible depreciation and amortization (line 24), and “other” positive adjustments (line 27), with shares of, respectively, 54%, 11%, 10%. The largest negative adjustments (columns C, D) are due to “other” negative adjustments, not-taxable income, and revenues coming from firm real estate “extra” businesses, with shares of, respectively, 44%, 20%, 8%. It is interesting to notice that among positive and negative adjustments the fiscal authority ask corporation to include, respectively, revenues and costs not/under reported in financial accounting. The relative impact of the former (columns A, B, lines 7,8,9) is zero for a total of 474,000 euros, while the latter amount to a huge 44% (22 billions euro; columns C, D, line 14). Needless to say, this result is not necessarily associated with misleading/fraudulent behaviour on the part of firms, but some suspicion remains (see the next section). Moreover it may help to explain why fiscal authorities are demanding for more and more details about the financial statement of the firms.

**Tab. 5 Positive (A, B) and negative (C, D) adjustments
Values (€) and composition (%). Fiscal year 2000**

A	B	ROW	C	D
4.033.871.553	6%	<i>1</i>	3.338.410.462	7%
494.429.490	1%	<i>2</i>	204.732.821	0%
192.903.561	0%	<i>3</i>	155.189.106	0%
2.331.370.295	3%	<i>4</i>	4.191.979.972	8%
1.714.888.925	2%	<i>5</i>	387.372.142	1%
133.240.790	0%	<i>6</i>	18.900.409	0%
259.299.662	0%	<i>7</i>	4.745.235	0%
122.783.684	0%	<i>8</i>	3.200.775.745	6%
92.735.983	0%	<i>9</i>	10.222.100.033	20%
397.267.246	1%	<i>10</i>	420.233.287	1%
106.937.590	0%	<i>11</i>	969.041.406	2%
39.697.204.218	54%	<i>12</i>	1.731.559.157	3%
69.644.006	0%	<i>13</i>	3.000.025.084	6%
16.145.213	0%	<i>14</i>	21.981.711.994	44%
170.998.907	0%	<i>15</i>	59.719.720,43	0%
1.037.928.939	1%	<i>16</i>		
2.054.961.055	3%	<i>17</i>		
155.416.114	0%	<i>18</i>		
958.385.419	1%	<i>19</i>		
884.396.500	1%	<i>20</i>		
286.454.555	0%	<i>21</i>		
1.462.067.581	2%	<i>22</i>		
34.450.661	0%	<i>23</i>		
8.041.050.075	11%	<i>24</i>		
597.479.126	1%	<i>25</i>		
217.602.032	0%	<i>26</i>		
7.410.177.625	10%	<i>27</i>		
72.974.090.804	100%	<i>TOTAL</i>	49.886.496.574	100%

See table 3. *E.g.*, the last row displays the figures corresponding to those identified by the RF32 and the RF47 fiscal codes in table 3.

5 DISAGGREGATE ANALYSIS

Looking for other stylised facts, I replicate at a more disaggregated level some of the experiments made in the previous section. In fact, fiscal policies are usually aimed to support some particular sector and/or region. Also, it is well known that firms face heterogeneous tax environments according to their size. These differences across industries/regions/sizes are possible explanations for why the reported tax liabilities of firms are differentiated. The following tables exhibit the situation for Italian corporations in 2000 as it emerges from the DIECOFIS database.

Tab. 6 Firms distribution according to the book-tax incomes

	RF3>0 RN6≤0	RF3>0 RN6>0	RF3<0 RN6<0	RF3<0 RN6≥0
Regions				
Piedmont, Liguria, Valle d'Aosta, Lombardy	7%	65%	10%	18%
Friuli V. G., Trentino A. A., Veneto, Emilia-Romagna	11%	58%	11%	21%
Abruzzo, Molise, Marches, Tuscany, Umbria, Latium	9%	61%	16%	15%
Sardinia, Sicily, Apulia, Basilicata, Calabria, Campania	21%	52%	15%	13%
Size in terms of employment				
0-9	11%	59%	14%	16%
10-19	11%	58%	10%	22%
20-99	11%	66%	9%	15%
100-249	14%	62%	12%	12%
>250	15%	59%	14%	12%
Industries				
Products from mining	9%	52%	27%	13%
Manufacturing	9%	63%	13%	16%
Electrical energy gas steam and water	2%	39%	11%	47%
Construction	22%	53%	12%	13%
Wholesale and retail trade services	10%	68%	9%	14%
Hotel and restaurant services	10%	64%	17%	9%
Transport storage and communication services	12%	41%	28%	19%
Real estate renting and business services	7%	58%	12%	23%
Education services	13%	52%	21%	14%
Health and social work services	16%	68%	2%	14%
Other community, social and personal services	17%	47%	22%	15%

RF3=Post-tax income; RN6=Taxable income. Other details under tables 1 and 2, and Graph 1.

Due to the several fiscal policies implemented over time, southern corporations face a more favourable taxation than the others. Thus, as expected, they show an almost triple share of firms with no taxable income

($RN6 \leq 0$), twenty-one out of seventy-three (35% vs 13%), despite their quota of profitable companies (*i.e.* with $RF3 > 0$) is comparable to the rest of the country (73% vs 70%). Among north-eastern non-lucrative firms, those with positive taxable income are the double than the others (21% vs 11%).

Figures referring to different sizes point out that a quarter of profitable firms with more than 250 employees do not pay taxes despite their post-tax income is greater than zero. The picture is different for middle-sized firms (20-99), for which the percentage falls to 16.6%. Corporations with 10-19 workers manifest the greatest share of uneconomic firms with positive $RN6$ (68.7%). Above the one-hundred-employees threshold, firms display similar conditions.

As for industries, income races outcomes are quite different. More than eight out of ten unprofitable firms operating in the electrical energy, gas, steam and water and health and social work services sectors report positive taxable income. The quota for mining, and hotels and restaurants is one-third. Considering only lucrative corporations, the income races lead to less volatile results. All industries display share of $RN6 \leq 0$ between 71% (construction) and 95% (electrical energy, gas, steam and water).

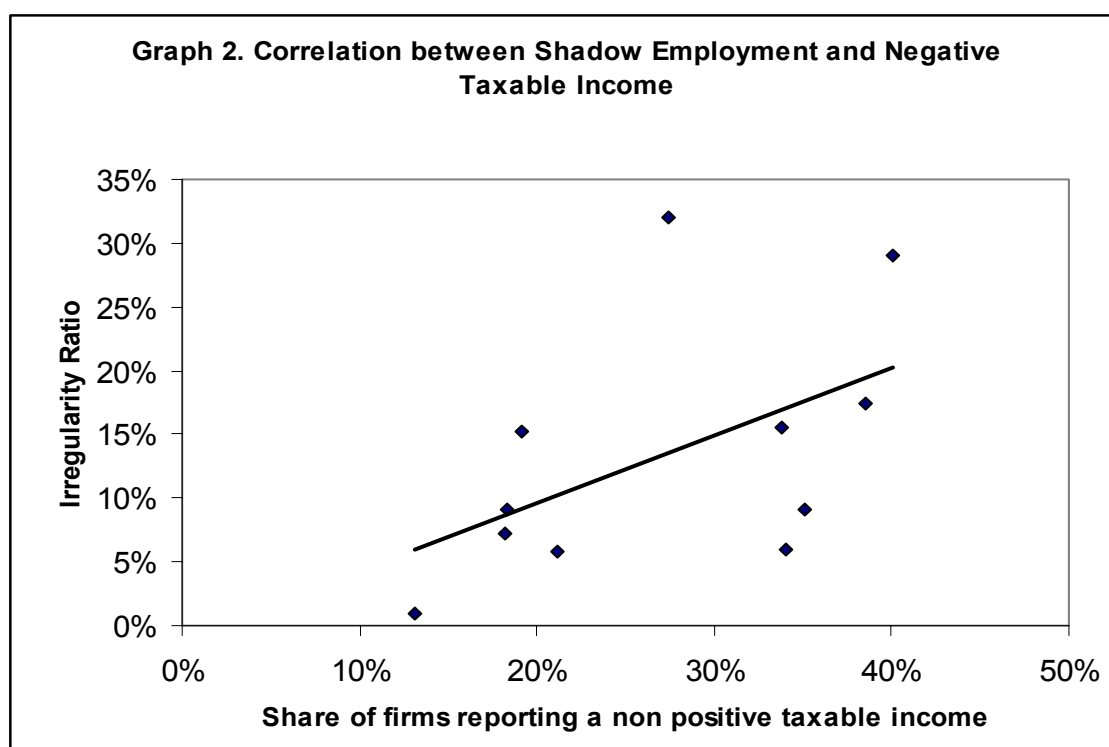
The disaggregated level of the analysis allows performing another intriguing experiment. The empirical literature in tax evasion investigates firm characteristics which predict the probability or the extent of the firm's evasion. However, no empirical papers explore book-tax differences as a possible signal of shadow employment. Here I try to fill the gap exploiting the data disaggregated for industries because the Italian national institute of statistics releases data for undeclared labour input (in full time equivalent units) even at the industry level. The attempt is easily explained. I compare the sectoral irregularity ratios (*i.e.* the share of irregular workers on total) with the above mentioned percentages of firms reporting a non positive taxable income ($RN6 \leq 0$ in terms of the previous tables and graphs). A possible signal that managers are fussing over their tax liabilities is a high, significant, and positive correlation between these two ratios. Otherwise stated, the more the shadow employment is widespread in an industry, the higher should be the share of its firms reporting no taxable income⁸. Actually, the data for the eleven industries described in Graph 2c show that the above mentioned correlation is high, positive (53%) and statistically significant (at the 99% level). Similar results are obtained with the non parametric Spearman rank correlation coefficient. Table 7 and graph 2 give a visual idea of the association.

⁸ It is noteworthy that tax evasion is potentially greater than that due to the presence of irregular workers. In fact, a firm may underreport revenues and/or over-declare its costs even without making use of hidden workers. We may say that shadow employment constitutes the "minimum" level of tax evasion.

**Tab. 7 Correlation between Shadow Employment and Negative Taxable Income
(year 2000)**

Sectors	Irregularity ratio	Share of firms
Electrical energy gas steam and water	0.9%	13.1%
Manufacturing	5.8%	21.2%
Education services	6.0%	34.0%
Health and social work services	7.2%	18.2%
Products from mining	9.1%	35.1%
Wholesale and retail trade services	9.1%	18.3%
Real estate renting and business services	15.2%	19.1%
Construction	15.5%	33.8%
Other community, social and personal services	17.4%	38.5%
Transport storage and communication services	29.0%	40.1%
Hotel and restaurant services	32.0%	27.4%

Data are ordered according to the irregularity ratio, starting from the lowest.



Data for fiscal year 2000, Italian Corporations (see Table 7).

6 CONCLUDING REMARKS

This paper presents an empirical investigation of the gap between financial accounting income and taxable income of Italian corporations. In the international literature there is little debate that these incomes are diverging, while what is causing the divergence and whether and how to fix it are very much open questions. In Italy, due to lack of data, the research languishes and even the basic quantification of the gap is still unknown. Possibly because of that, it seems that the existence of the differences between reported profits and taxable income causes little political costs. We may only note an increasing “attention” of the fiscal authorities about the companies’ balance sheets. In contrast, for instance, in the US the main reason why the alternative minimum tax system was introduced in the first place was that the criticisms by Congress and journalists that those firms which distributed profits as dividends without paying tax were accepted.

Against this background the present work is one of the first attempts to point out some stylised facts about the book-tax income gap of Italian corporations. This goal has been obtained by taking advantage of the DIECOFIS database. Although it is limited to the fiscal year 2000, it is very analytical (item-by-item), fully representative of the universe, and under continuous updating.

Results suggest that, as expected (why pay more?), in Italy there is an active industry set up to enable taxpayers to identify and utilize particular tax effects. A less expected outcome shows that the “income race” more often finishes in a quite different way, with unprofitable companies ending up with positive taxable incomes. Confirming previous results for the fiscal year 1997 (SECIT, 2000), a disaggregated analysis highlights that this latter situation is much less common among southern corporations and large enterprises, especially in the construction and in the hotel/restaurant services sectors, than elsewhere. Finally, data suggest that industries whose firms more frequently declare negative taxable incomes tend to display significantly higher shares of irregular workers, as well. A question naturally arise – is this picture what really lawmakers, and even managers, want?

To conclude, it must be remembered that some of the reasons why remunerative firms may not report tax liabilities or *vice versa* depend on the dynamic nature of the budgeting activity (e.g. losses carried forward from preceding tax years) and on overlapping fiscal policies. It means that the empirical evidence here reported should be thought of as the first step toward a dynamic analysis. This latter is paramount, especially for its potentially strong normative content. That is why it is in the agenda.

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