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OVERDUE TAX DEBT IN GREECE

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Abstract

Accumulation of overdue tax debts has been a thorn in the side of Greek fiscal policy in the past two decades. The dramatic accumulation of tax debts during the crisis of 2008 called for urgent reforms and measures to tackle the problem. Under the pressure of three Economic Adjustment Programmes, the MOU governments embarked on an effort to reform Greek Tax Administration, with emphasis on independence, depoliticization and wider digital transformation. This has been a slow process yet to be completed and the strains to the system introduced by the ongoing health crisis, make the need for reform even more urgent. The present paper puts overdue tax debts into perspective, analyzes the process of accumulation and brings out its main features, assesses the efficiency of Tax Administration and comes up with several policy recommendations. After we profile overdue debts stock and its characteristics, we compile an input-output table, which leads us to the composition of a series of indicators, which help assess the efficiency of tax administration in the context of the fiscal policies of the last two decades. The results of the research indicate poor quality of debts accumulated over time, as well as low efficiency of the Tax Administration, but with some improvement in recent years.

JEL classification: H29, H71, H80

Keywords: Tax Administration, overdue debt, tax collection, uncollectable debt, Compliance Gap.

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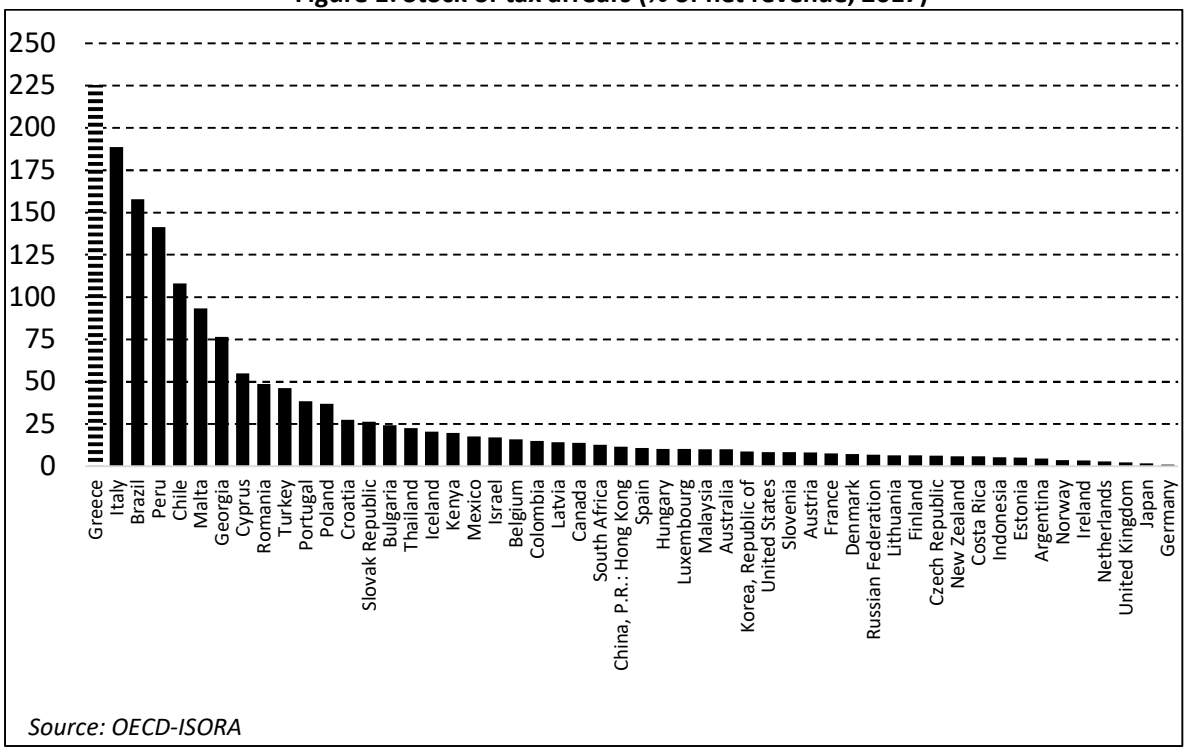
1. INTRODUCTION

The accumulation of overdue debts is a significant problem for Tax Administrations, which deteriorated during the 2008 economic crisis, resulting to €2 trillion owed globally to Tax Administrations by the end of 2017 (OECD, 2019a). As shown in *Figure 1*, Greece faces the biggest problem among the member countries of the Forum Tax Administration (FTA)[1], since collecting public revenue has always been the weak point of the country's Tax Administration (Khwaja & Iyer 2014).

Figure 1: Stock of tax arrears (% of net revenue, 2017)



Source: OECD-ISORA

The Code for the Collection of Public Revenue (CCPR) was introduced in 1974 and has been revised more than thirty times since, ¾ of these revisions having taken place during the Economic Adjustment Programmes. In 2013, the Tax Procedures Code (TPC) came into force, an ancillary piece of legislation that aimed at reinforcing effectiveness and fairness of tax collection. The extensive reforms of the Tax Administration in short time (IMF, 2011, 2013, 2014) have yet to prove a significant and sustainable effectiveness of collection (IMF, 2017, 2018, 2019). Since 2016, the Independent Authority for Public

[1]On average, this indicator stands at 32 %, i.e. the stock of tax arrears is about 4 months worth of total revenue. In the case of Greece, the respective figure of 225% means that debts to the Tax Administration represent tax revenue of 2 years and 3 months.

Revenues (IAPR), in effect an autonomous body[2], regulates and manages all tax collection issues, as well as other debts to the State, albeit not in control of social security collections.

Accumulation of overdue debts to the Greek Tax Administration remains a problem to proper fiscal planning and successful budget execution, reflecting policy distortions and administrative inertia of times past. In order to have substantial progress in this area we need an in-depth analysis of the systemic features and the introduction of the systematic understanding of the reasons that caused this major fiscal issue, as well as the formulation of suggestions for more effective management, seem imperative. All the above are especially significant today, after the spread of the COVID-19 pandemic, the fight against which, even on the level of proper tax policies, is a concerning issue for all OECD member states (OECD, 2020).

2. STRUCTURE AND MAIN FEATURES OF OVERDUE DEBT

In 2019, overdue debts (not including surcharges) to the Greek Tax Administration summed up to €105,427 M (57.5% of GDP). They accounted for almost 1/3 of the General Government debt (€331 bn.) and almost ½ of the total overdue private sector debts[3]. The above amount includes all taxes assessed, due for payment, but not collected, government guarantees, called and paid for and fines. It does not include Social Security Contributions and Customs revenues. It refers to 4.24 M debtors, of which 3.77 M (88.9% of the total) are natural persons, owing 34.8% of the total debt, and 0.47 M (11.1% of the total) are legal entities, owing the rest 65.2% (*Table 1*).

Table 1: Overdue debt per type of debtor (2019)

Type of debtor	Number of debtors	Overdue debt (in € M)
Natural persons	3,770,327	36,731
Legal entities	469,397	68,695
Total	4,239,724	105,427

Data Source: IAPR

Although the overdue debt more than doubled during the 2008 economic crisis (IMF, 2017), the problem

[2] In the sense that it enjoys full operational freedom, although the Ministry of Finance may control or affect targets and strategies. IAPR lacks legal form (being part of the core Executive), while it may be more exposed to government rather than Parliamentary review (as it should). For a full analysis see Δημητρίου (2006) and Κουτνατζής (2018).

[3] Concerning the rest overdue private sector debts, Social Contributions Collection Centre (KEAO) keeps track of about €35bn (KEAO, 2020). To these one should add about €69 bn. of (not performing) overdue private debt to the banks (Hellenic Parliamentary Budget Office, 2020).

existed before that, as shown in *Figure 2*. During the late 1990s, fiscal adjustment to the demands of the Maastricht Treaty criteria was primarily based on revenues (Karavitis, 2018; Κατσίμη, 2016), a fact that may explain the first significant accrual of € 9 bn. (or 6.4% of GDP) of overdue debts, till the end of the previous century. Both the overdue balance and the number of debtors did not show significant change until 2003, with the exception of the reduction of the former in 2002, owing to extensive debt write-offs in benefit of the Single Social Security Entity (guarantees called following Law 2972/2001, article 51). However, during the period 2003-2008 there was a significant increase in the overdue balance, while the number of debtors remained at the same level. According to *Figure 3*, the largest part of the increase in overdue debt came from Income, VAT, Property Taxes and Fines. In conjunction, the above figures suggest that the increase in total tax arrears during this period came mainly from the assessment of large amounts through audits. This was due to the application of a range of administrative penalties and sanctions[4], which in many cases was not governed by the principle of proportionality. As a result, in 2008, when the economic crisis started developing, the stock of overdue debts was already estimated at 12% of the GDP compared to around 2% of the Eurozone average (OECD, 2011). Until 2016, the consequences of the 2008 economic crisis had led to a rapid increase in both the overdue balance (reaching 53.5% of GDP) and the number of debtors (having increased more than fourfold). Although during the 2016-2019 period, the annual rate of increase in overdue debt was somewhat reduced, while the trend in the number of debtors seemed to stabilize, the accumulation of arrears remains significant, and the problem is expected to worsen due to the effects of the pandemic on economic activity, which is a disconcerting issue for most governments (OECD, 2020).

Figure 2: Overdue debt and number of debtors (2000-2019)

[4]The excessive fines contained in Act 2523/1997 were rationalized to a significant degree with Act 4174/2013 (TPC). However, the system remains counterproductive and in need of improvement (IMF, 2017).

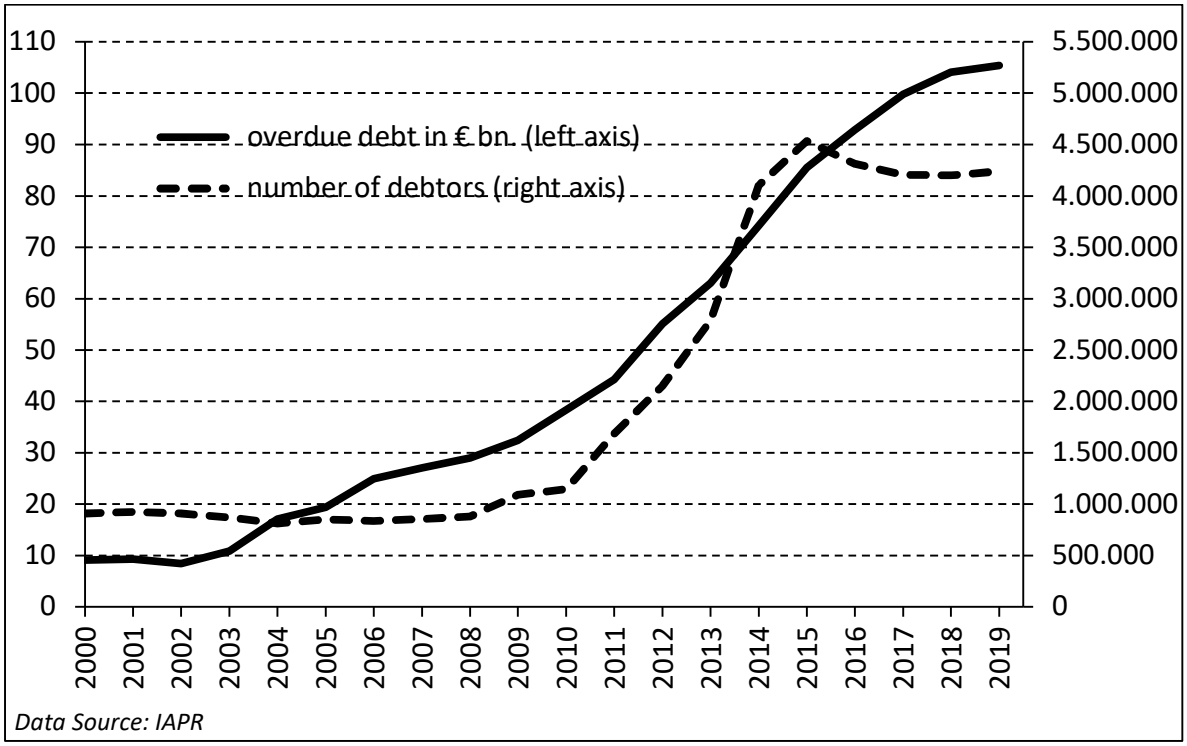
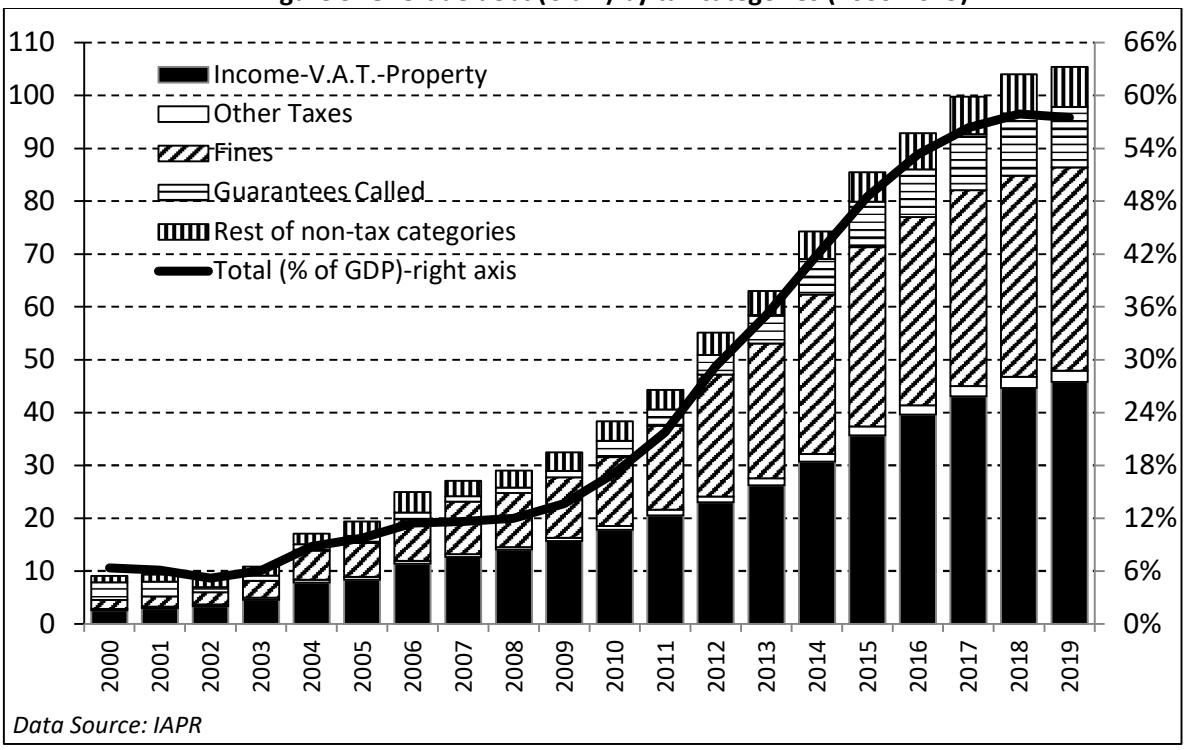


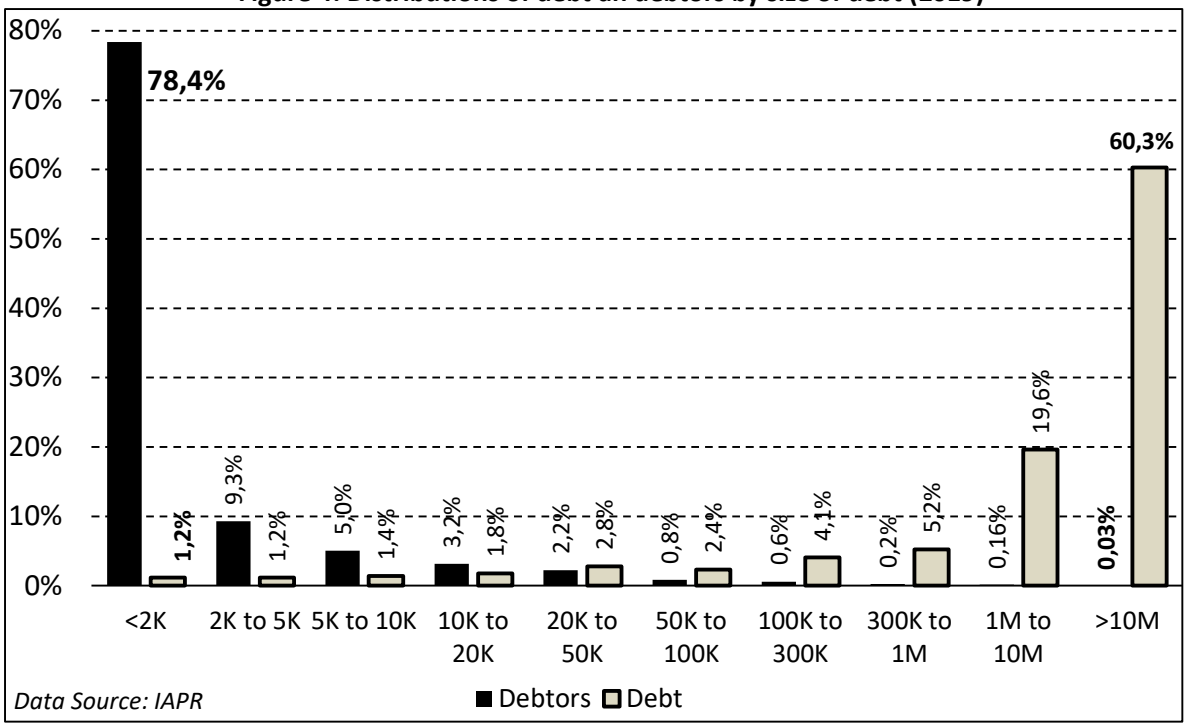
Figure 3: Overdue debt (€ bn.) by tax categories (2000-2019)



A strong feature of the distribution of overdue stock of debt is the concentration at the margins. As shown by the two characteristic and opposite distributions in *Figure 4*, large debtors (over 1M) form 0.2% of the total number of debtors and owe 80% of the total debt, while the respective shares for very small debtors

(less than 5K) are 2.4% and 88%.

Figure 4: Distributions of debt an debtors by size of debt (2019)



The impressive size of the accumulated overdue balance can by no means be considered as a reliable source of revenue for the future, at least not at its totality. According to the breakdown in *Table 2*, out of the €105.4 bn., only €65.7 bn. refer to original debt, of which €54.4 bn. stem from the private sector (€47.7 bn. of which are regarded as "collectable"[5]) and €11.3 bn. from the public sector. Regarding the latter amount, our estimate of €10 bn. relates to the Greek Rail[6], which means that it would not be proper to consider this as collectable. On top of the above amounts, we have fines summing up to €39.7 bn. (€26.3 bn. of which are tagged as "collectable").

Table 2: Collectable overdue debt and fines (2019)

in € M	**Original Debt**	**Fines**

[5] As judged by the Independent Authority for Public Revenue.
[6] See also its Annual Financial Statement for 2019 (ΟΣΕ, 2020).

	Collectable	Uncollect-able	Collectable	Uncollect-able
Public sector (incl. corp's)	11,279	0	0	0
Private sector	47,698	6,732	26,295	13,422
Total	58,977	6,732	26,295	13,422

Data Source: IAPR

In *Table 3* we have assigned the "officially" collectable and uncollectable debt to solvent and insolvent debtors with the exception of the public sector which is a separate case. It shows that out of €47.7 bn. of original debt and €26.3 bn. of fines, officially regarded as "collectable", €9.9 bn. and €4.4 bn. respectively come from insolvent debtors. This means that on top of €20 bn. officially declared from IAPR as "uncollectable", we should add an extra amount of €24.3 bn. of insolvent debtors and the Greek Rail, to sum up all non-performing items. Consequently, removing all non-performing-items, only 57.8% of total overdue debt would remain for collection (*Figure 5*). Seen from another angle, the attrition rate is estimated at 42.2% with substantial diversification into above mentioned categories as shown in *Table 4*.

Table 3: Stock of debt by source, class of debtor and collectability (2019)

in € M	Public sector	Under Liquidation		Bankrupt Debtors		Rest of Debtors		All Debtors	
Tax Categories	**Total**	**Total**	**Uncolle-ctable**	**Total**	**Uncolle-ctable**	**Total**	**Uncolle-ctable**	**Total**	**Uncolle-ctable**
Taxes	1,117	1,24	192	9,638	1,329	37,57	4,717	49,580	6,237
Income	*727*	*606*	*119*	*3,484*	*457*	*14,81*	*1,550*	*19,630*	*2,125*
Property	*5*	*16*	*0*	*48*	*0*	*2,637*	*1*	*2,706*	*1*
V.A.T.	*124*	*502*	*73*	*5,785*	*862*	*17,11*	*3,130*	*23,528*	*4,065*
Other	*261*	*120*	*0*	*321*	*10*	*3,013*	*36*	*3,716*	*46*
Fines	160	1,40	399	4,453	1,009	33,70	12,014	39,717	13,422
Tax fines	*158*	*1,39*	*399*	*4,392*	*1,008*	*32,51*	*11,993*	*38,461*	*13,400*
Non-tax	*2*	*10*	*0*	*61*	*1*	*1,184*	*21*	*1,257*	*22*
Guarantees	9,973	50	0	188	1	1,217	2	11,428	3
Misc. charges	30	62	1	258	33	4,353	457	4,702	491
Total	11,27	2,75	592	14,53	2,372	76,85	17,190	105,42	20,154

Data Source: IAPR

Figure 5: Collectability of overdue debts (2019)

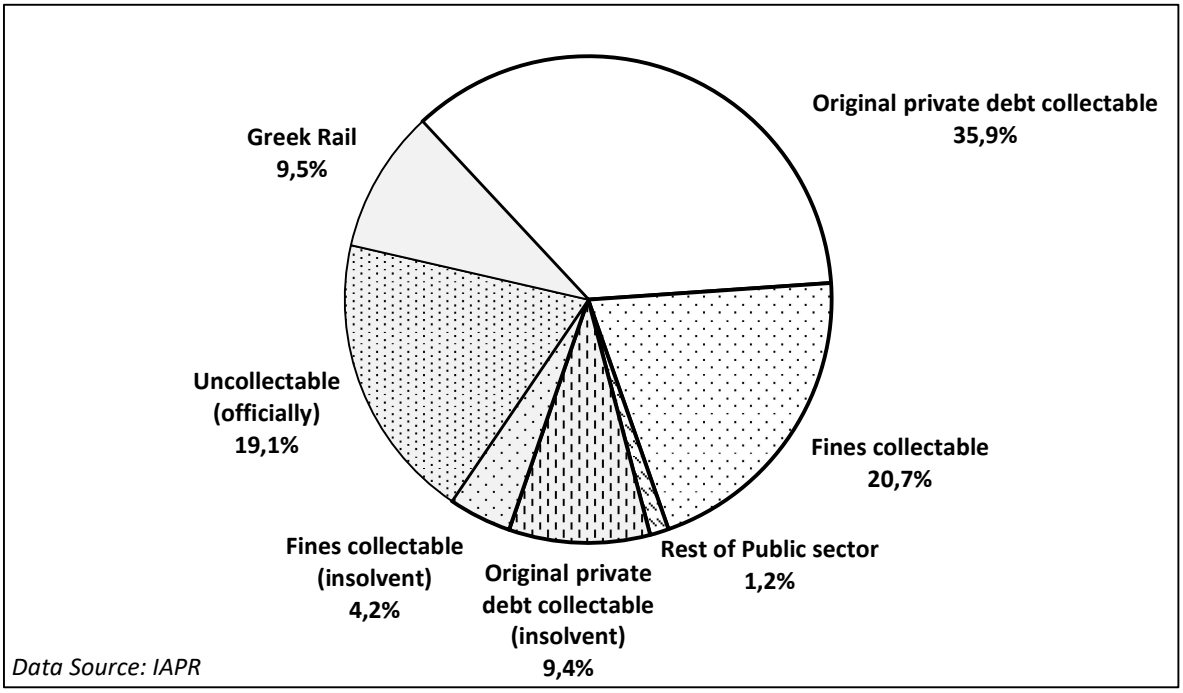


Table 4: Recoverable debt and attrition rates

in € M	**Recoverable debt**	**Attrition rate**
Taxes	34,717	31.0%
Fines	21,850	45.0%
Other	4,402	71.4%
Total	60,969	42.2%

Data Source: Own estimates from IAPR data

The aforementioned poor quality of the overdue debt portfolio is also related to the low percentage of debt that has been settled, in the sense that settlement signifies that the collection effort is turned away from unilateral claims of the State to amounts of mutual acceptance. As can be seen in *Table 5* and *Figure 6*, settled amounts account for a mere 8.6% of total collectable debt. The respective figures for natural persons and legal entities are 15.5% and 5.1%, an indication that the business sector finds it easier to dispute and hold in limbo overdue amounts than the households sector. A key element that emerges is the reduction of the settlement rate as the size of the debt increases, for both natural persons and legal entities. In fact, we can see that while small and very small debtors (up to 20K) tend to settle at a percentage around 45%, after that point the trend decreases smoothly and steeply to practically 0% for very high net worth debtors. An explanation for this behavior may lie in the high concentration of fines at the upper level of the distribution (see Box 1), for which the compliance cost increases, since the potential benefits from

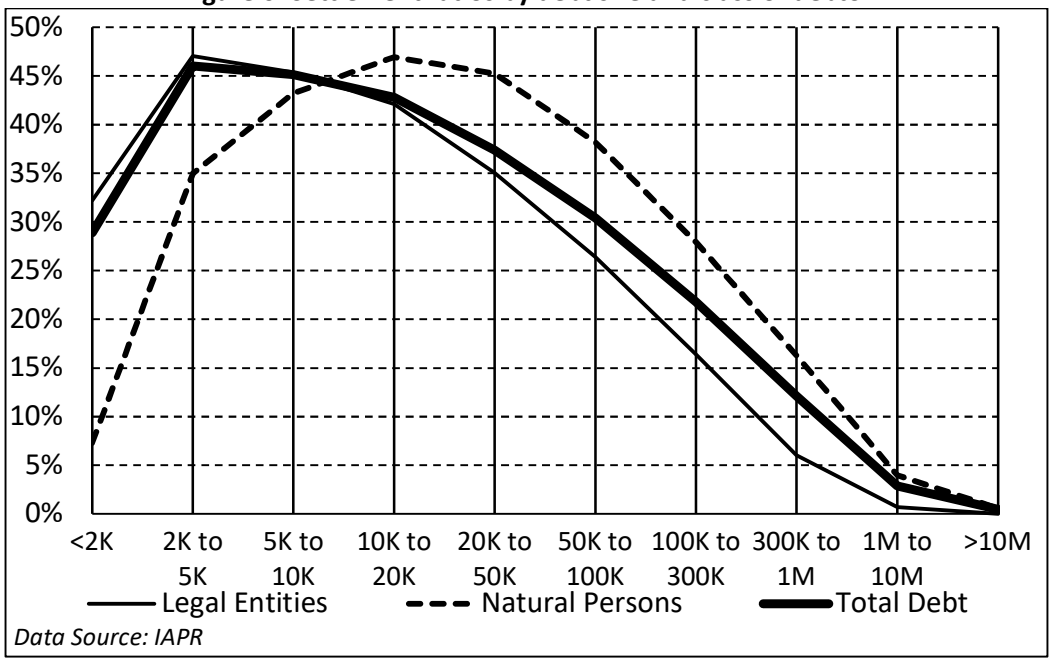
resorting to court action may be substantial to the extent that fines are delayed[7] and/or reduced.

Table 5: Total collectable and settled debt by debt size and debtor (2019)

in € M	Natural Persons		Legal Entities		Total	
Bracket	**Collectable**	**Settled**	**Collectable**	**Settled**	**Collectable**	**Settled**
<2K	1,074	346	165	12	1,239	358
2K to 5K	1,149	540	103	36	1,252	576
5K to 10K	1,332	604	166	72	1,498	676
10K to 20K	1,602	675	278	131	1,881	805
20K to 50K	2,258	791	668	302	2,926	1,093
50K to 100K	1,637	432	846	323	2,483	755
100K to 300K	2,271	372	1,988	555	4,259	927
300K to 1M	2,105	127	3,061	498	5,166	625
1M to 10M	5,810	42	11,633	462	17,443	503
>10M	6,035	0	31,117	176	37,152	177
Total	25,274	3,930	50,026	2,567	75,300	6,496

Data Source: IAPR

Figure 6: Settlement ratios by debt size and class of debtor

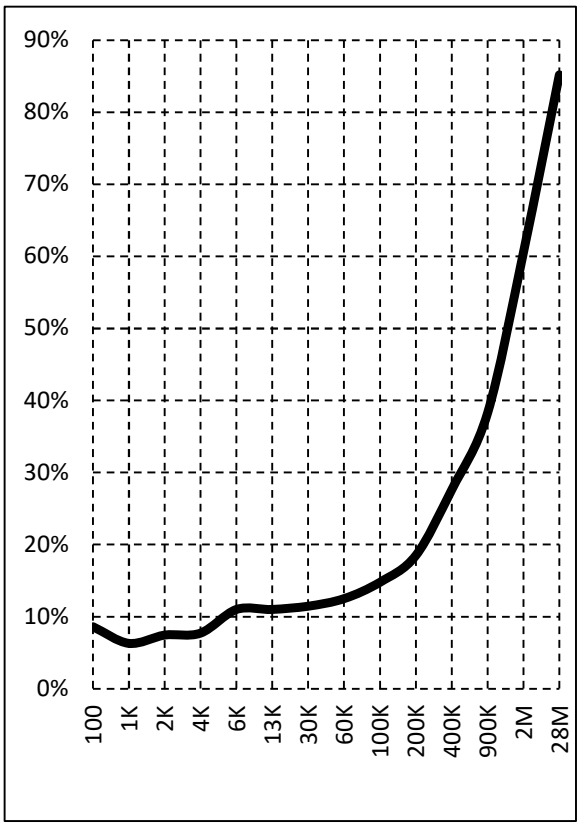


Data Source: IAPR

Box1: Progressivity of fines

[7] Given the notoriously lengthy processes of the Greek judicial system, court action seems quite attractive to taxpayers, especially in the corporate sector. Unfortunately, there is no available information regarding the share of tax arrears in dispute. In 2013 the average length of procedures was 5.3 years, while for VAT cases 9.3 (!). In this respect, Greece holds the worst record in the EU (ΣΕΒ, 2014).

Below we present some point estimates for the size of the **average** fine relative to the original size of debt (2019). Our estimates reflect the progressive character of fines that can be found in the legislation. However, they should be treated as mere indications, as fines are not uniform across tax bases and for all tax law breaches, they are imposed for a variety of reasons, with each rationale carrying its own amounts, and they can vary according to circumstances.



Debt Bracket (€)	Debtors	Debt	Fines
(0-10)	517,228	0.87	0.05
[10-50)	444,837	12	0.36
[50-500)	1,410,413	276	24
[500-2K)	949,877	870	55
[2K-3K)	192,905	440	33
[3K - 5K)	201,113	723	56
[5K - 10K)	213,575	1,350	148
[10K - 20K)	134,294	1,696	186
[20K - 50K)	94,977	2,630	302
[50K - 100K)	35,860	2,219	278
[100K - 150K)	12,861	1,363	201
[150K - 300K)	13,198	2,327	430
[300k - 1M)	10,424	4,329	1,196
[1M - 1,500,000)	2,007	1,768	677
[1,500,000 - 10M)	4,915	11,375	6,893
[10M - 100M)	1,162	15,685	14,295
[100M -)	78	18,644	14,943

Data Source: IAPR

3. THE INPUT-OUTPUT MODEL

The accumulation of such a large stock of overdue debts since the beginning of the century in practice reflects a significant *compliance gap*, which we analyze through an **input-output model.** Specifically, as shown in *Table 6A*, the stock of overdue debt (OD_t) in column (A1) changes following the stock-flow identity: ΔOD_t = (column A6) – (sum of columns A7 to A10), the output consists of collections and write-offs and the only input is revenues not collected (column A6, with its theoretical constituent parts A2 to A4 – see note NB1 in *Table 6A*).

Table 6A: An input-output model of overdue debt (€ bn.)

	(A1)	*(A2)*	*(A3)*	*(A4)*	*(A5)*	*(A6)*	*(A7)*	*(A8)*	*(A9)*	*(A10)*
		Current year operations					**Overdue stock operations**			
							Collections		**Write-Offs**	
Year	**Overdue Debt (OD)**	**Receipts due**	**Collected**	**Write Offs**	**Not collected**	***Not collected (IAPR adjusted)***	**of debt created in the past**	**of debt created in-year**	**of debt created in the past**	**of debt created in-year**
2000	9.084									
2001	9.323	26.182	22.711	0.254	3.218	*2.970*	0.542	0.692	1.277	0.220
2002	8.450	28.678	24.955	0.366	3.356	*3.133*	0.556	0.819	2.339	0.292
2003	10.860	32.603	26.508	0.735	5.360	*5.110*	0.651	0.936	0.541	0.572
2004	17.060	37.692	28.123	1.042	8.527	*8.426*	0.685	0.797	0.518	0.226
2005	19.370	35.479	30.035	0.254	5.190	*4.931*	0.769	0.856	0.811	0.185
2006	24.930	41.294	31.743	1.352	8.198	*8.130*	0.831	1.027	0.560	0.152
2007	27.060	43.371	34.472	0.610	8.289	*7.132*	1.237	1.121	1.710	0.934
2008	28.990	46.012	36.063	1.475	8.473	*9.174*	0.876	1.099	1.508	3.761
2009	32.450	41.666	35.190	0.243	6.233	*5.938*	0.884	1.166	0.321	0.107
2010	38.330	43.972	34.928	0.265	8.779	*8.519*	0.952	1.050	0.543	0.094
2011	44.260	43.105	32.929	0.298	9.878	*9.779*	0.832	1.337	1.386	0.294
2012	55.130	45.238	30.643	0.262	14.333	*14.142*	1.093	1.373	0.377	0.429
2013	66.990	41.218	29.028	0.369	11.820	*15.503*	1.711	1.477	0.275	0.180
2014	74.210	46.424	28.590	0.541	17.292	*11.972*	1.832	1.820	0.916	0.184
2015	85.500	44.846	26.669	0.977	17.200	*16.450*	1.889	2.438	0.577	0.256
2016	92.880	44.438	29.129	0.249	15.061	*14.137*	2.724	2.471	1.308	0.254
2017	99.790	44.836	30.978	0.863	12.996	*13.271*	2.859	2.244	1.064	0.194
2018	104.083	44.769	31.659	1.316	11.795	*11.359*	3.073	2.469	1.146	0.378
2019	105.427	52.879	31.497	10.375	11.006	*11.407*	2.849	2.517	1.862	2.835

Data Source: IAPR

NB1: Difference between columns (A5) and (A6) owes mainly to different time of recording. Current year's operations are recorded on 31 December, while IAPR sets year-end on 1 December for overdue debt operations. This means that transitions from one domain to the other will have to be adjusted accordingly, while simultaneous use of data from both domains introduces (small) inaccuracies.

NB2: (A5)=(A2)-(A3)-(A4)
Change of (A1)=(A6)-[(A7)+(A8)+(A9)+(A10)]

Using the variables of the **input-output model** in conjunction, we introduce in *Table 6B*, apart from the obvious indicator of Overdue Debt (as % of GDP), already presented in *Figure 3*, a set of performance indicators, related to the development of late taxation, the increase in Tax Administration's revenue, the ability

to collect current revenue, the ability to recover amounts arrears and finally the compliance gap, as the difference between assessments and actual receipts.

Table 6B: Tax administration performance indicators

	(B1)	*(B2)*	*(B3)*	*(B4)*	*(B5)*	*(B6)*	*(B7)*	*(B8)*	*(B9)*
Year	**GDP**	**ODII**	**RB**	**CCLI**	**ODRI**	**NDRI**	**ATR**	**FTR**	**CCGI**
2000	142.976								
2001	152.194	0.41		9.0%	6.9%	25.2%	*16.9%*	*15.7%*	1.2%
2002	163.461	-1.26	1.35	8.0%	8.0%	28.8%	*17.1%*	*16.1%*	1.0%
2003	178.905	3.02	0.71	12.3%	8.2%	20.6%	*17.5%*	*15.7%*	1.8%
2004	193.716	6.90	0.65	20.6%	6.6%	9.7%	*18.8%*	*15.3%*	3.5%
2005	199.242	4.75	2.43	11.8%	4.7%	18.0%	*17.6%*	*15.9%*	1.7%
2006	217.862	3.07	0.66	17.6%	4.4%	12.9%	*18.3%*	*15.4%*	2.8%
2007	232.695	1.25	1.41	14.9%	5.3%	18.1%	*18.0%*	*15.8%*	2.1%
2008	241.990	1.79	0.82	8.9%	3.4%	20.3%	*16.9%*	*15.7%*	1.1%
2009	237.534	-6.48	1.14	12.0%	3.1%	20.0%	*17.4%*	*15.7%*	1.7%
2010	224.124	-3.21	0.15	17.5%	3.0%	12.5%	*19.5%*	*16.5%*	3.0%
2011	203.308	-1.67	0.53	19.4%	2.3%	14.1%	*20.9%*	*17.3%*	3.6%
2012	188.389	-3.35	0.77	28.1%	2.5%	10.0%	*23.6%*	*17.6%*	6.1%
2013	179.616	-4.62	0.58	25.0%	3.1%	9.6%	*22.6%*	*17.9%*	4.7%
2014	177.349	-8.54	-0.06	33.5%	2.8%	15.4%	*25.8%*	*18.2%*	7.6%
2015	176.110	-21.77	5.53	33.3%	2.6%	15.1%	*24.8%*	*17.6%*	7.2%
2016	174.237	-8.11	-10.09	28.1%	3.2%	17.8%	*25.2%*	*19.7%*	5.5%
2017	177.152	4.45	3.06	24.1%	3.1%	17.2%	*24.7%*	*20.4%*	4.3%
2018	179.727	2.96	2.13	20.8%	3.1%	22.5%	*24.0%*	*20.7%*	3.3%
2019	183.414	0.63	-0.44	14.3%	2.8%	29.4%	*21.6%*	*20.1%*	1.5%

Data Sources: Eurostat (nama_10_gdp) - Table 6A

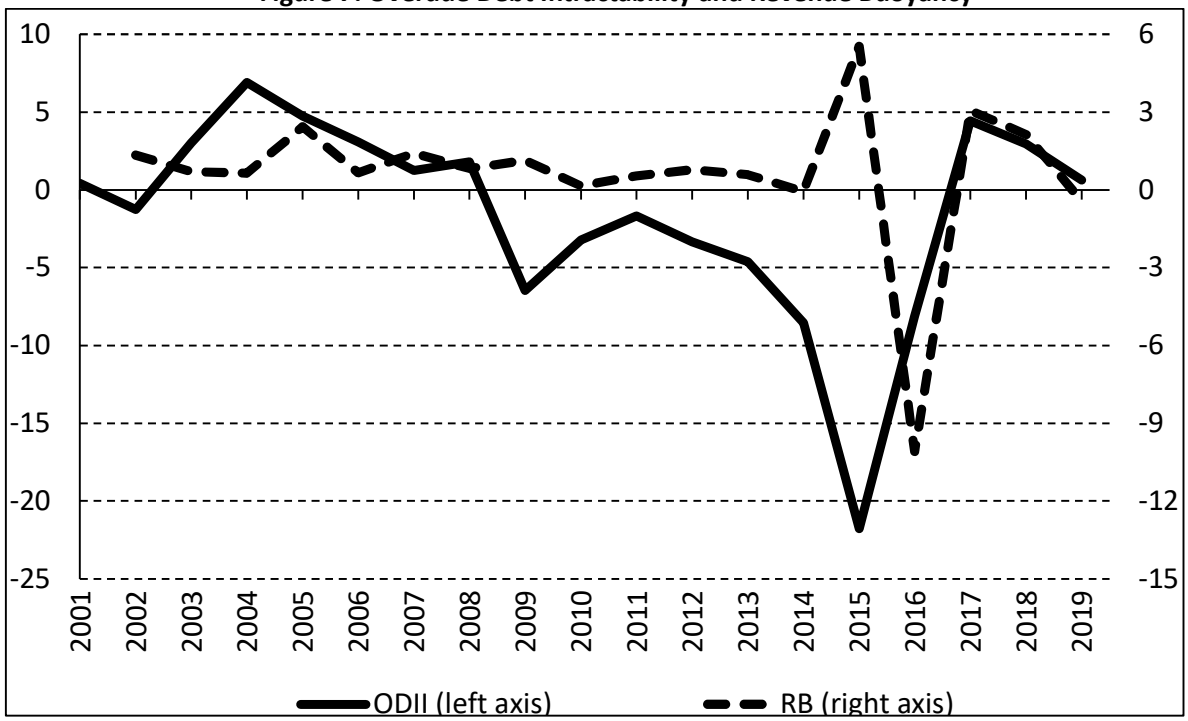
First, we have two general indicators (*Figure 7*):

(1) ***Overdue Debt Intractability Indicator (ODII)***: Actually, we use the concept of 'buoyancy' for the stock of arrears, which in our case is a rather poor term that should be interpreted as the 'despondence' of

collected revenues. It measures the degree of responsiveness of the overdue debt to the general economic conditions, as expressed by the GDP growth rate. Using *Tables 6A* and *6B*, we have (B2) = $\frac{\Delta(A1)}{\Delta(B1)} \cdot \frac{(B1)}{(A1)}$. Normally, one would expect ODII to be less than unity or even negative: the better (worse) the conditions get, the less (more) the overdue debt ratio will tend to increase.

(2) ***Revenues buoyancy (RB)****:* It measures the efficiency and the responsiveness of collected revenues to changes in GDP, or B(3)= $\frac{\Delta\,[(A3)+(A7)+(A8)]}{\Delta(B1)} \cdot \frac{(B1)}{(A3)+(A7)+(A8)}$. In the same sense as before, we would expect this indicator to be positive. Moreover, a value much different from unity would signify discreet policies at work, either at the tax policy or collection level.

Figure 7: Overdue Debt Intractability and Revenue Buoyancy



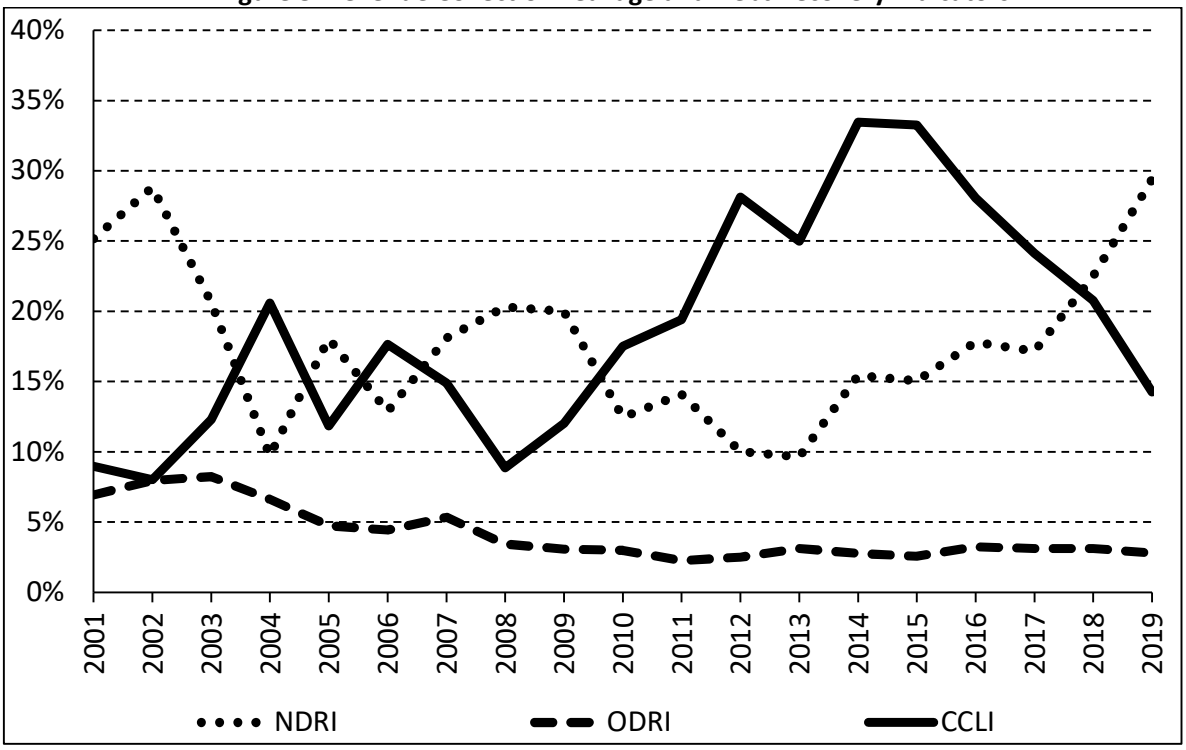
Second, we bring in three specific indicators to help with the analysis (*Figure 8*):

(1) The ***Current Collection Leakage Indicator (CCLI)***: It displays the effectiveness of collection against expected (after assessment) revenues. It includes collections against assessed obligations (net of write-offs) from all years expected to be met within the current year, or (B4)=$\frac{[(A2)-(A4)-(A10)]-(A3)-(A8)}{[(A2)-(A4)-(A10)]}$.

(2) The ***Old Debt Recovery Indicator (ODRI)***: It indicates how much of the old debt stock is collected in the current year, or (B5)=(A7)/[$(A1)_{t-1}$-(A9)].

(3) The ***New Debt Recovery Indicator (NDRI)****:* It shows the percentage of the receipts due in the current year, but not collected, that was finally 'salvaged' within the year, or (B6)= (A8)/[(A6)-(A10)]).

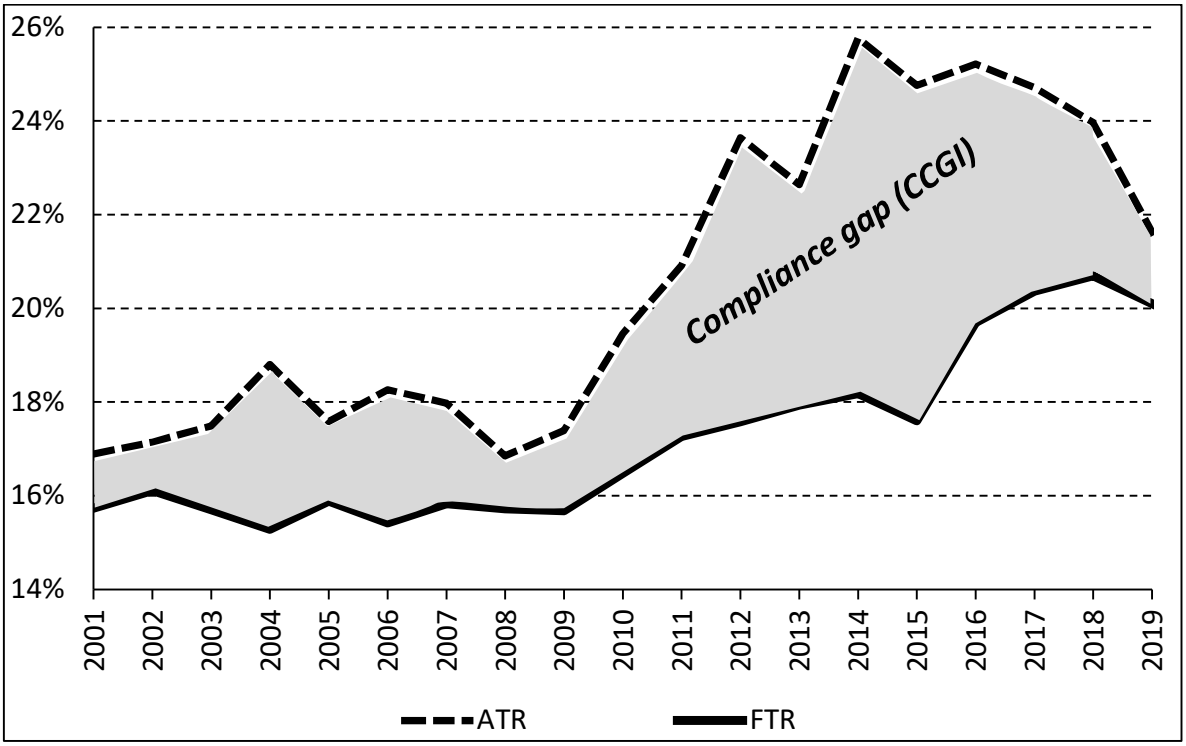
Figure 8: Revenue Collection Leakage and Debt Recovery Indicators



Finally, we have a ***Collection Compliance Gap Indicator (CCGI)***, which simply measures the distance between average and effective tax rates (*Figure 9*) along the lines suggested by Bird and Casanegra (1992, p.1). Following Τάτσος (2012), we define the **Average Tax Rate (ATR)** as the tax burden that the tax administration imposes on tax payers (in the form of assessments due as a percentage of GDP), or (B7) = [(A2)-(A4)-(A10)]/(B1). On the other hand, the **Effective Tax Rate (FTR)** is defined as the actual burden that tax payers bear (in the form of collections made by the administration as a percentage of GDP), or (B8)= [(A3)+(A7)+(A8)] / (B1).[8] The CCGI is the difference between the two tax rates, (B9)=(B7)-(B8), and it might be also interpreted either as the collection effectiveness leakage of the tax administration in terms of GDP or as the 'resistance' of the tax payers to the targets set by the tax administration.

Figure 9: The Collection Compliance Gap

[8] The reader may notice the analogies between ATR and FTR on the one hand and ATR and CCLI on the other.



In *Table 7*[9] we summarize the derived indicators, classified in the three sub-periods where the trend of debt accumulation presents a shift:

- *2001-2008 is the period of strong nominal growth (average annual rate of +6.8%)*. The ODII presents positive high values[10], indicating that the high GDP growth did not check debt growth. Taking into consideration the RB value, it turns out that while collections simply followed the GDP growth rate, debt accumulated much faster, which indicates that assessments had been too high to collect. Although there is no available direct information, all indications (such as tax rates and other taxation parameters of that time) point to profuse auditing rather than core tax policy. The CCLI was rather erratic in the pre-crisis years, registering an average of 12.9%, while the low levels of debt recovery indicators (ODRI 6.0% and NDRI 19.2%) confirm the aforementioned finding of inability to hold debt in a favorable period of strong nominal growth. The CCGI has moved in parallel with the CCLI, as expected, since the leakages of current collections mainly reflect the taxpayers' non-compliance with their tax obligations.
- *2009-2016 is the period of recession (average annual rate of -4.3%)*. The ODII values are negative and sizeable (-7.0), as expected, since the negative consequences of the economic crisis led to the

[9] Dark cells indicate max, light grey intermediate and white cells min values.
[10] The negative and higher than unity ODII in 2002 was rather circumstantial, owing to extensive debt write-offs of the Single Social Security Entity, as mentioned earlier.

increase both in overdue debt stock by €63.9 bn. and in the number of debtors by 3.5 million. The below unity value of RB (0.3) shows that collections did not decrease as much as income, indicating the significant increase of the tax burden, to which the tax policy resorted in order to compensate for the inevitably low tax capacity of suffering incomes. Thus, during the economic crisis a vicious circle of high assessments that led to high non-collections, which in turn boosted assessments further, was activated, Consequently, CCLI presented a strong deterioration reaching an average of 24.6%, while the increase of taxation in order to prevent tax revenues to follow GDP onto its downward path led to another vicious circle of rising taxation and abating economic activity (Karavitis, 2018). In this period, the CCGI reached its maximum value (4.9%), highlighting the 'resistance' of the taxpayers to the targets set by the tax administration.

- *2017-2019 is the period of weak growth (+1.8%) in the aftermath of the MOUs*. The ODII turned positive and above unity (1.6), but gradually diminishing, with only 2019 being below unity (indicating slower growth than that of GDP). This signifies some improvement in efficiency, but has not been enough to reverse the upward trend of the overdue balance. Although the RB value has doubled compared to the crisis period, it remains below unity (0.6), a possible sign of purposeful relaxation of tax policy. The CCLI subsided somewhat to 19.7%, along with the CCGI, which fell to 3%, both showing a picture of a fragile improvement, not reaching the pre-crisis level.

Table 7: Summary of Indicators

	2001-2008	**2009-2016**	**2017-2019**
GDP*	6.8%	-4.3%	1.8%
OD*	17.6%	16.2%	2.8%
ODII	3.6	-7.0	1.6
RB	1.0	0.3	0.6
CCLI**	12.9%	24.6%	19.7%
ODRI**	6.0%	2.8%	3.0%
NDRI**	19.2%	14.3%	23.0%
CCGI**	1.9%	4.9%	3.0%

* Average growth rate
** Arithmetic mean

4. CONCLUSIONS AND POLICY OPTIONS

Over the years the Greek tax administration has accumulated a tremendous amount of €105.4 bn. of overdue debts (2019), which represents about 50% of total private overdue debt (to IAPR, Social Security

and banks), involving 3.8 million individuals and sole proprietors and 469.4 thousand legal entities. Profiling the debt, we have identified several specific characteristics that contribute to the accumulation of poor quality debt. At first, we found that 80% of the overdue debt originated from very large debtors (debt>1M.) who make up only 0.2% of the total number of debtors. Furthermore, a significant part of the overdue debt (almost 17%) comes from insolvent debtors, although for the most part IAPR officially consider it as collectable. In addition, fines form a disproportionate share of overdue debt and possess an effectively highly progressive structure, which probably holds back the settlement ratio (estimated at only 6.5% of total debt). Thus, we estimate the attrition rate at 42.2%, although IAPR officially regards that 80.9% of the rest of the debt as collectable (attrition rate of 19.1%).

Through an input-output model we arrived at a set of performance indicators that describe various aspects of the debt accumulation process. The ODII presents positive high values in the pre-crisis years, while during the crisis years the values are negative and sizeable, indicating that the stock of debt accumulated at rapid rates, much higher than the growing GDP. In recent years ODIIs turned positive, with only 2019 being below unity (indicating that although debt grew this happened at a slower rate than that of GDP). The RB stood below unity during and after the crisis, indicating excessive taxation and stringent policies during recession and inefficient policies at the bounce-back. The CCLI was rather erratic in the years before the crisis, deteriorating strongly during the crisis, only to improve slightly in recent years. The levels of NDRI and ODRI are both quite low, although NDRI is considerably higher than ODRI, showing that it is more efficient to try and collect the most recent debt. Overall, the CCGI has moved in parallel with the CCLI, as expected, since the leakages of current collections drive overdue debt accumulation.

Significant reforms in the Greek Tax Administration have taken place in recent years, with great emphasis on independence and depoliticization (Dimitrakopoulos & Passas, 2020) and also on achieving wider digital transformation (Paipetis & Priniotaki, 2020), improving its performance according to the criteria set by models such as the *Maturity Model*[11] (OECD, 2019b). However, the accumulation of overdue debts persists and taking into account the guidelines set by the OECD (2019c), we believe that the following policies might be worth pursuing:

(a) **Filter out obsolete or bad debts** with practically no chance to be recovered (write-offs). This should not be an *ad hoc* process but a permanent, (semi-) automatic procedure for all debts (old and new), taking into account the type of the entity, its natural and business status (e.g., insolvency or quasi-

[11]This model includes five levels of maturity: Emerging, Progressing, Established, Leading, and Aspirational.

insolvency as in the case of the Greek Rail[12]), the size and age of debt and many other parameters. We have shown that about 40% of the stock of debt could be written-off[13].

(b) **A radical overhaul of the penalties system** (fines, surcharges etc, leading to substantial reductions). According to our findings, penalties probably function as a disincentive for compliance. The system, in general, has been criticized as counterproductive (IMF, 2017). There should be a much simpler permanent system in place *with a retroactive effect*. This would lower further the stock of debt, would bring down the ATR (assessments) and would enable more settlements and better collection of overdue debts. At this point, we should not underestimate the importance of other than monetary penalties. Research has long shown that the effect of the taxpayer's reputation works positively towards the increase in tax compliance (Allingham & Sandmo, 1972). In this direction, one could have a positive view of policies, such as the standard set by the Swedish Tax Administration (STA and SEA), whereas any information regarding tax debts is considered public (OECD, 2014).

(c) **Containment of the accumulation of uncollectable debts** (e.g. from insolvent debtors). This would allow for a further reduction of the stock of debt (about 5%), especially in anticipation of a new wave of insolvencies in the wake of the pandemic. To do this it is necessary to engage an effective *Compliance Risk Management (CRM)* system[14]. Introduction of a CRM would certainly enhance the collection rate of audits and subsequently could improve ODRI and NDRI and reduce the CCLI. Introduction of such an extensive *triage process* should employ a wide range of instruments, from Big Data analysis technologies[15] to behavioural economics analysis (Weber, Fooken, & Herrman, 2014) and use all required information about the debt, the debtor and the wider economic and business environment.

(d) **Boost the settlement ratio** in order to reduce the CCGI. In this respect measures may be taken in two directions:

1) Subsume more debts into settlement schemes. This requires that the procedure of

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[12] Act 3891/2010, as amended with Act 4337/2015, has already set the legal conditions for writing off Greek Rail's debts to the government. In 2017, the European Commission (2017) ruled that this would not constitute a government aid, thus opening the way to write off this huge debt.

[13] In the spirit of this suggestion, it would be useful for the monitoring system to record and codify the information about the legal status of the debt (whether it has been taken to court, at what stage etc).

[14] According to the fundamental principles defined by the Intra-European Organization of Tax Administrations (IOTA, 2016), a CRM is an essential defining element of a Tax Administration's operational strength (Chang, Gavin *et al*, 2020).

[15] It is crucial to change perceptions regarding the utilization of tax data, since these should not be considered as a component of the IT systems, but mainly as the Tax Administration's strategic operational capital (OECD, 2016).

informal administrative appeal has to become more attractive to the taxpayer and lead to a settlement. In particular, debts should be allowed to be broken down to their disputed and non-disputed parts. The taxpayer would then have to settle non-disputed amounts (also accounting as good will) and negotiate disputed ones only. This would allow putting in dispute *only* a part of the debt, while the rest will be collected. In all cases, the tax administration will have to fully document its decision (opposite to what is currently in force), so that it offers a more fair treatment to the taxpayer.

2) **Make settlement schemes a permanent feature** of tax collection rather than occasional and temporal events. Over the years, debt settlement schemes have been used by the tax authorities excessively and with varying degrees of success[16] and have always been hard sold to taxpayers as a 'last chance' before enforcement measures. Compared to other measures, settlements bear little political cost and are thus preferred by governments[17]. However, they are little believed despite governmental pledges, even of the most formal nature[18], since they are regularly on offer. Being thus *dynamically inconsistent*, settlements have created an issue of *moral hazard*, directly affecting compliance (Διεύθυνση Επιστημονικών Μελετών της Βουλής, 2010). A permanent framework for settlements schemes, easy to get in but hard to get out (unlike the usual practices of the tax authorities), with automated procedures for collection and enforcement measures (such as direct bank debit, full disclosure for missing payments, temporary revoking of licenses et al) and flexible arrangements to accommodate for the taxpayers' specific conditions (IMF, 2017) could certainly make settlements more effective.

(e) **Improve the collectability of VAT** as a means to drastically reduce CCLI. Given the high VAT share of tax arrears, the fact that Greece has the second-highest VAT gap among EU states (European Commission, 2020) the growing penetration of electronic means of payment and its contribution to improved VAT revenues (IOBE, 2021) and the current state of IT technology, it is imperative that VAT collections receive special attention. As a tax on transactions, VAT can be subject to automatic

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[16]According to IMF (2017), there have been over 50 settlement plans since 2001, which offered generous benefits.

[17] When former minister S. Manos argued in Parliament in favour of suspending the operation of shops due to over-due debts, saying that they expect to collect 100 billion drachmas (about €300M), the response of government MPs was 'So for 100 billion drachmas you will turn against us 600,000 store owners? Can't you make a settlement?' (Νικολάου, 1993)

[18]For example, in Act 4336/2015 it is explicitly stated that "*[...] the government firmly pledges to take powerful measures to improve collection and not to institute new payment plans or settlements or amnesty nor to extend the current measures*". Now, this is a fine example of an empty promise pompously articulated.

clearing and payment of the outstanding balances. This, of course, will have to work for VAT refunds, as well, especially to exporters (in the context of fair treatment). Suspect cases for tax fraud can be flagged in order to hold payment and be referred to auditing.

(f) **Improve the set of indicators and parameters that IAPR use**. It would be quite useful to have data regarding the legal status of each debt, breakdowns at the industry and geographic levels, distinctions relating to the type of debtor (household, sole proprietor, corporate) and the level of income and profitability, where applicable.

(g) **Adopt an approach of 'organization by taxpayer category'** rather than the current combination of 'organization by tax' with some elements of 'organization by operation' (Νανόπουλος, 2010). On this account, all financial and non-financial information will be used to determine what the most affordable schedule of payments for the taxpayer is. Taking this holistic approach will signify a turn away from bureaucratic to anthropocentric standards and will help tax administration to gain the taxpayers' confidence. One must recognize the formidable difficulties of such a project since it requires coordination of the government with IAPR, Social Security Funds and the banks. Although some steps towards this direction have been made with the establishment of the Special Secretariat for Private Debt Management and certain purpose-built units within IAPR, there is still a long distance to cover to an integrated system that will address simultaneously the problems of all creditors.

Although the policy options described above focus on limiting the overdue stock of debt to IAPR, they are unavoidably pertinent to wider issues, such as building credibility, developing tax compliance, impact of collection policies on and coordination with other micro- and macro-economic policies, the subsequent requirements for calibrating assessments and collections etc. It is also understood that certain solutions are beyond the operational limits of IAPR and require government decisions. What is quite apparent, however, is the urgency to implement the right policies since the pandemic is expected to exert further pressure on the system (Τράπεζα της Ελλάδος, 2021, p.170).

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