



Political cycle and reported labour incomes in Italy: Quasi-experimental evidence on tax evasion

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ABSTRACT

Tax evasion is a complex phenomenon affected by many factors and shaped by policymakers' and citizens' behaviours. Distinct claims about the acceptability of tax evasion between centre-right and centre-left coalitions have clearly emerged in Italy in the last decades. According to the ruling coalition, these different attitudes could have influenced tax compliance, affecting reported incomes of the self-employed, who have much more room to engage in tax avoidance or evasion strategies than employees. Using a longitudinal administrative dataset recording the entire working life of the sampled individuals, we focus on the period 1996–2005 (the only period when a complete bi-partisan political cycle took place in Italy) and, following a difference in differences design and carrying out fixed effects estimates, we test whether self-employed earnings, compared to employees earnings, significantly changed after the change in the ruling coalition. We find a clear reduction in self-employed reported earnings when the centre-right coalition ruled.

"Il prelievo fiscale corretto si aggira intorno a un terzo del reddito, se invece le tasse sono tra il 50 e 60% è troppo e così è giustificato mettere in atto l'elusione o l'evasione".

"The correct tax burden is about one third of the income; it is too much if the tax burden is approximately 50 or 60%, thus it is justified to resort to tax avoidance or evasion."

Silvio Berlusconi, speech during the electoral campaign, April 2008.

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1. Introduction

The economic literature shows that the self-employed and employees strongly differ with respect to their tax compliance (e.g., Andreoni et al., 1998; Bruce, 2000; Slemrod, 2007). In most countries, employees usually get taxes paid on their behalf by the employer, whereas the self-employed directly deduct taxes from their gross income, giving them greater opportunities to underreport labour income (e.g., artificially reducing proceeds or increasing production costs).

Weak party positions on combating tax avoidance and evasion may attract the self-employed's votes; likewise, different party attitudes towards the self-employed and tax evasion may affect the self-employed's propensity to correctly report labour incomes, affecting determinants of tax compliance and tax morale. On the one hand, different policies (e.g., measures easing tax avoidance or affecting the probability of receiving an audit) may be implemented by differently oriented parties, thus affecting the propensity of citizens to underreport their incomes. On the other hand, when a pro-self-employment party is ruling, the self-employed may feel that the political atmosphere is more favourable to their wishes—and this feeling may be strengthened by explicit politician claims or by the introduction of tax amnesties—thus leading the self-employed to expect fewer controls and risks in the case of inaccurate tax files.

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Disentangling the determinants of tax evasion is a crucial issue for Italy, which has one of the highest levels of tax evasion of any developed country (Schneider and Enste, 2000). Distinct claims about the acceptability of tax evasion between centre-right and centre-left coalitions have clearly emerged in Italy since the 1990s (Livadiotti, 2014). The centre-left coalition has often stressed that fighting against tax evasion is a priority, whereas Silvio Berlusconi, the leader of the centre-right coalition since 1994, has repeatedly stated that evading excessively high taxes is justifiable.

As confirmed by the analyses of elections carried out by political scientists (Caciagli and Corbetta, 2002; Diamanti and Lello, 2005), the self-employed—who represent a large share of the Italian workforce¹—are the strongest political constituency of centre-right parties, whereas the majority of private and public employees support centre-left parties. Therefore, right-wing parties should pay more attention to the needs and requests of the self-employed, who frequently ask for a large reduction in their tax burden and consider the centre-left coalition as “tax lovers” (Mastro Paolo, 2009).

However, it is very difficult to examine the effect of political cycles on tax compliance in Italy because Governments are usually in power for short periods and the Centre Catholic party *Democrazia Cristiana* had the relative majority of votes and was in control of the Government (in a coalition with other smaller parties) from 1946 until 1994. The only completely bipartisan political cycle took place in the decade 1996–2005, when the centre-left coalition was in control of the Government for a 5-year period (April 1996–April 2001) and, afterwards, the centre-right coalition ruled from May 2001 to March 2006.

The literature on political economy has extensively studied the effects on the economic variables due to the interactions among voters and politicians; however, to the best of our knowledge, no emphasis has been placed on examining the effects on citizens' tax compliance due to parties' attitudes towards different groups of workers and towards contrasting tax avoidance and evasion.

The original contribution of this paper is thus to inquire whether the Government change from centre-left to centre-right leadership affected self-employed tax compliance in Italy in the decade 1996–2005. Assuming that relative changes in reported incomes between self-employed and employees can be considered a good proxy of changing tax evasion, we aim to test whether the supposed different attitudes of the two ruling coalitions towards the self-employed and tax evasion (in addition to influencing the votes of self-employed and employees) led to an effective change in self-employed reported incomes—compared with employees' reported incomes—when the coalition in control of the Government changed.

We have at our disposal neither data on actual incomes earned by the self-employed and employees (hidden information) nor data on the amount of individual tax evasion found by the fiscal administration. Using a longitudinal administrative dataset where a person's entire working life and annual gross earnings reported to the public administration are recorded, we carry out panel fixed effects estimates and follow a difference in differences (DID) design, considering private employees (whose chances to underreport earnings are very limited) as the control group and two types of self-employed—craftsmen and merchants (i.e., the shopkeepers, both trader and retailer), the typologies of self-employed tracked in the administrative sample—as the treatment group and consider the coalition change in 2001 as the shock. Then, controlling for individual characteristics, business cycle and time trends, we carry out panel estimates to measure whether the self-employed reported earnings significantly changed compared with employees' reported earnings from 1996–2000 to 2001–2005.

Note that our strategy does not allow us to compute the share of real earnings that is underreported by the self-employed and employees. Instead, focusing on reported labour income, our strategy allows us to identify the change in income underreporting that follows a change of the ruling coalition, which we can interpret as a “marginal” effect of the Government change on tax evasion.

The paper is organised as follows. We briefly review the literature on tax compliance and political cycles (Section 2) and the main measures affecting tax evasion implemented in Italy in the period 1996–2005 (Section 3). Then, after having presented the characteristics of the dataset (Section 4), we use descriptive evidence provided by our dataset and other data sources about the living standards of self-employed and employees in the period 1996–2005 to corroborate our assumption that changes of reported incomes could be interpreted as changing tax evasion behaviours (Section 5). Afterwards, we present the empirical strategy (Section 6) and show our findings (Section 7). Section 8 concludes, summing up the main evidence.

2. Political cycle, tax compliance and its determinants: related literature

According to the seminal model of Allingham and Sandmo (1972), the rational taxpayer chooses the amount of the income to report and the quantity to evade when he/she fills in his/her income tax file. The decision is affected by the probability of being detected by the tax authority in case of underreporting and by the penalty in case of detection. Following this approach, tax compliance depends on the tax rates, audit frequencies and fines.

However, in the last two decades, the empirical research has shown that tax compliance is not fully explained by these variables because it also depends on individuals' “civic duty” (Orviska and Hudson, 2003) or “tax morale”, which can be defined as the intrinsic motivation to pay taxes and is affected by the moral regret or guilt over cheating on taxes (Torgler, 2005). Therefore, the choices of taxpayers depend both on rationality and on other factors such as the subjective perception of the beliefs and the behaviours of other members of the community (Kirchler, 2007; Erard and Feinstein, 1994; Fortin et al., 2004).

Investigating the determinants of tax morale, Lago-Peñas and Lago-Peñas (2010) notice that a high tax burden makes the taxpayers feel entitled to evade, and Feld and Frey (2007) argue that tax compliance is affected by a sort of “psychological tax contract” that citizens sign with the State on the basis of the fiscal exchange (public services versus taxes), the personal relationship between

¹ According to EUROSTAT data the share of the self-employed, representing about 10 million voters, is much higher in Italy than in other EU countries (in the last decade around 23% in Italy vs. an average share of about 14% in EU28 and EU15).

taxpayers and tax administrators and the political procedures.² Relevant to our aims, [Traxler \(2010\)](#) develops a theoretical model where tax morale is a social norm whose strength also depends on the compliance of the “morale leaders”, i.e., the politicians: when “moral leaders” start to violate the norm, negative spillovers on the perceived norm strength in the whole society can occur. However, [Doerrenberg and Peichl \(2013\)](#) state that the individual tax morale is quite stable; therefore, changing the direct determinants of tax compliance (as the probability of detection or the penalties) should lead to immediate responses in tax evasion, whereas it might take some time to change tax morale.

According to the literature, a Government change could then influence tax compliance when the ruling coalition differently affects the two aforementioned sets of determinants of tax evasion: i) audit frequency, penalty sizes and tax rates; ii) tax morale, social norms and perceptions of the opportunities to evade taxes. Interestingly, these two sets of factors can interact, as shown by [Filippin et al. \(2013\)](#), who notice, in an empirical study concerning Italy, that a stronger tax enforcement, besides making evasion less profitable, also shapes taxpayers' behaviour, reinforcing their motivation to truthfully report their income.

However, despite the broad literature focusing on tax compliance and its determinants, limited attention has been devoted to research on the links between political factors and tax compliance, because tax evasion is not easily observable in policy games ([Rogoff, 1990](#)). Only a few studies have inquired into these links: [Kim \(2008\)](#) provides a theoretical model suggesting that tax evasion is influenced by the government's desire to control the economy; [Hibbs and Piculescu \(2010\)](#) argue that firms' incentives to evade depend on firm-specific thresholds of tax toleration that are affected by the quality of governance; [Skouras and Christodoulakis \(2014\)](#) show significant increases in tax evasion in Greece in the periods around elections.

As for Italy, to the best of our knowledge, no studies have analysed the link between Government changes and the amount of tax evasion or the size of the hidden economy through an econometric strategy. The only descriptive picture that suggests a link between the ruling coalition and the degree of tax evasion is found in a contribution to the online economic magazine “La Voce” by [Fiorillo and Gallegati \(2008, updated in recent years by Gallegati, in Livadiotti 2014\)](#). They consider the gap between the apparent tax burden (computed by dividing total public revenues by GDP, where the shadow economy size is included) and the real tax burden (computed by excluding the shadow economy from GDP) as a proxy of tax evasion in the period 1982–2012 and note that, according to this indicator, tax evasion rises when there is a centre-right Government, whereas it decreases when a centre-left coalition rules, and this evidence is particularly clear in the period 1996–2005 that we consider in this paper. Consistently, [Marigliani and Pisani \(2007\)](#)—measuring VAT evasion through the gap between effective revenues and the potential revenues due to the tax base recorded in the national accounts—found that VAT evasion decreased by 9 percentage points from 1996 to 1999 and increased by 4 percentage points in 2003–2004 (the last 2 years considered in their study).

The large majority of studies concerning Italy has instead inquired into a different issue—estimating the total amount of tax evasion through different data and methodologies—and all of these studies stress that the share of underreported income is much higher among the self-employed than among employees (e.g., [Bernasconi and Marenzi, 1997](#); [Fiorio and D'Amuri, 2005](#); [Marino and Zizza, 2012](#)): employees tend to correctly report their earnings, while the self-employed hide approximately 50% of their labour income.

3. Political cycle and anti-evasion measures in Italy

During the so-called “first Republic”—which lasted from 1946 to 1994, when a majority system replaced the previous proportional system, thus favouring the creation of two contrasting coalitions—Italy was always governed by a multi-party coalition led by the Christian Democratic party. Therefore, a political cycle did not emerge at all. Afterwards, the centre-right wing coalition (continuously led by Silvio Berlusconi) took control of the Government in March 1994, but its Government was replaced at the beginning of 1995 by a technical cabinet led by Lamberto Dini. Afterwards, two coalitions—centre-right (light grey bar) and centre-left (dark grey bar) in [Fig. 1](#)—were alternatively in control of the Government in Italy from the beginning of 1996 to the end of 2011, when the Berlusconi government was replaced by a technical cabinet led by Mario Monti.³ However, only in the decade 1996–2005 the ruling coalition was able to rule for the whole period that the legislature was in office (5 years). Therefore, an effective bipartisan political cycle emerged in Italy in this decade only, when the centre-left coalition ruled for 5 years,⁴ followed by 5 years of the centre-right coalition.

Looking at studies analysing voters' behaviours (e.g., [Caciagli and Corbetta, 2002](#); [Mastropaolo, 2009](#)), the centre-left coalition gained most of its support in 1996 from those who considered the fight against tax evasion and public corruption, defence of the welfare state and participation in the EMU as priorities. In contrast, the centre-right coalition received votes in 2001 especially from those who considered lowering taxes, increasing labour market flexibility and fighting against illegal immigration as priorities. Observing voters' behaviours according to their job categories, the centre-right obtained much higher electoral support among the self-employed (entrepreneurs, professionals, merchants, craftsmen): 63% and 68% of craftsmen and merchants voted for the centre-right coalition in the 2001 and 2006 elections, respectively ([Italian National Election Studies—INES, 2001, 2006](#)).

In public debates and during the electoral campaigns, different claims about the acceptability of tax evasion from centre-right and centre-left coalitions emerged in Italy. The centre-left coalition argued that fighting against tax evasion should be a national priority and appointed as Minister of Finance the economist Vincenzo Visco, who made introducing anti-tax evasion measures his priority and was nicknamed “Dracula” by the centre-right oriented press. In contrast, Silvio Berlusconi, the permanent leader of the centre-right coalition, has repeatedly stated that to evade taxes when tax burdens exceed 50% is a type of legal self-defence.

² Some authors point out that a direct democracy, as in Switzerland, is positively associated to tax morale ([Torgler, 2005](#); [Hug and Sporri, 2011](#)).

³ The second Centre-Left Prodi Cabinet was in power for less than 2 years (May 2006 to January 2008).

⁴ During the centre-left ruling period the Prime Minister changed twice, because Romano Prodi was replaced by Massimo D'Alema at the end of 1998 and D'Alema was replaced by Giuliano Amato in Spring 2000.

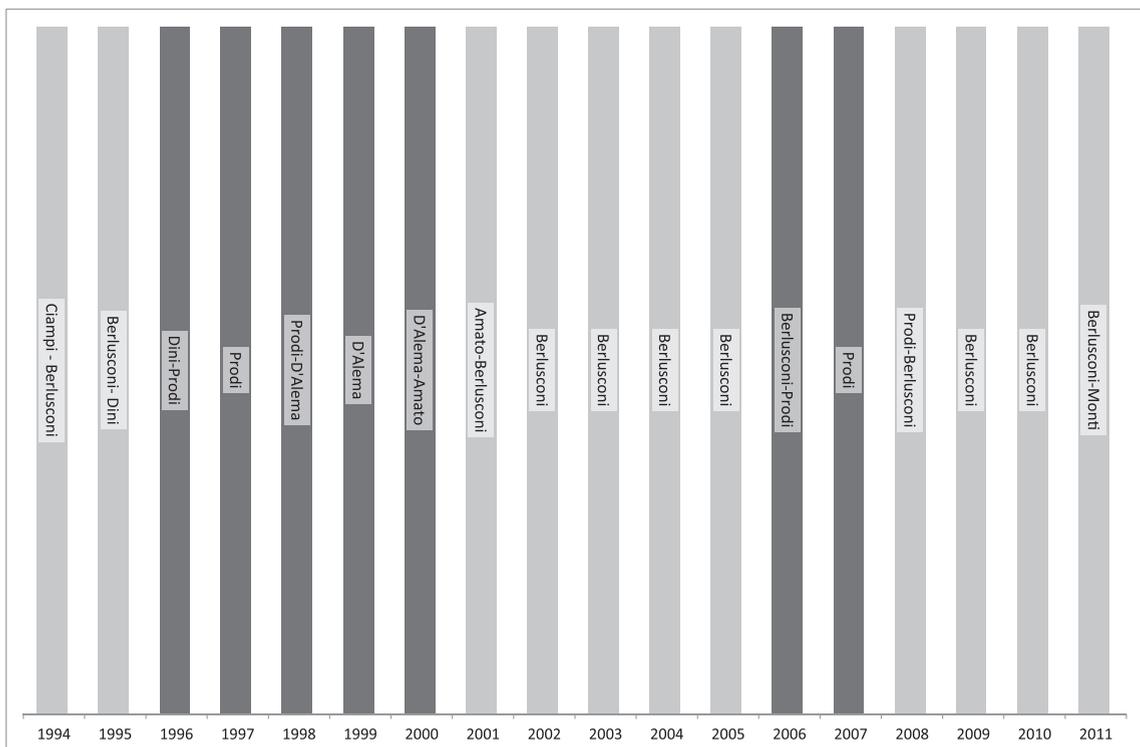


Fig. 1. Government coalitions in Italy in the period 1994–2011 (dark grey: centre-left; light grey: centre-right). In the years characterized by the change in the ruling coalition the colour depends on the attitude of the Government ruling for the longest period.

Consistent with the idea of a different attitude of the two coalitions towards tax avoidance and evasion and towards increasing the chances for the self-employed to underreport their incomes, different types of measures were implemented by the two coalitions when they ruled (see Table 1).

The centre-left Government introduced in 1998 an Audit scheme (*Studi di settore*) aimed at combating tax evasion. This scheme is based on the identification of the plausible proceeds of the self-employed and small- and medium-sized firms, where plausible proceeds are computed by tax authorities through complex algorithms, according to the main characteristics of the taxpayers (e.g., geographical location, number of employees, value of inputs and presumptive productivity).⁵ The tax agency can then audit only the taxpayers who report an income below a threshold that is known by the taxpayers.

By contrast, the centre-right coalition introduced several tax amnesties when it ruled.⁶ First, a tax amnesty on foreign capital and assets kept irregularly abroad (called "tax shield") was introduced in September 2001. Afterwards, a very extensive tax amnesty on personal income tax, VAT and other indirect taxes was introduced at the end of 2002, and the terms for the amnesty were renewed at the end of 2003. These amnesties allowed taxpayers to declare the evaded tax, thereby obtaining a large reduction in the tax due and the annulment of criminal liabilities. Furthermore, the centre-right Government de-penalised the "Forgery in balance sheet" in 2003, thus making it easier for fraud and corporate crimes to occur.

The direction of the effects of tax amnesties on tax compliance is theoretically undetermined (Andreoni, 1991). Tax amnesties could exert a positive effect on short-term and long-term revenues, changing behaviours of those individuals who would like to re-join the tax system but are constrained by fines. Conversely, tax amnesties could provide incentives for honest taxpayers to start evading taxes because they anticipate future new amnesties.

According to some experts (NENS—Nuova Economia Nuova Società, 2009), in a country such as Italy that is characterized by a large spread of small firms and self-employment activities, a two-pronged strategy is needed in order to increase tax compliance: on the one hand, measures increasing detection probabilities have to be introduced; on the other hand, policymakers should try to improve the tax morale, signaling to the citizens (also by introducing new anti-evasion measures) that policymakers feelings towards evasion have changed. Conversely, frequent amnesties could engender detrimental long-term spillovers on taxpayers' morale.

⁵ For details see Arachi and Santoro (2007).

⁶ During centre-left government periods only a limited tax contribution amnesty following the structural 1995 pension reform was introduced.

Table 1

Main policy measures affecting tax compliance introduced in Italy during the period 1996–2005.

Year	Government	Main laws
1996	Technical Cabinet then CL	Tax contribution amnesty (DL.295/1996)
1997	CL	
1998	CL	Audit scheme (<i>Studi di Settore</i> ; L.427/1993 in force since 1998)
1999	CL	
2000	CL	
2001	CL then CR	Tax “shield” (<i>scudo fiscale</i> ; D.L. 350 September 2001)
2002	CR	Tax amnesty (L.289/2002); “Forgery in balance sheet” (d.lgs. n.61)
2003	CR	Tax amnesty (L.350/2003)
2004	CR	
2005	CR	

4. Data

We use a longitudinal dataset of individual working histories, called AD-SILC, built by merging the Italian sample of EU-SILC 2005 with the administrative records on individuals' working histories since their entry into the labour market, which are collected in files managed by the Italian National Social Security Institute (INPS). AD-SILC is the first panel available for Italy that allows researchers to observe individual working histories since entry in the labour market. It has data up to 2009 and collects on a yearly basis detailed information from administrative sources on individual reported gross earnings (i.e., net earnings plus personal income taxes and contributions paid by the worker), working statuses and characteristics (e.g., age, region of work, and contractual arrangement).

For our purposes, INPS administrative data have the main advantage of exactly distinguishing employees and self-employed (i.e., persons who work in their own business) because these two types of workers are enrolled in different pension funds. More precisely, administrative archives allow one to identify private and public employees and “parasubordinate” workers,⁷ as well as the different categories of self-employed (e.g., craftsmen, merchants, architects and lawyers working as self-employed). Indeed, according to Italian law, public and private employees, “parasubordinate” workers and the various categories of self-employed pay contributions to category-specific funds.

However, due to some limits in the earnings records of professionals (e.g., architects, lawyers, doctors working as self-employed), “parasubordinate” workers and public employees in the INPS files, the analysis of this paper is performed by comparing private employees and two types of self-employed, craftsmen and merchants (the shopkeepers; the employees working in the shops are instead recorded by the administrative data as private employees). Nevertheless, craftsmen and merchants represent the large majority of Italian self-employed: according to INPS data, the share of craftsmen and merchants in the self-employed labour force is approximately 65%.

The administrative sources allow us to exactly reconstruct, for each individual, the time of entry into the labour market, actual seniority,⁸ pension contributions and reported annual gross earnings.⁹ Private employees' reported gross earnings include the employee contribution rate (constant at 9% since 1996), whereas craftsmen' and merchants' reported gross earnings include the total contribution rate (which increased slightly up to 19–20% in the observed period).

Reported gross earnings and pension contributions of employees refer to the amounts currently paid by the employers. By contrast, self-employed pension contributions in year t (and the records of the reported gross earnings related to those contributions) are paid as down payments during year t , and, eventually, a balance is paid in June of year $t + 1$, when the tax form for year t is submitted, according to the effective costs and proceeds of year t .

To avoid the possible endogenous choice of people moving between private employment and self-employment during the two political phases, in this paper we consider only workers who never moved from self-employment to private employment (or *vice versa*) in the period 1996–2005 (we drop less than 7% of individuals due to this restriction). The final sample used in our estimates is composed of 115,961 observations concerning 17,124 individuals who worked exclusively as private employees, craftsmen or merchants in the decade 1996–2005 (Table 2). Looking in detail at the individuals, the share of private employees is 81.5%, whereas 18.5% of the workers are self-employed (9.1% craftsmen and 9.4% merchants).

The main characteristics of the individuals included in the sample are shown in Table 3, where we see that private employees are younger than the self-employed, whereas on average in the period 1996–2005 their annual reported gross earnings (22,244 Euros, in constant 2010 prices) were higher than those of craftsmen (20,303 Euros) and merchants (20,450 Euros). The largest proportion of both private employees and the self-employed work in Northern Italy, and there is a majority of low skilled and male workers in our sample, especially among the craftsmen.

⁷ “Parasubordinate” workers, whose share in the labour force increased at the end of the 1990s, can be considered as bogus self-employed, because they formally work according to a non-subordinate contractual arrangement but, in most of cases, they actually work as they were employees and their labour income taxes are paid on their behalf by the employer. Therefore, as concerns their evasion behaviour, “parasubordinate” workers are much more similar to employees than to the self-employed.

⁸ Note that information about periods spent working as public employees, professionals or “parasubordinate” workers are used to compute individual experiences in the labour market.

⁹ To reduce the impact of outliers we dropped, in each year, the top 1% and those earning less than 1000 Euros (at 2010 prices). We include maternity and sickness allowances and the benefits received in cases of reduced working hours, as Cassa Integrazione, in gross earnings.

Table 2
Sample size.

	Values	%
<i>Observations</i>		
Private employees	93,488	80.6
Craftsmen	11,727	10.1
Merchants	10,746	9.3
Total	115,961	100.0
<i>Individuals</i>		
Private employees	13,957	81.5
Craftsmen	1,561	9.1
Merchants	1,606	9.4
Total	17,124	100.0

Source: Elaborations on AD-SILC data.

5. Living standards of employees and self-employed: descriptive evidence

Looking at the trends of gross reported earnings of employees and self-employed in the decade 1996–2005 (in constant 2010 prices; Fig. 2), our data clearly show that the mean annual reported earnings of self-employed and private employees narrowed in the period 1996–2000, when the centre-left coalition ruled (the gap reduced from 2800 to around 1000 Euros). Conversely, on average, self-employed reported real earnings reduced in the period 2001–2005 and a clear widening gap between the mean annual reported earnings of private employees and both types of self-employed emerged after 2001 (in 2005 the gap had grown up to 2400 Euros), thus providing a clear descriptive evidence of the decrease in reported earnings of the self-employed when the centre-right coalition ruled.

Our goal is to test whether the relative decrease of the reported income of self-employed is confirmed when fixed effects panel regressions—controlling for individual characteristics and macroeconomic trends—are carried out. However, before performing these regressions, it has to be noted that possible estimated changes of self-employed reported incomes cannot be directly imputed to changes of tax compliance. Indeed, a decrease in self-employed reported income could be due to other reasons in addition to the increase of tax evasion and avoidance, i.e., to an adverse economic cycle that mostly affects self-employed and brings about a decrease in the difference between effective revenues and costs. Therefore, it is crucial to verify that a decrease in self-employed reported income is not associated to an effective worsening of living standards of self-employed, in order to interpret such decrease as a signal of an increase in tax evasion.

Unfortunately, our dataset does not provide further proxies of workers' economic conditions over their reported earnings, and it does not record working hours, thus not allowing us to control whether changes of individual reported incomes after the Government change are due to a pure tax avoidance effect rather than to a labour supply effect acting on working hours and, subsequently, on reported income (although assuming that a political change could systematically affect individual preferences between leisure and working time of employees and self-employed without acting through tax avoidance is theoretically implausible¹⁰).

Nevertheless, we can rely on other data sources to verify whether the relative economic conditions of self-employed and employees changed during the 5-year periods of 1996–2000 and 2001–2005.

The survey on households' consumption conducted by ISTAT provides data about total annual consumption of households headed by self-employed and employees.¹¹ From these data, no evidence of lower consumption of self-employed after 2000 emerges; conversely, the gap in consumption between self-employed and high paid employees (managers and white-collars) dropped in those years (especially in 2004–2005) and the gap in consumption between self-employed and blue-collars widened (Fig. 3).

However, consumption could be sustained by reducing savings. The Survey on Household Income and Wealth (SHIW) conducted every 2 years by the Bank of Italy records households' disposable income and total consumption and savings (Fig. 4).¹² Using equivalent values to take into account households' sizes and considering as an index the ratios of the values of households headed by self-employed and private employees, it is not possible to envisage worsening conditions for the self-employed (Fig. 4).¹³ On the contrary, both equivalent consumption and savings of the self-employed relatively increased in 2002 and 2004 compared with 1998 and 2000. Furthermore, equivalent disposable total income (from different sources) and net individual earnings reported by the self-employed in the SHIW survey relatively increased compared with private employees' values when the centre-right coalition ruled.¹⁴

Actually, relative improving economic conditions of self-employed since 2002 are consistent with the evidence of price increases after the changeover from Lira to Euro favouring some groups of self-employed: [Adriani et al. \(2009\)](#) find that restaurants in the euro

¹⁰ If it is easier to evade taxes, variations of self-employed labour supply depend on the relative strength of income and substitution effects. On the one hand, tax evasion increases net wage, thus a substitution effect should increase labour supply. On the other hand, an income effect should reduce labour supply because the same total net income can be achieved working fewer hours. Anyway, it has to be stressed that in both cases changes in labour supply would stem from tax avoidance behaviours. As a consequence, changes in reported income would be directly or indirectly affected by tax avoidance. Hence, in the absence of tax avoidance, a systematic link between political changes and employees' and self-employed workers' labour supply is not theoretically conceivable.

¹¹ In the surveys used in this section, the household head is identified as the main income earner.

¹² SHIW has not been carried out in 1996, due to a change in the periodicity of the survey, who jumped from 1995 to 1998.

¹³ Consistently with the groups of self-employed considered in this paper, in Fig. 4 we do not include professionals and entrepreneurs among the self-employed.

¹⁴ [Marino and Zizza \(2012\)](#), comparing self-employed reported incomes in SHIW and in tax records, argue that self-employed underreporting is lower in SHIW than in tax records.

Table 3
Sample characteristics.

	Private employees	Craftsmen	Merchants	Total
<i>Mean</i>				
Gross annual earnings (constant prices; Euro 2010)	22,244	20,303	20,450	21,882
Age	36.8	42.8	42.6	37.9
<i>Distribution by gender</i>				
Male	60.9%	76.5%	59.6%	62.4%
Female	38.1%	23.5%	40.4%	37.6%
<i>Distribution by education</i>				
At most lower secondary	46.9%	63.2%	44.4%	48.3%
At most upper secondary	46.0%	33.3%	49.9%	45.1%
Tertiary	7.1%	3.5%	5.7%	6.6%
<i>Distribution by working area</i>				
North	56.6%	55.0%	49.9%	55.8%
Centre	24.1%	26.6%	22.9%	24.3%
South	19.3%	18.4%	27.2%	19.9%

Source: Elaborations on AD-SILC data.

area experienced abnormal price increases just after the changeover (over the effects due to menu adjustment and rounding up) and the change in relative prices had permanent effects advantaging price makers in the service sector and, in particular, in the catering sector. Likewise, [Gaiotti and Lippi \(2004\)](#) and [Marini et al. \(2007\)](#) show that in Italy the changeover shifted firms acting in less competitive industries (such as services and restaurants) to a higher-price equilibrium. Similarly, [Boeri and Brandolini \(2005\)](#) highlight that significant distributive changes across socio-economic groups occurred in Italy at the beginning of the 2000s, favouring managers and self-employed and disadvantaging productive and clerical workers.

Therefore, the evidence shown in this section suggests that we should expect a relative increase in self-employed reported incomes after 2000 and clearly leads to the assumption that a possible decreasing trend in income reported to administrative authorities by the self-employed, not associated on average with worsening economic conditions, would be due to a lower tax compliance. Therefore, by controlling for individual fixed effects and time trends, our dependent variable can be considered a good proxy for changes in tax compliance in the period 1996–2005. Actually, because an increasing trend in the relative incomes of the self-employed is expected, an estimated decrease in their reported income could be considered as a lower bound of the effective reduction of tax compliance.

6. Empirical strategy

As remarked in [Section 2](#), all studies about Italy note that the underreported income of the self-employed is much larger than that of employees. Indeed, the self-employed have much more flexibility in reporting incomes because it is up to them to declare their income and pay taxes, whereas employees' taxes on labour income are paid automatically by the employer. The different room for underreporting income between the two types of workers through tax avoidance and evasion is crucial in our approach because we assume that the change in the ruling coalition in 2001—which we interpret as a shock—impacted the two groups of workers differently, and, according to the remarks of [Section 5](#), we argue that a reduction of reported income, keeping other things constant, can be considered as a signal of a lower tax compliance.

In the present study, we carry out panel fixed effects estimates¹⁵ to test whether the descriptive evidence of a reduction in self-employed reported earnings after 2000 is confirmed when individual characteristics, business cycles and time trends are controlled for (individual fixed effects allows us to control for individual time invariant unobservable heterogeneity). Thus, we aim at identifying a pure effect on the self-employed propensity to underreport income according to the ruling coalition.

To this end, we first make use of a DID strategy where the Government change in 2001 is considered as a shock. The self-employed are the treatment group, because we assume that they can modify their tax compliance according to the ruling coalition, while the private employees are the control group, because we expect that their attitude towards paying taxes is not affected by the political cycle. Therefore, according to this strategy, we analyse the difference in reported incomes before and after the shock between the treatment group and the control group to identify the effect of the Government change on tax compliance.

The DID approach requires that individuals must be grouped by an exogenous variable to overcome the endogeneity issue; to satisfy this assumption, in the present study, as previously stated, we consider the sub-sample of workers who never moved between employment and self-employment in the 1996–2005 period. In technical notation, controlling for individual time varying characteristics¹⁶,

¹⁵ The choice of panel fixed effects models is consistent with the result of a Hausman test ($t = 200.04$; $p\text{-value} = 0.000$), which suggests that we should reject the null hypothesis about the equivalence of random and fixed effect models and use the fixed effect model. However, the relevant coefficients shown in the paper undergo very small changes when random effects estimates are carried out.

¹⁶ We can also include education attainments in fixed effects estimates because this variable is time variant in our dataset for individuals who improved their educational attainments in the period 1996–2005. Conversely, in fixed effects estimates the workers' category dummy treat cannot be estimated, because such category is time-invariant in our sample.

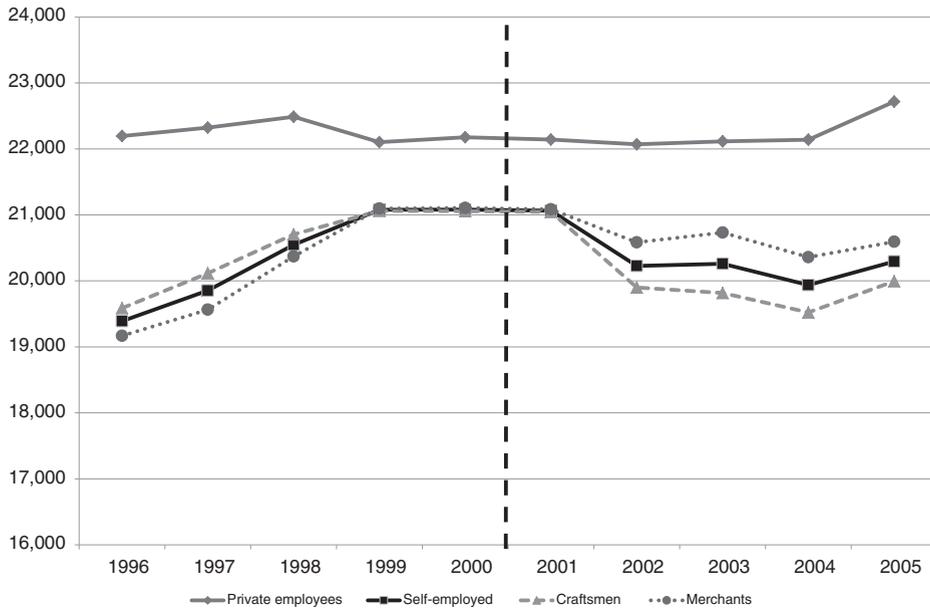


Fig. 2. Trend of mean gross yearly real earnings 1996–2005 (constant prices; Euro 2010). Source: Elaborations on AD-SILC data.

business cycle proxies (the annual GDP growth rate and the regional unemployment rate) and time trends, we estimate the following “common trend” model:

$$\ln w_{it} = \alpha + \delta post_t + \gamma treat_{it} * post_t + \mu C_{it} + \varphi P_t + \varepsilon_{it} \tag{1}$$

where i and t are, respectively, the individual and the year (from 1996 to 2005), the dependent variable is the log of annual reported gross labour incomes (considered at constant prices), C_{it} is a set of individual time varying controls, P_t is a vector of macro variables proxying the business cycle, $post$ is a time dummy equal to 1 if the observation is in the period after the shock (i.e., in the period 2001–2005), and $treat$ is a dummy variable equal to 1 for the self-employed and 0 for private employees. The coefficient γ of the interaction term $treat*post$ is the key coefficient (the treatment effect) because it expresses the change in self-employed reported earnings, with respect to private employees reported earnings, when the centre-right coalitions ruled. Therefore, a negative sign of

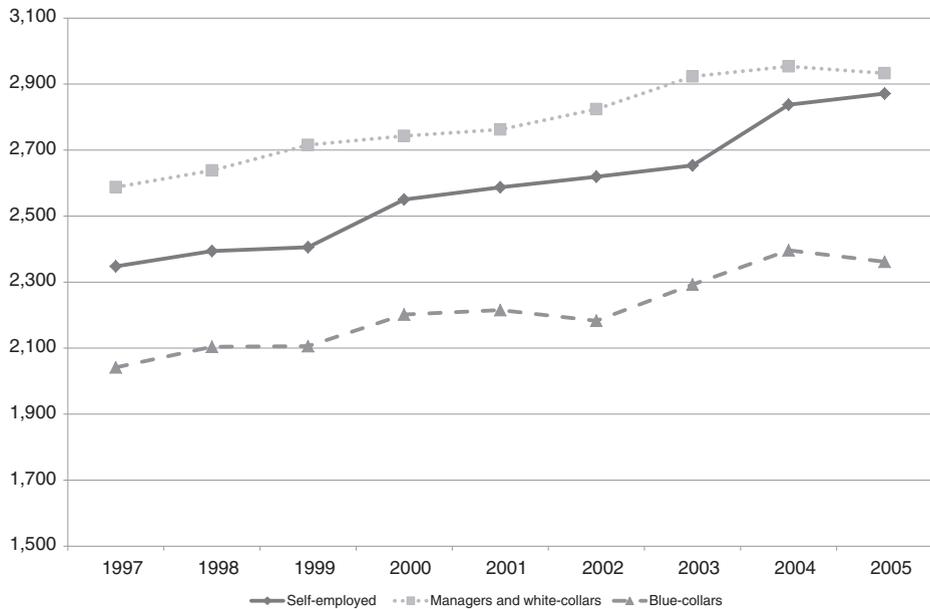
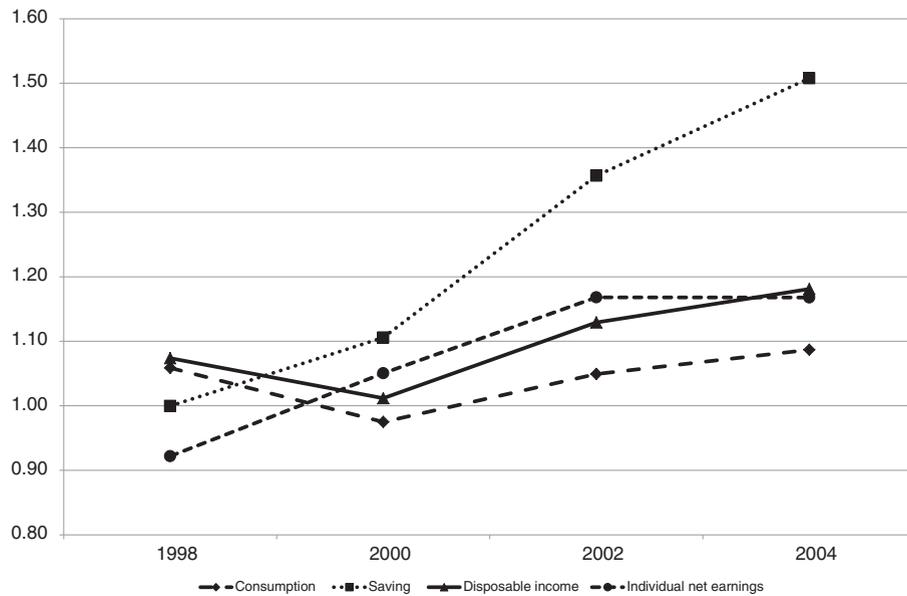


Fig. 3. Mean monthly spending of households headed by self-employed and employees (nominal prices). Source: Elaborations on ISTAT data “Survey on Household consumption.”



Source: elaborations on Bank of Italy "Survey on Household Income and Wealth"

Fig. 4. Trends of indicators of the relative economic conditions of self-employed and employees. Source: Elaborations on Bank of Italy "Survey on Household Income and Wealth."

the estimated coefficient γ signals a lower propensity to report income, i.e., a higher propensity to evade, when the centre-right coalition ruled, whereas the opposite holds if the coefficient is positive.

However, as shown in Fig. 2, our data are not fully consistent with the hypothesis of a common trend of reported income for the control and treatment groups before the shock because the gap between self-employed and private employees' reported earnings was narrowing before 2001.

Therefore, we extend our empirical framework without assuming the existence of a common trend for the two types of workers before the shock. Furthermore, to test whether the strength of the "treatment effect" varies over time—perhaps because it takes time for the self-employed to adjust to the Government change—in the extended specification, we do not estimate a single treatment effect for the whole period 2001–2005. Rather, we include specific time trends for the self-employed and the employees, built interacting year dummies and the worker's category; thus, we estimate the following "specific trends" model through fixed effects regressions:

$$\ln w_{it} = \alpha + \rho_t year_t * treat_{it} + \vartheta_t year_t + \mu C_{it} + \varphi P_t + \varepsilon_{it}. \quad (2)$$

The coefficients ρ_t of the interactions between the treatment dummy and the time dummies are the key coefficients because they express the relative change of self-employed reported earnings in the period 1996–2005 controlling, through the time dummies $year_t$, for the trend of employees' reported incomes. Therefore, a negative sign of the estimated coefficient ρ_t in a certain year t signals a lower self-employed propensity to report income in that year.¹⁷

Assuming in model (2) that the strength of the treatment effect may vary over time is also helpful for assessing the role played by the possible determinants of self-employed changing behaviours. As remarked, different coalitions could affect the self-employed "propensity" to correctly report labour incomes, modifying the audit frequency and penalty sizes or affecting the tax morale (e.g., through the spillovers engendered by frequent tax amnesties or by policy makers' statements minimising the negative values associated with tax evasion). Comparing short and medium term effects of the Government change could then allow us to indirectly disentangle the two sources of changing tax behaviours and to verify whether—over the role played by changes in enforcement parameters—an additional effect of the Government change on tax compliance could be due to gradual changes in the tax morale, which is expected to change slowly (Doerrenberg and Peichl, 2013).

7. Results

We start by performing fixed effects regressions according to the "common trend" model (Table 4). The estimated coefficient γ clearly confirms the descriptive picture shown in Fig. 2: compared to employees reported earnings, self-employed reported earnings significantly reduced by 7.5% in the period 2001–2005, when the centre-right coalition led by Silvio Berlusconi ruled.

¹⁷ Note that—having included time dummies and the interactions between time dummies and the treatment dummy—in the extended model (2) it is not possible to estimate the further effect of the post-2000 dummy and its interactions, because, due to collinearity, this dummy would be omitted in the estimates.

Table 4

Fixed effects estimates of the link between self-employed and private employees earnings and the Government change. Log of annual gross reported earnings. Common trend baseline model¹.

	Coef.	Std. Err.	t	P > t	90% Conf. interval	
Self-emp*Post 2000	−0.0751	0.0075	−10.04	0.000	−0.0874	−0.0628
Post 2000	0.0041	0.0055	0.74	0.461	−0.0050	0.0132
Seniority	0.0609	0.0015	39.67	0.000	0.0584	0.0635
Seniority ²	−0.0010	0.0000	−32.00	0.000	−0.0011	−0.0010
Upper secondary educ.	0.1994	0.0396	5.04	0.000	0.1343	0.2645
Tertiary educ.	0.4137	0.0604	6.86	0.000	0.3144	0.5130
GDP growth rate	−0.0014	0.0013	−1.06	0.288	−0.0036	0.0008
Constant	9.0786	0.0249	364.28	0.000	9.0376	9.1196
Number of obs.	115,961					

Source: Elaborations on AD-SILC data.

¹ “At most lower secondary” is the omitted category for education dummies. Robust standard errors are computed.

Table 5

Fixed effects estimates of γ coefficient. Common trend “full” model and robustness checks.¹

	Full model ¹	Balanced sub-sample ²	No election years ³
Self-emp.*Post 2000	−0.0716*** [0.0076]	−0.0568*** [0.0079]	−0.0871*** [0.0083]
Craftsman*Post 2000	−0.0660*** [0.0096]	−0.0571*** [0.0101]	−0.0861*** [0.0106]
Merchant*Post 2000	−0.0780*** [0.0104]	−0.0565*** [0.0111]	−0.0882*** [0.0115]
Number of obs.	115,961	64,760	92,931

*p < 0.10; **p < 0.05; ***p < 0.01.

Source: Elaborations on AD-SILC data.

¹ In the “full model” time and regional dummies, age, age squared and regional unemployment rate are added to the control variables already included in the baseline model in Table 4 (i.e., seniority, seniority squared, dummies on education and real GDP growth rate).

² The “full model” is run taking into account only individuals that are present in the panel for the whole observation period.

³ The “full model” is run excluding the two election years (1996 and 2001). Robust standard errors in parenthesis.

A negative and significant treatment effect also emerges when several robustness checks are performed. In particular (see Table 5), the size of the treatment effect remains large and significant (−7.2%) when we estimate a “full” model including further control variables (namely, time and regional dummies, age, age squared and regional unemployment rate)¹⁸ and when we run this “full” model on only a balanced sub-sample (i.e., we include only the individuals present in the sample for the whole observation period), even if the size of the effect decreases slightly (−5.7%). Interestingly, when the election years 1996 and 2001 are excluded from the analysis—because those years can be considered as hybrid due to the occurrence of the election, respectively, in April and May and due to the lack of time for the Governments to introduce new measures—the estimated effect enlarges (−8.7%). Moreover, a large and significant decrease of reported self-employed incomes with respect to private employees is confirmed when the two types of self-employed, craftsmen and merchants, are distinguished (see the second part of Table 5).

To control for additional sources of heterogeneity between private employees and the self-employed and to test whether the strength of the estimated effect varies over time, we run our favourite “specific trends” model, where the interactions between the workers' categories dummy and the year dummies are included (Table 6, where the trend of the estimated treatment effects in the period 1997–2005 is shown).¹⁹

The estimated coefficients ρ_t of these interactions clearly confirm that the gap between self-employed and employees reported earnings narrowed since 1997 up to 1999, whereas the gap greatly widened in the period 2002–2005.²⁰ Moreover, the size of the decrease in self-employed reported earnings (with respect to employees reported earnings) steadily enlarged (in absolute values) from −4.4% in 2002 up to −14.0% in 2005. Note also that the evidence of an increase in the relative reduction of self-employed

¹⁸ A significant and large decrease in self-employed reported earnings after the Government change is confirmed if we add the lagged dependent variable to the covariates. Detailed results are available upon request.

¹⁹ In other terms, the estimated coefficients of the interactions between the self-employment dummy and the year dummies in Table 6 express the yearly values of the average effect computed by the DID specification in Table 4 for the whole period 2001–2005.

²⁰ Note that the negative sign of the not interacted time dummies—which in the “specific trends model” represent the trend of private employees reported earnings—is due to the effect played by employees' seniority on their earnings (seniority is strictly related to time dummies in individual fixed effects models, also because private employees' wages are often automatically increased when seniority rises). Consistently, excluding seniority and its squared value from the covariates, time dummies coefficients become positive and statistically significant, while ρ_t coefficients do not change.

Table 6

Fixed effects estimates of the link between self-employed and private employees earnings and the Government change. Log of annual gross reported earnings. Specific trends baseline model.¹

	Coef.	Std. Err.	t	P > t	90% Conf. interval	
Self-emp*d1997	0.02237	0.00880	2.54	0.011	0.00789	0.03684
Self-emp*d1998	0.02204	0.01017	2.17	0.030	0.00531	0.03877
Self-emp*d1999	0.02761	0.01101	2.51	0.012	0.00951	0.04572
Self-emp*d2000	0.00722	0.01161	0.62	0.534	-0.01188	0.02631
Self-emp*d2001	-0.00300	0.01176	-0.26	0.799	-0.02234	0.01634
Self-emp*d2002	-0.04416	0.01218	-3.63	0.000	-0.06420	-0.02413
Self-emp*d2003	-0.06138	0.01259	-4.87	0.000	-0.08210	-0.04067
Self-emp*d2004	-0.08160	0.01307	-6.24	0.000	-0.10311	-0.06010
Self-emp*d2004	-0.08160	0.01307	-6.24	0.000	-0.10311	-0.06010
Self-emp*d2005	-0.14035	0.01415	-9.92	0.000	-0.16364	-0.11707
d1997	-0.04101	0.01168	-3.51	0.000	-0.06022	-0.02181
d1998	-0.06200	0.02194	-2.83	0.005	-0.09809	-0.02591
d1999	-0.08929	0.03240	-2.76	0.006	-0.14258	-0.03600
d2000	-0.10397	0.04292	-2.42	0.015	-0.17457	-0.03337
d2001	-0.12388	0.05357	-2.31	0.021	-0.21200	-0.03576
d2002	-0.14844	0.06433	-2.31	0.021	-0.25425	-0.04262
d2003	-0.16914	0.07493	-2.26	0.024	-0.29240	-0.04588
d2004	-0.19324	0.08562	-2.26	0.024	-0.33407	-0.05240
d2005	-0.17312	0.09602	-1.80	0.071	-0.33107	-0.01517
Seniority	0.08246	0.01089	7.57	0.000	0.06455	0.10037
Seniority^2	-0.00103	0.00003	-31.36	0.000	-0.00108	-0.00097
Upper secondary educ.	0.20211	0.03955	5.11	0.000	0.13705	0.26717
Tertiary educ.	0.42006	0.06033	6.96	0.000	0.32083	0.51930
Regional unemp. rate	-0.00030	0.00112	-0.27	0.786	-0.00214	0.00154
Constant	8.82440	0.13410	65.81	0.000	8.60381	9.04498
Number of obs.	115,961					

Source: Elaborations on AD-SILC data.

¹ Omitted categories for time dummies and interaction dummies are d1996 and self-emp*d1996; “At most lower secondary” is the omitted category for education dummies. Robust standard errors are computed.

reported income in the period 2001–2005 is confirmed when we carry out robustness checks through the “full” model and the “balanced” sample and when we distinguish craftsmen and merchants (detailed results are available upon request).²¹

Even if our empirical strategy does not allow us to precisely identify the roles played by changes of tax enforcement and tax morale, the rise of the “treatment effect” suggests that gradual changes of tax morale could have also contributed to the decrease of the propensity of the self-employed to correctly report earnings. Therefore, we can argue that the estimated decrease in self-employed reported earnings with respect to private employees reported earnings, more than only a mere consequence of the measures introduced by the different coalitions, could also be considered the outcome of a more general perception by the self-employed engendered by the different attitudes and claims against tax evasion of the centre-right coalition.

Likewise, our findings are also consistent with a different interpretation of the changes of tax compliance in the period 1996–2005: the higher tax enforcement efforts by the centre-left coalitions (implementing the *Studi di Settore*) could have increased self-employed tax compliance without deeply modifying their tax morale. Therefore, once the centre-right coalition came to power, the politicians' claims and the introduction of tax amnesties could have in a few years boosted tax evasion due to both the perceptions of fewer controls and the weakening of anti-evasion social norms.

8. Conclusions

Using a new panel dataset that allows us to follow individuals through their entire working career, in the present study, following a difference in differences design and performing fixed effects estimates, we tested whether self-employed reported incomes significantly decreased, compared with private employees' reported earnings, after the Government change that occurred in Italy in 2001 when the centre-right coalition replaced the centre-left one. Indeed, we argued that, *ceteris paribus*, the political cycle could have affected self-employed attitudes towards correctly reporting their labour incomes because the two coalitions that were alternatively in control of the Government in Italy in the decade 1996–2005 had different attitudes towards tax avoidance and evasion and towards the self-employed, who are more interested in reducing their tax burden.

²¹ Distinguishing workers according to geographical area (North, Centre and South), a higher impact of the government change on the self-employed propensity to underreport incomes emerges in the Centre (even if the effect is large and significant also in the North and in the South), and this holds true for both the common trend and the specific trend models, while no significant differences emerge in both models when we run regressions distinguishing males from females. Finally, it is interesting to note that, running quantile fixed effects estimates according to the Canay (2011) two-steps, no significant differences in the estimated treatment effects along the income distribution emerge in both common trend and specific trend models.

Consistent with our expectations, we find that (compared with employees) self-employed reported earnings were largely reduced during the centre-right wing government period (2001–2005) and, interestingly, the size of the estimated effects increased from 2001 to 2005.

Interpreting this evidence as a proxy of the influence of the political cycle on the propensity of the self-employed to underreport their incomes—because no evidence of worsening of self-employed relative economic conditions emerged from all available data sources—we can argue that moving from a centre-left Government to the centre-right Government led by Silvio Berlusconi significantly affected self-employed tax compliance.

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