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

Roberto Fantozzi (ISTAT and Sapienza University of Rome)

Michele Raitano (Sapienza University of Rome)

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

Abstract

Tax evasion is a complex phenomenon affected by many factors and shaped by policy makers' 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 dataset recording the entire working life of the sampled individuals, we focus on the period 1996-2005 (the only period when a complete political cycle took place in Italy) and, following a differences-in-differences approach, we compare the reported earnings of employees and the self-employed and test whether self-employed earnings significantly changed after the Government turnout. We find a clear reduction in self-employed reported earnings when the centre-right coalition ruled.

1. Introduction

The economic literature shows that the self-employed and employees strongly differ with respect to their tax compliance (Andreoni et al. 1998, Bruce 2000). 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).

Parties' weak positions on combating tax avoidance and evasion could then attract self-employed votes and, likewise, parties' different attitudes towards the self-employed and tax evasion could shape the self-employed propensity to correctly report labour incomes, affecting determinants of tax compliance and tax morale. On one hand, different policies (e.g., measures easing tax avoidance or affecting the probability of receiving an audit) could 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 could feel a political atmosphere more favourable to their wishes (and this feeling could be strengthened by explicit politician claims or by the introduction of tax amnesties), thus expecting fewer controls and risks in the case of inaccurate tax files.

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 '90s (Livadiotti 2014). The centre-left coalition has often stressed that fighting against tax evasion is a priority, while 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 – which represent a large share of the Italian workforce[1] – are the strongest political constituency of centre-right parties, while the majority of private and public employees support centre-left parties. Therefore, right-wing parties should pay more attention to needs and requests of the self-employed, who frequently ask for a large reduction in their tax burden, and tend to consider the centre-left coalition as "tax lovers" (Mastropaolo 2009). Consistently, Vincenzo Visco, the Minister of Finance during the centre-left Governments in the '90s and '00s, was nicknamed "Dracula" by the centre-right oriented press, while tax evaders are considered the most powerful Italian lobby by the left-wing oriented press (Livadiotti 2014).

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 (when the Italian Republic was born) until 1994 (when the so-called first Republic ended). 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

---

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

five-year period (April 1996-April 2001) and, afterwards, the centre-right coalition ruled from April 2001 to March 2006.

The political economy literature has deeply analysed how the interactions between voters and politicians affect economic variables, but, to the best of our knowledge, no emphasis has been placed on examining the effects of citizens' tax compliance on parties' attitudes towards different groups of workers and towards contrasting tax avoidance and evasion.

The original contribution of this paper is, then, to inquire whether the Government turnover from centre-left to centre-right leadership affected self-employed tax compliance in Italy in the decade 1996-2005. In other words, we aim to test whether the supposed different attitudes of the two ruling coalitions towards the self-employed and tax evasion, upon influencing the votes of self-employed and employees, led to an effective change in self-employed reported incomes – compared to employees' reported incomes – when the coalition in control of the Government changed.

We neither have at our disposal 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 panel dataset where a person's entire working life and annual gross earnings reported to the public administration are recorded, we follow a difference-in-difference approach, considering private employees (whose chances to underreport earnings are very limited) as the control group and craftsmen and dealers (the typologies of self-employed tracked in our sample) as the treatment group and considering 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 to employees' 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, it allows us to identify a "marginal" effect of the political cycle on tax evasion, i.e., the change in income underreporting that follows a change of the ruling coalition.

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 last decades (section 3). Afterwards, we present the characteristics of the dataset (section 4) and the empirical strategy (section 5). Finally, we show our findings (section 6). Section 7 concludes, summing up the main evidence.

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

Since the seminal contribution of Allingham and Sandmo (1972), the determinants of tax compliance and tax evasion have been broadly studied on both theoretical and empirical sides[2]. According to their model, the rational taxpayer chooses the amount of the income to report and the quantity to evade when he/she fills in their 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 size of the tax rates, on audit frequencies and on fine rates.

---

[2] For a review, see Andreoni et al. (1998) and Schneider and Enste (2000).

In the last two decades, some scholars have highlighted that the behaviours of taxpayers are also affected by social interactions (Erard e Feinstein 1994, Fortin et al. 2007, Wenzel 2002). In this context economic choices depend both on rationality and on other factors such as the subjective perception of the culture, the beliefs or the behaviours of other members of the community (Kirchler 2007). For instance, 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 political procedures and the personal relationship between taxpayers and tax administrators.

Therefore, in bipartisan models, the political cycle could influence tax compliance when the ruling coalitions differently affect the two aforementioned sets of determinants of tax evasion highlighted by the literature: i) audit frequency, penalty sizes, tax rates; ii) tax morale, social norms and perceptions of the opportunities to evade taxes. However, despite the broad literature focusing on tax compliance and evasion and on their determinants, to the best of our knowledge very limited attention has been devoted to study the links between politicians' attitudes and tax compliance.

Since the pioneering studies of Kalecki (1971), Nordhaus (1975) and Hibbs (1977), the influence of the political cycle on economic outcomes was thoroughly investigated. However, Rogoff (1990) noticed that tax evasion is not easily observable in policy games, while Alesina (1987) argued that tax evasion can be considered a latent variable – relaxed enforcement of selected laws – that affects a specific type of mis-governance. Following Meltzer and Richard (1981), the political economy literature has focused on the relationship between voters, income and redistribution, suggesting that higher market income inequality increases support for redistributive policies, thus causing tax rates to increase, but also in these studies tax evasion has not been taken into account.

The few studies that have inquired into the relationship between political cycles and tax compliance are Kim (2007), who provides a theoretical model that suggests that tax evasion is influenced by the government's desire to control the economy, Hibbs and Piculescu (2010), who argue that firms' incentives to evade depend on the link between statutory tax rates and firm-specific thresholds of tax toleration that are affected by quality of governance, and Skouras and Christodoulakis (2011), who show that a significant increase in tax evasion emerged in the periods around elections in Greece and interpret this evidence as "a type of mis-governance which arises from electoral cycles".

As for Italy, to the best of our knowledge, no studies have analysed the link between the political cycle and the amount of tax evasion or the size of the hidden economy through a robust 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 dividing total public revenues by GDP, where the shadow economy size is included) and the real tax burden (computed excluding the shadow economy from GDP) as a proxy of tax evasion in the period 1982-2012. These authors further note that, according to this indicator, tax evasion rises when there is a centre-right Government, while it decreases when a centre-left coalition ruled and this evidence is particularly

clear in the period 1996-2005 that we consider in this paper. Consistently, as an indirect sign of the link between political cycles and tax evasion, a descriptive report by LEF (2012) – without controlling for business cycles and other possible determinants – highlights that during the centre-left Governments there is a positive difference between the growth of the proceeds on which VAT is computed and the GDP. On the contrary, GDP growth rate exceeded VAT tax base growth when the centre-right coalition ruled.

The large majority of studies concerning Italy have inquired into a different issue – estimating the total amount of tax evasion through different data and methodologies – and all these studies clearly note that the share of underreported income is much higher among the self-employed than among employees: Bernardi and Bernasconi (1996) found that employee and self-employed evasion rates are, respectively, 12.9% and 68.5%; Bernasconi and Marenzi (1997) highlighted that employees evade at most 4% of their earnings while the evasion rate among the self-employed rises up to 53%; Fiorio and D'Amuri (2005) found that the self-employed are characterised by much higher evasion rates than employees in all income deciles and the evasion rate declines by deciles; Mantovani and Nienadowska (2007) showed that, on average, employees do not evade, while the self-employed evade paying taxes on 51% of their earnings; Marino and Zizza (2008), comparing, by workers' categories, individual survey data on household income with the administrative evidence provided by tax files, found that, on average, the self-employed underreport 56.3% of their earnings, while employees correctly report labour incomes to the fiscal authorities.

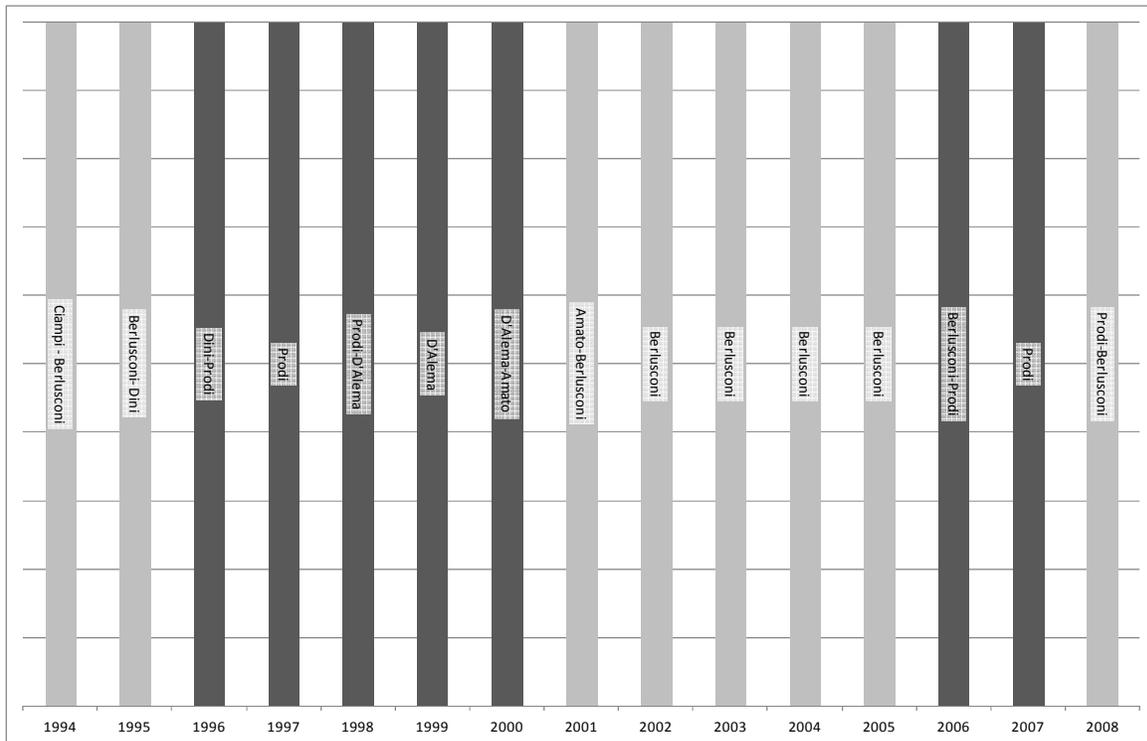## 3. Political cycle and anti-evasion measures in Italy

During the so-called "first Republic" – lasted from 1946 to 1994 when a majority vote system replaced the previous proportional system, favouring the creation of two contrasting coalitions – Italy was always governed by multi-party coalitions led by the Centre Christian Democratic party (*Democrazia Cristiana*). 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 the former Ministry of Economy Lamberto Dini, who appointed no politicians as Ministries) supported by both some left and centre-right parties.

Afterwards, two coalitions – centre-right (light gray label) and centre-left (dark gray label) in Figure 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, supported by a *grosse coalition* including both the centre-right and centre-left coalition. However, only in the decade 1996-2005 the ruling coalition was able to rule for the whole period the legislature was in office (five years). Therefore, an effective bipartisan political cycle emerged in Italy in this decade only, when the Centre-Left coalition ruled for 5 years[3], followed by 5 years of the Centre-Right coalition[4].

---

[3] 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 then replaced by Giuliano Amato in Spring 2000.
[4] The second Centre-Left Prodi Cabinet was in power for less than 2 years (May 2006 to January 2008).

Fig. 1: Government coalitions in Italy from 1994 to 2008 (black: centre-left; grey: centre-right)

Ciampi - Berlusconi	Berlusconi- Dini	Dini-Prodi	Prodi	Prodi-D'Alema	D'Alema	D'Alema-Amato	Amato-Berlusconi	Berlusconi	Berlusconi	Berlusconi	Berlusconi	Berlusconi-Prodi	Prodi	Prodi-Berlusconi
1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008

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, environmental protection, and participation in the EMU as priorities. On the other hand, 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, dealers, craftsmen): 63% and 68% of craftsmen and dealers voted for the centre-right coalitions in the 2001 and 2006 elections, respectively (INES 2001 and 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. 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 sort of legal self-defence. Consistent with those different attitudes towards contrasting evasion, tax measures were oriented differently. New rules and different enforcement efforts by the tax administration and controlling authorities were implemented by the two coalitions when they ruled (see Table 1).

In particular, two measures are 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. The centre-left Government phased in the Audit scheme

(*Studi di settore*), aimed at combating tax evasion, defining the plausible proceeds that firms or the self-employed, with certain characteristics, should earn in a year and asking those not achieving those proceeds to justify the discrepancy to the fiscal authorities[5]. Conversely, the centre-right coalition de-penalised the "Forgery in balance sheet", thus making it easier for fraud and corporate crimes to occur, and introduced two tax amnesties in 2002 and 2003 (during the centre-left government periods only a tax contribution amnesty following the structural 1995 pension reform was introduced)[6]. Change in pension contribution rates could also affect gross reported incomes. Since 1996, employees have paid a 33% contribution rate, while craftsmen and dealers pay a lower rate (approximately 19-20% in the observed period), that was slightly increased in the period 1996-2005.

Table 1: Main measures introduced in Italy from 1994 to 2006

Year	Government	Main Laws
1996	Technical Cabinet, then CL	Tax contribution amnesty (DL.295/1996); +0.30% of contribution rate for dealers (L.662/1996)
1997	CL	+0.80% contribution rate for dealers and craftsmen (L.449/1997)
1998	CL	Audit scheme (Studi di Settore; L.427/1993 phased in 1998)
1999	CL	
2000	CL	
2001	CL then CR	+0.09% yearly increase of contribution rate for dealers up to 2006 (L.448/2001)
2002	CR	Tax amnesty (L.289/2002); "Forgery in balance sheet" (d.lgs.11/4/02 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, recently 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

---

[5] For details see Arachi and Santoro (2007).
[6] As noted by Andreoni (1991), on one hand, tax amnesties could exert a positive effect on short-term and long-term revenues, changing behaviours of those individuals that would like to re-join the tax system but are constrained by fines. On the other hand, tax amnesties could provide incentives for honest taxpayers to start evading taxes because they anticipate future new amnesties.

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, contractual arrangement).

However, due to some limits in the earnings records of professionals and public employees in the INPS files, the analysis of this paper is carried out comparing private employees and two types of self-employed workers, craftsmen and dealers. Note that in the analyses of this paper, we do not include the increasing share of "parasubordinate" workers, who are often bogus self-employed, formally acting through a non-subordinate contractual arrangement but usually working as they were employees[7].

Table 2: Sample size

Observations	Values	%
Private Employees	100,026	78.4
Craftsmen	14,192	11.1
Dealers	13,297	10.4
Total	127,515	100.0
Not moving across occupations	Values	%
Private Employees	94,897	80.8
Craftsmen	11,734	10.0
Dealers	10,765	9.2
Total	117,396	100.0
Individuals (no movers)	Values	%
Private Employees	14,095	81.7
Craftsmen	1,561	9.0
Dealers	1,607	9.3
Total (no movers)	17,263	100.0
Total	18,521	

Source: elaborations on AD-SILC data

The administrative sources allow us to exactly reconstruct, for each individual, the time of entry into the labour market, actual experience (i.e., the effective number of weeks worked since the entry in the labour market)[8] and reported annual gross earnings[9]. Private employees' gross earnings include the employee contribution rate (currently 9%), while craftsmen' and dealers' gross earnings include the total contribution rate (increased up to 19-20% in the observed period).

We then use a sample of 127,515 observations concerning 18,521 individuals followed in the decade 1996-2005 who worked in that period as private employees, craftsmen or dealers (Table

---

[7] The different groups of workers are distinguished in the INPS administrative archives according to the specific pension funds where workers pay contributions.
[8] Note that information about periods spent working as public employees, professionals or parasubordinate workers is used for computing 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 1,000 Euros (at 2010 prices). We include in the gross earnings maternity and sickness allowances and the benefits received in cases of reduced working hours as *Cassa Integrazione*.

2). In order to avoid the possible endogenous choice of people moving between private employment and self-employment during the two political phases, in the baseline estimates we do not consider those individuals who moved from self-employment to private employment (or *vice versa*) in the period 1996-2005. Due to these restrictions, the final sample used in our main estimates is composed of 17,263 workers and 117,396 observations. Looking in detail at the individuals, the share of private employees is 81.7%, while 18.3% of the workers are self-employed (9.0% craftsmen and 9.3% dealers).

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, while on average in the period 1996-2005 their gross annual earnings (17,682 Euros, in constant 2010 prices) are higher than those of craftsmen (16,011 Euros) and dealers (15,997 Euros). The largest proportion of both private employees and the self-employed work in northern Italy and there is a majority of males in our sample, especially among the craftsmen.

Table. 3: Sample characteristics

	Private Employees	Craftsmen	Dealers	Total
Mean				
Gross annual earnings	17,682	16,011	15,997	17,320
Age	36.6	41.4	41.2	37.6
Distribution by gender				
Males	61.2%	76.9%	59.6%	62.8%
Females	38.8%	23.1%	40.4%	37.2%
Distribution by education				
At most lower secondary	47.0%	62.2%	43.0%	48.3%
At most upper secondary	45.9%	34.6%	51.2%	45.2%
Tertiary	7.1%	3.2%	5.8%	6.5%
Distribution by working area				
North	56.9%	55.7%	51.4%	56.2%
Centre	24.0%	26.0%	23.1%	24.1%
South	19.2%	18.3%	25.5%	19.7%

Source: elaborations on AD-SILC data

5. Empirical strategy

As remarked, all studies about Italy note that underreported income by the self-employed is much larger than that of employees. Indeed, the self-employed have much more flexibility in reporting incomes because they directly pay taxes, while employees' labour income taxes are paid by the employer. The different scope 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 of the ruling coalition in 2001 – that we interpret as a shock – could have impacted the two groups of workers differently.

Therefore, we make use of a differences-in-differences (DID) strategy to estimate the change in self-employed tax evasion according to the political cycle. The DID approach consists of

identifying a specific event (a shock) to compare the difference in outcomes before and after the shock between the treatment group – the self-employed, those that could modify their fiscal behaviour according to the ruling coalition – and the control group – the private employees, whose attitude towards paying taxes cannot be directly affected by the political cycle.

The DID approach requires two assumptions to be verified: first, individuals must be grouped by an exogenous variable, to overcome the endogeneity issue; second, the trend of the outcome variable for the control and treatment groups must be the same in the absence of the shock (the common trend hypothesis). To satisfy the first assumption, we carried out our main estimates considering the sub-sample of those who never moved between employment and self-employment in the 1996-2005 period. Concerning the second assumption, a similar trend in mean self-employed and private employee annual gross earnings (in nominal prices; Figure 2) emerges before the 2001 shock (with an exception in 1999 when the gap narrowed), while a widening gap between private employees and both types of self-employed mean annual earnings emerges after 2001, thus providing descriptive evidence of the relative decrease in reported earnings of the self-employed when the centre-right coalition ruled.

Figure 2: Trend of mean gross yearly earnings (nominal prices) 1996-2005
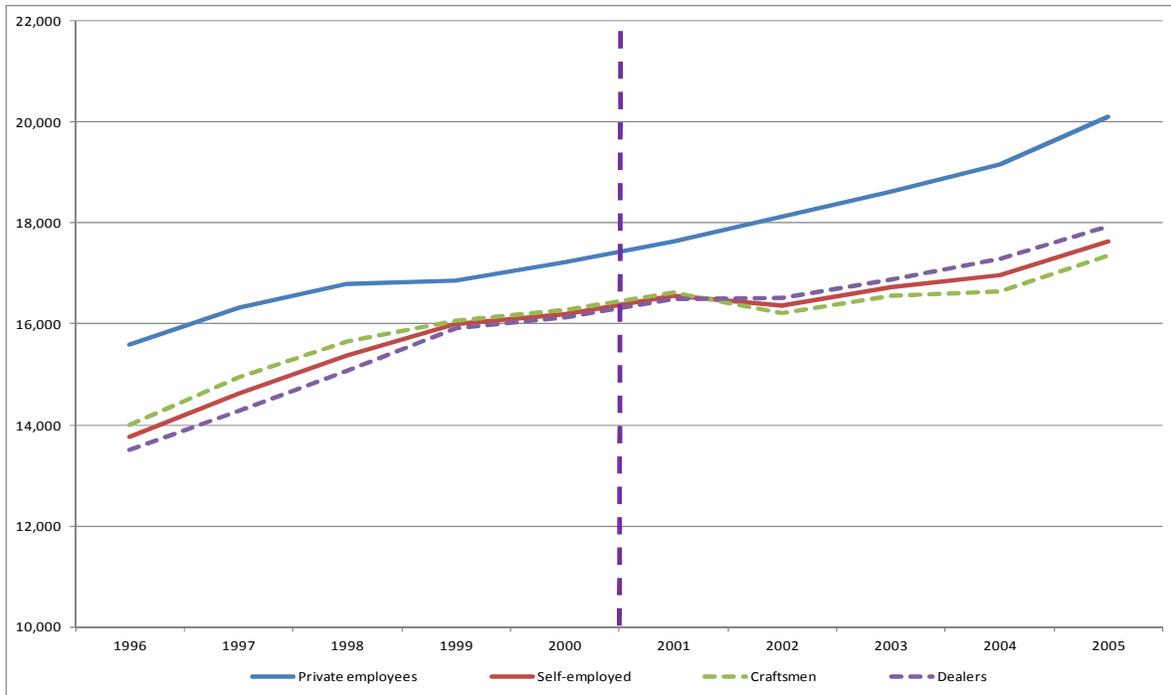
Source: elaborations on AD-SILC data

The goal of this paper is to test whether this reduction persists when individual characteristics, business cycles and time trends are controlled for, in order to identify a pure effect on the self-employed propensity to underreport income based on which party controls the Government.

To control for the business cycle, in our estimates we include annual real GDP growth rates and regional unemployment rates and two types of time trends: i) a common trend (expressed through year dummies), that allows to control for general trends jointly affecting employees and

the self-employed; and ii) specific time trends for the self-employed and employees (considered interacting year dummies and the worker's category), in order to control for specific time trends affecting a single category, e.g., the effect of the economic cycle on a single category, as the introduction of the Euro in 2002 that mostly advantaged price makers, such as craftsmen and dealers.

Considering two different sets of time trends allows us to disentangle the determinants of the behaviour of taxpayers after the Government turn-out. As noted, different coalitions could affect the self-employed "propensity" to correctly report labour incomes (their tax compliance) through two channels: i) affecting, through actual measures, the standard determinants of tax evasion identified by Allingham and Sandmo (1972), i.e., audit frequency, penalty sizes, tax rates, or introducing measures easing tax avoidance; and ii) affecting the tax morale (Kirchler 2007, Andreoni 1991), influencing social norms about the tax system and individual expectations about the strictness and the frequency of controls and influencing individual perceptions about the opportunities to underreport incomes to fiscal authorities (for instance, policy makers' statements minimising the negative values associated with tax evasion or the introduction of repeated tax amnesties could reduce tax morale).

Controlling for a common trend does not allow us to distinguish between the two aforementioned channels and to depurate from a business cycle that could affect the self-employed and employees differently. Instead, controlling for specific time trends allows us to depurate the estimates from the influence of specific business cycles and from the impact of policy measures affecting a single category (e.g., measures that modify individuals' chances of avoiding taxes or the increase the convenience of evading taxes). Thus the introduction of specific time trends allows us to disentangle the "tax morale" impact of the government turnover on self-employed reported incomes, i.e., the effect of a more general perception of political support against tax evasion.

We test in detail whether annual reported gross earnings changed when the ruling coalition changed, using individual longitudinal data and controlling for individual fixed effects, time varying characteristics (age, age squared, effective labour market experience and its square, and dummies for regions of work), business cycle proxies (the annual GDP growth rate and the regional unemployment rate) and time trends. In technical notations:

$$ln\, w_{it} = \alpha + \beta treat_{it} + \delta after_{it} + \gamma treat_{it} * after_{it} + \mu C_{it} + \varphi P_t + \vartheta year_t + \varepsilon_{it} \qquad (1)$$

$$ln\, w_{it} = \alpha + \beta treat_{it} + \delta after_{it} + \gamma treat_{it} * after_{it} + \mu C_{it} + \varphi P_t + year_t + \rho year_t * treat_{it} + \varepsilon_{it} \; (1')$$

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, *treat* is a dummy variable equal to 1 for self-employed, 0 for private employees, *after* is a dummy variable equal to 1 if the observation is in the period after the shock (i.e., in the period 2001-2005) and the coefficient γ of the interaction term *treat*after* is our key coefficient (the treatment effect), as it expresses the change of self-employment earnings when the centre-right coalitions ruled. Therefore, a negative sign of the estimated coefficient γ signals a lower propensity to report income, i.e., a higher

propensity to evade, when the centre-right coalition ruled, while the opposite holds if the estimated effect is positive. C_{it} is a set of individual time varying controls, P_t is a vector of macro variables proxying business cycle (real GDP growth and regional unemployment rate) and *year* is the time dummy (also interacted with workers' categories in our saturated preferred model 1'). The estimates are run both pooling together the two self-employed groups and distinguishing craftsmen and dealers (in that case we have two different categories of treated individuals, whose incomes are compared to those of employees).

We also aim to verify whether the reaction of taxpayers to the Government turnout changed along the distribution. This investigation is carried out using the methodology proposed by Canay (2011) for the estimation of quantile regressions for panel data. The standard model of quantile regression, introduced by Koenker and Bassett (1978), does not take into account the unobserved fixed effects, while the model proposed by Canay (2011), assuming that the unobserved fixed effects are location shift variables, allows us to depurate estimates from the unobserved individual heterogeneity that can bias the cross-sectional estimates. The Canay approach is based on two steps: i) a panel fixed effect estimate is run to identify the individual fixed effect; ii) a standard quantile regression is then run on a new dependent variable obtained by subtracting the individual fixed effect estimated in the first step from the dependent variable (in our case log of earnings).

6. Results

We start by carrying out pooled OLS, random and fixed effects estimates on the full sample (i.e., also considering individuals who moved across worker categories in the 10 year period), including the common trend only (i.e., year dummies are not interacted with workers' categories). Independent of the estimated model, the estimated coefficients confirm the descriptive picture shown in figure 2: self-employed earnings (and dealers and craftsmen earnings when the two categories are distinguished) were significantly reduced in the five-year period 2001-2005, i.e., when the Centre-Right coalition led by Silvio Berlusconi ruled. The size of the decrease of self-employed reported incomes enlarges when panel estimates are carried out and it is very similar in fixed and random effect models (Table 4)[10]: self-employed earnings were reduced by 7.0-7.4% when random or fixed effect estimates are carried out and the decrease is slightly higher for craftsmen than for dealers.

According to the results of a Hausman test[11] we preferred to rely on the fixed effect model only and we carried out robustness checks, taking into account as our main estimate (Table 5, column 2), only the sub-sample of individuals not moving across the different working categories in the 10 year period (thus the estimate cannot be plagued by endogeneity due to individual self-selection in private employment or self-employment after the shock). The results confirm that self-employed earnings were significantly reduced by 6.9% compared to private employee earnings and the decrease was significant for both craftsmen and dealers. The same effect is

---

[10] Detailed results of the regressions presented in section 6 are available upon request.

[11] The choice between random and fixed effect is carried out by computing a Hausman test (*T*=200.04; *p-value*=0.000) that suggests we reject the null hypothesis and use the fixed effect model.

confirmed when considering a balanced sub-sample (only individuals present in the sample for the whole observation period; column 3), even if the size of the effect decreases slightly. In the last column, we run the model excluding the election years 1996 and 2001 from the analysis and, interestingly, the effect becomes still clearer when the election years are not considered.

Table 4: Estimated coefficient γ of the interaction between the self-employed dummy and the post-shock dummy[1]

	Pooled OLS	Fixed effect	Random effect
Self-emp.*post shock	-0.0410	-0.0741	-0.0699
S.E.	0.0074	0.0073	0.0071
P value	0.0000	0.0000	0.0000
Craftsman.*post shock	-0.0462	-0.0788	-0.0743
S.E.	0.0092	0.0092	0.0091
P value	0.0000	0.0000	0.0000
Dealer*post shock	-0.0365	-0.0686	-0.0650
S.E.	0.0102	0.0102	0.0099
P value	0.0004	0.0000	0.0000
Number of obs.	125,944	125,944	125,944

[1]Control variables are: dummies for workers' categories, age, age squared, experience, gender, education, region of work, regional unemployment rate, real GDP growth rate and time dummies. Source: elaborations on AD-SILC data

Table 5: Estimated coefficient γ. Fixed effect model on the subsample of those not moving across working categories in the observed period[1]

	No movers - baseline	Balanced sub-sample[2]	No election years[3]
Self-emp.*post shock	-0.0686	-0.0557	-0.0838
S.E.	0.0075	0.0079	0.0083
P value	0.0000	0.0000	0.0000
Craftsman.*post shock	-0.0741	-0.0603	-0.0943
S.E.	0.0096	0.0102	0.0106
P value	0.0000	0.0000	0.0000
Dealer*post shock	-0.0613	-0.0498	-0.0706
S.E.	0.0104	0.0111	0.0116
P value	0.0000	0.0000	0.0000
Number of obs.	115,955	64,760	92,931

[1] Control variables are: dummies for workers' categories, age, age squared, experience, gender, education, region of work, regional unemployment rate, real GDP growth rate and time dummies. [2] Only individuals that do not move across working categories and are present in the panel as private employees, craftsmen or dealers for the whole observation period are taken into account. [3] The two election years (1996 and 2001) are not taken into account. Source: elaborations on AD-SILC data

Finally, in order to control for additional sources of heterogeneity between private employees and the self-employed, we run our favourite "full model", where the interaction dummies

between workers' categories and year dummies and region of work and year dummies are included (Table 6, where only individuals not moving across employment and self-employment are taken into account).

As noted, controlling for worker category time trends, we aim at depurating our estimates from both a business cycle that differently affects the self-employed and employees, and from specific measures affecting the chances of evading and avoiding taxes introduced by the ruling coalition. Therefore, the "full model" allows us to identify, through the γ coefficient, the effect of the political cycle on self-employed reported incomes that is due to a self-employed perception of the anti-evasion propensity of the ruling coalition.

Table 6: Estimated coefficient γ. Specific trends models[1]. Fixed effects models on the subsample of those not moving across working categories in the observed period[2]

	Full model	Without regional trends[3]	Balanced sub-sample[4]	No election years[5]
Self-emp.*post shock	-0.1260	-0.1255	-0.1085	-0.1389
S.E.	0.0143	0.0143	0.0147	0.0138
P value	0.0000	0.0000	0.0000	0.0000
Craftsman.*post shock	-0.1146	-0.1153	-0.1091	-0.0836
S.E.	0.0183	0.0183	0.0189	0.0138
P value	0.0000	0.0000	0.0000	0.0000
Dealer*post shock	-0.1381	-0.1358	-0.0545	-0.0334
S.E.	0.0198	0.0197	0.0171	0.0160
P value	0.0000	0.0000	0.0015	0.0373
Number of obs.	115,955	115,955	64,760	92,931

[1] Interaction dummies between time dummies and workers' categories and time dummies and region of work are included in all models. [2] Control variables are: dummies for workers' categories, age, age squared, experience, gender, education, region of work, regional unemployment rate, real GDP growth rate and time dummies. [3] Interaction dummies between time dummies and region of work are not included among covariates. [4] Only individuals that do not move across working categories and are present in the panel as private employees, craftsmen or dealers for the whole observation period are taken into account. [5] The two election years (1996 and 2001) are not taken into account. Source: elaborations on AD-SILC data

Including specific time trends, the size of the "political cycle effect" γ enlarges. The estimated decrease in self-employed reported incomes in the period 2001-2006 amounts to 12.6% in the baseline "full model". This result is confirmed when the interactions between time dummies and the region of work are not included in the regression, when only the sub-sample of individuals working for the whole period is considered and when the two election years are not taken into account (columns 3, 4 and 5, respectively).

The increase of the size of the coefficient γ when comparing results of models including common or specific trends is very interesting (see Tables 5 and 6). This difference signals that time trends favouring the self-employed should have taken place since 2001. Indeed, the empirical evidence shows that in Italy the Euro adoption advantaged price makers (i.e., the self-employed) (Brandolini 2005). In other terms, after the Euro adoption the gap between self-employed and

employee earnings should have narrowed rather than widened, as previously shown in Figure 2. Therefore, controlling for specific time trends allows one to depurate for this confounding trend favouring the self-employed and to better disentangle the effect of politicians' stances on evasion on the propensity of the self-employed to correctly report their labour incomes.

In summary, interpreting this evidence as a proxy of the influence of the political cycle on the propensity of the self-employed to underreport their income, we can argue that moving from a centre-left to a centre-right ruling coalition significantly affected self-employed tax compliance in Italy through a "pure perception" channel, reducing their reported income by 12.6%. This holds for both craftsmen (-11.5%) and dealers (-13.8%).

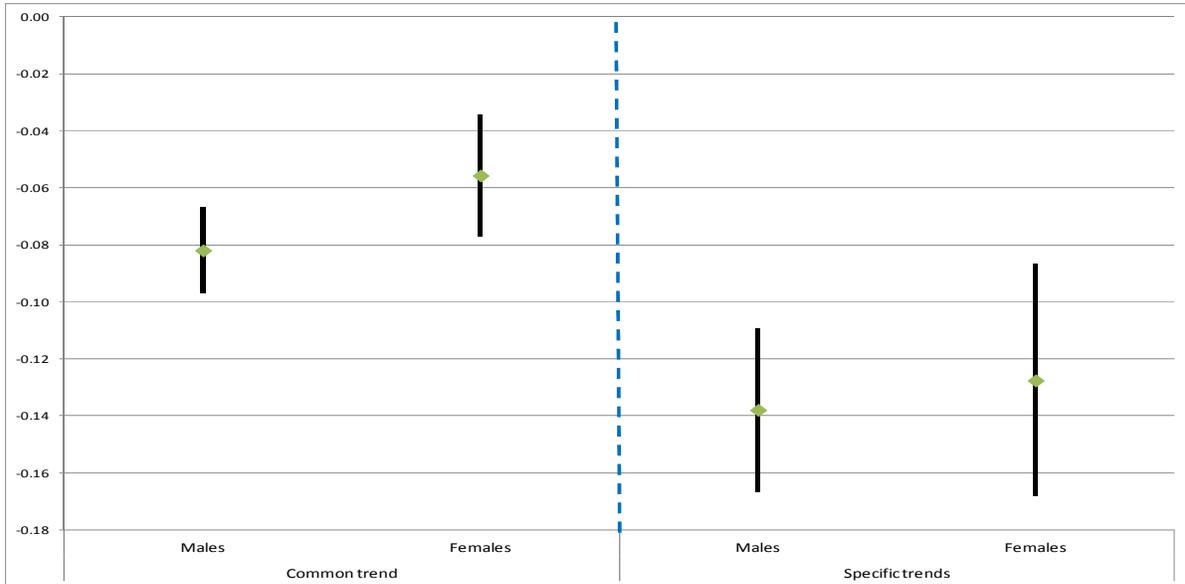Figure 3: Estimated coefficient γ by geographical area of work (90% interval of confidence)[1].
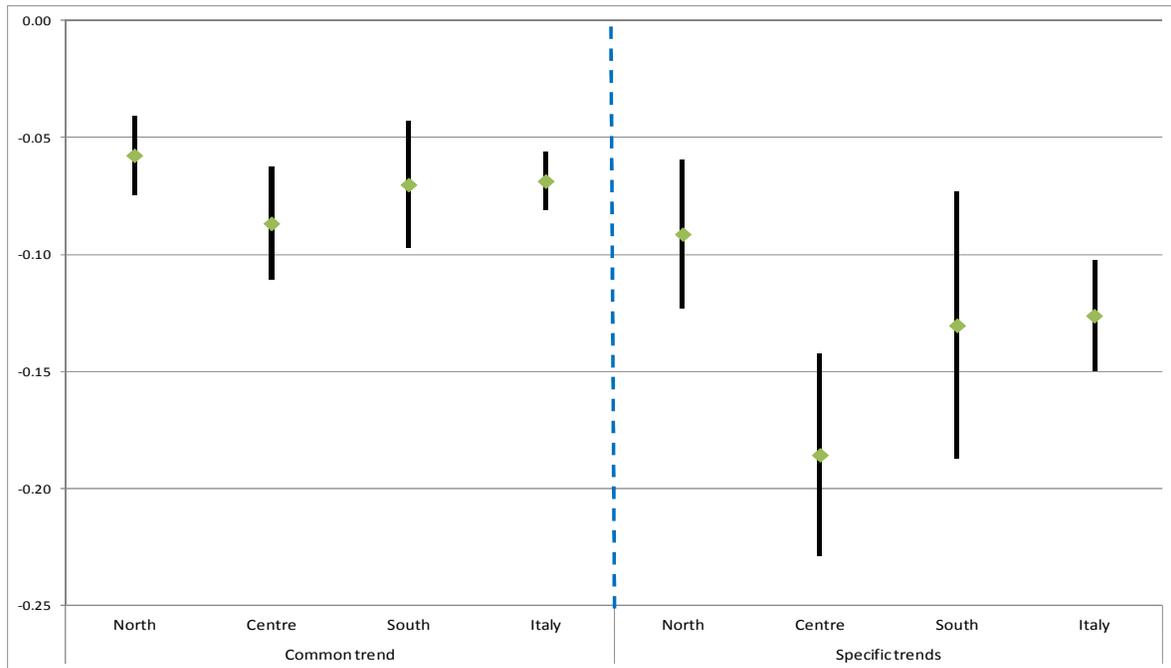
[1] Control variables in the "Common trend model" are: dummies for workers' categories, age, age squared, experience, gender, education, region of work, regional unemployment rate, real GDP growth rate and time dummies. In the "Specific trends model" interaction dummies between time dummies and workers' categories and time dummies and region of work are added. Individuals moving across working categories in the observed period are not taken into account. Source: elaborations on AD-SILC data

Distinguishing workers according to the geographical area where they work (North, Centre and South; Figure 3), a higher impact of the government turnover on the self-employed propensity to underreport their income emerges in the Centre, and this holds for both the common trend and the specific trend models[12]. Finally, the "decreasing reported income" effect is greater for males than for females in both the model specifications, but the distances are limited in the specific trend model (Figure 4). Note, again, that these estimates do not measure the total share of

---

[12] Concerning the geographical areas, greater amounts of tax evasion and hidden economy are usually found in the South, but this evidence could depend on the underdeveloped productive structure of the Southern economy (more exposed to tax evasion due to its large share of small tertiary firms and agricultural activities), rather than on a lower tax morale and a higher propensity of Southern citizens to evade (Santoro 2010).

underreported income of the different categories, but they identify the marginal effect on underreporting due to the ruling coalition turnout.

Figure 4: Estimated coefficient γ by gender (90% interval of confidence)[1].

[1] Control variables in the "Common trend model" are: dummies for workers' categories, age, age squared, experience, gender, education, region of work, regional unemployment rate, real GDP growth rate and time dummies. In the "Specific trends model" interaction dummies between time dummies and workers' categories and time dummies and region of work are added. Individuals moving across working categories in the observed period are not taken into account. Source: elaborations on AD-SILC data

Figure 5: Estimated coefficients γ in quantile fixed effects models[1].
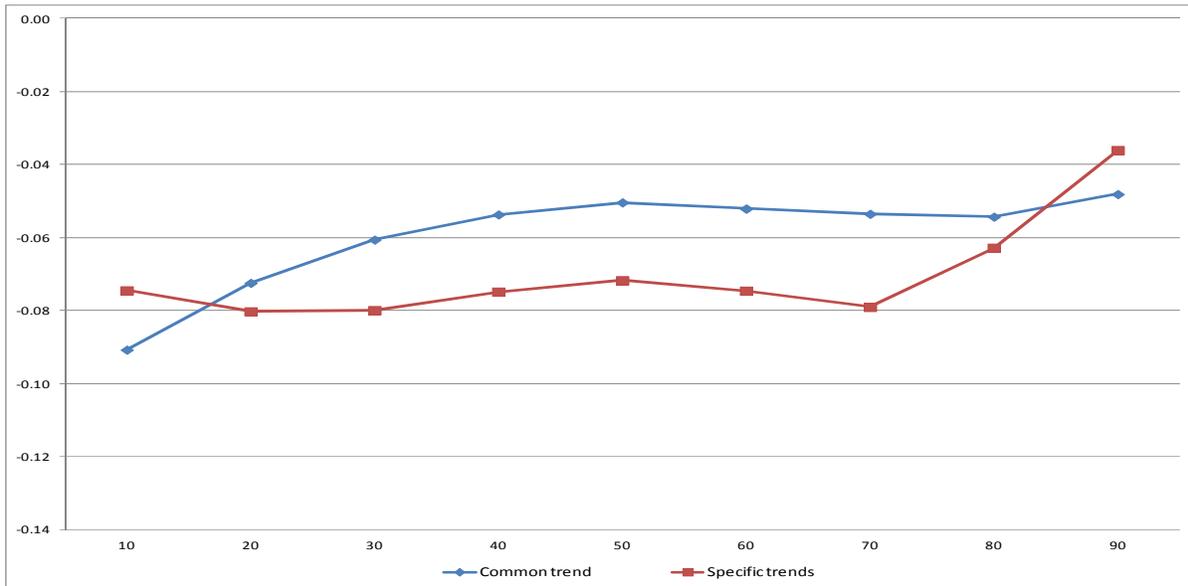
[1] Control variables in the "Common trend model" are: dummies for workers' categories, age, age squared, experience, gender, education, region of work, regional unemployment rate, real GDP growth rate and time dummies. In the "Specific trends model" interaction dummies between time dummies and workers' categories and time dummies and region of work are added. Individuals moving across working categories in the observed period are not taken into account. Source: elaborations on AD-SILC data

As a final exercise we run quantile fixed effects estimates following the Canay (2011) procedure to verify how the coefficients of the interaction terms between the self-employed and the post-shock dummy move along the distribution (Figure 5), thus measuring whether the marginal effect of the Government turnover on the propensity to underreport income changes according to individual quantiles. The estimates show that the coefficients are negative and significant in all deciles, but their size decreases along the distribution, especially in the two top deciles in the specific trends model.

7. Conclusions

Using a new panel dataset that allows us to follow individuals through their entire working career and using a difference-in-difference approach where the employees are the control group and craftsmen and dealers (the typologies of the self-employed tracked in our dataset) are the treatment group, in this paper we tested whether self-employed reported incomes significantly decreased, compared to private employees' earnings, after the Government turnover 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.

Consistent with our expectations, we find that (compared to employees) self-employed earnings were largely reduced during the centre-right wing government period (2001-2005) and a significant decrease emerged in all deciles, even if it was a bit larger in bottom deciles.

Interpreting this evidence as a proxy of the influence of the political cycle on the propensity of the self-employed to underreport their incomes, 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 and tax morale. Interestingly, the size of the estimated effect enlarges when specific time trends for employees and the self-employed are included in the estimates. Therefore, we can argue that the estimated decrease in self-employed reported earnings, more than a mere consequence of the measures introduced by the different coalitions, is also the outcome of a more general perception by the self-employed engendered by the different attitudes and claims of the two ruling coalitions against tax evasion.

References

Alesina A. (1987), "Macroeconomic Policy in a Two-Party System as a Repeated Game", *Quarterly Journal of Economics*, 102(3), 651-678.

Allingham M., Sandmo A. (1972), "Income tax evasion: A theoretical analysis", *Journal of Public Economics*, 1 (3-4), 323-338.

Andreoni J. (1991), "The desirability of a permanent tax amnesty", *Journal of Public Economics*, 45, pp. 143-159.

Andreoni J., Erard B., Feinstein J. (1998), "Tax Compliance", *Journal of Economic Literature*, 36, 818–860.

Arachi G., Santoro A. (2007), "Tax enforcement for SMEs: Lessons from the Italian Experience?", *Atax-Ejournal of Tax Research*, 5(2), 224-242.

Bernardi L., Bernasconi M. (1996), "L'evasione fiscale in Italia: evidenze empiriche", *Il fisco*, n. 38, 19-36.

Bernasconi M., Marenzi A. (1997), "Gli effetti redistributivi dell'evasione fiscale in Italia", Banca d'Italia, Convegno sulle ricerche quantitative per la politica economica, Perugia, Sadiba.

Brandolini A. (2005), "La disuguaglianza di reddito in Italia nell'ultimo decennio", *Stato e Mercato*, n. 2, 207-230.

Bruce D. (2000), "Effects of the United States tax system on transitions into self-employment" *Labour Economics*, 7(5), 545–574.

Caciagli M., Corbetta P. (2002), *Le ragioni dell'elettore: Perché ha vinto il centro-destra nelle elezioni italiane del 2001*, Bologna, Il Mulino.

Diamanti I., Lello E (2005), "The Casa delle Libertà: A House of Cards?", *Modern Italy*, 10(1), 9-35

Erard B., Feinstein J. (1994), "The Role of Moral Sentiment and Audit Perceptions in Tax Compliance", *Public Finance*, vol. 49, pp. 70-89.

Feld L., Frey B. (2007), "Tax Compliance as the Result of a Psychological Tax Contract: The Role of Incentives and Responsive Regulation", *Law and Policy*, 29(1).

Fiorillo F., Gallegati M. (2008), C*ontribuenti ed evasori: chi, dove e quando,* in Lavoce.info http://www.lavoce.info/contribuenti-ed-evasori-chi-dove-e-quando/.

Fiorio C., D'Amuri F. (2005), "Workers' tax evasion in Italy", *Giornale degli Economisti e Annali di Economia*, vol. 64, n. 2/3, pp. 247-270.

Fortin B., Lacroix G., Villeval M. (2004), "Tax Evasion and Social Interaction", *Journal of Public Economics*, 91, pp. 2089-2112.

Hibbs D. A. (1977), "Political parties and macroeconomic policy", *American Political Science Review*, 71, 146–197.

Hibbs D.A., Piculescu V., (2010) "Tax Toleration and Tax Compliance: How Government Affects the Propensity of Firms to Enter the Unofficial Economy", *American Journal of Political Science*, Vol. 54, No. 1, pp. 18-33.

Italian National Election Studies - INES (2001), *Perchè ha vinto il centrodestra. Oltre la mera conta dei voti: chi, come, dove, perché*, Bologna, il Mulino.

Italian National Election Studies - INES (2006), *Dov'è la vittoria. Il voto del 2006 raccontato dagli italiani*, Bologna, il Mulino.

Kalecki M. (1971), *Political aspects of full employment*, reprinted in *Selected Essays on the Dynamics of the Capitalist Economy*, Cambridge University Press.

Kim S. (2008), "Does political intention affect tax evasion?", *Journal of Policy Modeling*, 30, 401-415.

Kirchler E. (2007), *The economic psychology of tax behaviour*, Cambridge University Press.

LEF - Associazione per la legalità e l'equità fiscale (2012), "Indagine conoscitiva sulla struttura dell'imposta sul reddito delle persone fisiche (Anni di imposta 2003-2010)", in *Fisco Equo- Rivista telematica di LEF*.

Livadiotti S. (2014), *Ladri. Gli evasori e I politici che li proteggono*, Milano, Bompiani

Mantovani D. Nienadowska S., (2007), "The distributive impact of tax evasion in Italy", AIM-AP working paper.

Marino M., Zizza R. (2008), "L'evasione dell'irpef: una stima per tipologia di contribuente", paper presented at the annual SIEP conference, Pavia, 25-26 September.

Mastropaolo A. (2009), "The Sufferings of the Ordinary Citizen", *Bulletin of Italian Politics*, 1(2), 309-320.

Meltzer A., Richard S. (1981), "A Rational Theory of the Size of Government"*, Journal of Political Economy*, 89(5), 914-927.

Nordhaus W. (1975), "The political business cycle", *Review of Economic Studies*, 42, 169–190.

Pissarides C.A., Weber G. (1989), "An expenditure based estimates of Britain's black economy", *Journal of Public Economics*, 39, 17-32.

Rogoff K. (1990), "Equilibrium political budget cycles", *American Economic Review*, 80, 21-36

Santoro A. (2010), *L'evasione fiscale*, Bologna, Il Mulino.

Schneider F. Enste D. (2000), "Shadow Economies: Size, Causes, and Consequences", *Journal of Economic Literature*, 38(1), 77–114.

Skouras S., Christodoulakis N. (2011), "Electoral Misgovernance Cycles: Evidence from wildfires and tax evasion in Greece and elsewhere", *GreeSE Paper*, n. 47.

Wenzel M. (2002), "Altering Norm Perception to Increase Tax Compliance", *Centre for Tax System Integrity Working Paper*, n. 38.