

Outside Income and Moral Hazard: The Elusive Quest for Good Politicians*

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Abstract

In most modern democracies elected officials can work in the private sector while appointed in parliament. We show that when the political and market sectors are not mutually exclusive, a trade-off arises between the quality of elected officials and the effort they exert in political life. If high-ability citizens can keep earning money outside of parliament, they will be more likely to run for election; for the same reason, they will also be more likely to shirk once elected. These predictions are confronted with a unique dataset about members of the Italian Parliament from 1996 to 2006. Empirical evidence shows that bad but dedicated politicians come along with good but not fully committed politicians. There is in fact a non-negligible fraction of citizens with remarkably high pre-election incomes who are appointed in parliament. These citizens are those who gain relatively more from being elected in terms of outside income. Conversely, they show higher absenteeism rates in parliament votes.

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1 Introduction

In many countries members of parliament are allowed to work in the private sector, with outside employment being either the continuation of a previous job or something completely new. It is easy to think of an entrepreneur who keeps running a company while holding a seat in parliament; or a lawyer who still attends to his clients. It is harder to think of a civil servant doing this because some incompatibilities would apply; or any other dependent employee who would need to regularly show up to work. Nevertheless, even in countries with a strict system of regulations, politicians can still earn money outside of parliament by doing consulting, writing books or giving speeches and lectures, no matter what their previous job may have been.

In this paper, we argue that by removing the mutual exclusiveness between the political and market sectors, a trade-off arises between the quality of elected officials and the effort they exert while in public office. If high-ability citizens do not have to give up their private business, then they will be more likely to run for election. However, for the same reason, they will also be more likely to shirk once elected.

We frame this intuition in a simple theoretical model with two sectors: political and private. Individuals are characterized by a unique skill, ability, which is rewarded in the private but not in the political sector. The main novelty with respect to previous literature on political selection (e.g., Besley, 2004; Caselli and Morelli, 2004) is that politicians can work in either sector or in both. We call outside income the money a member of parliament receives for any work in the private sector. This departure comes with two main implications. First, the traditional assumption that the opportunity cost of running for office is higher for high-ability individuals may not be true anymore. In particular, if high-ability citizens have relatively larger market returns when they are appointed, then the upper tail of the ability distribution may also enter into politics. Second, a moral hazard problem arises because politicians with potentially higher outside income exert less effort in parliament. Voters may then find themselves constrained to the following two options: either vote for a low-ability but high-effort candidate, or for a high-ability but low-effort candidate.

The main ideas in the model are confronted with a unique dataset about the members

of the Italian Parliament (Senate and House of Representatives) from 1996 to 2006. The dataset contains individual information on absenteeism in electronic votes and extensive details on pre-election and outside income. The main results show that although market income is lower following an election, politicians still earn a considerable amount of money by working in the private sector. The average outside income is 60,900 euros (33% of the total income). More importantly, outside income is relatively larger for politicians with higher pre-election income (74% for those in the highest quintile) in comparison to those with lower pre-election income (40% for those in the lowest quintile). This is also true when we control for previous job and other relevant covariates. We interpret this evidence as a relative advantage for high-ability citizens in terms of outside income. Accordingly, we find that when compared to the rest of the Italian population, citizens who become politicians once belonged to the upper tail of the income distribution, with an income gap varying from 7,000 to 67,000 euros over the quantiles of the joint distribution. Conversely, politicians with higher outside income are less committed to political activity in terms of parliament vote attendance. One standard deviation of observed outside income (213,000 euros) is associated with a +3.9% absenteeism in electronic votes (with respect to a 33% average). A similar effect is detected when outside income is replaced by pre-election income, which is a proxy for ability and a predictor of potential outside income while in office.

The paper is organized as follows. In Section 2, we review the public discussion on politicians' outside income and related economic literature. In Section 3, we present the theoretical framework. In Section 4, we describe the data. In Section 5, we present the estimation results concerning the link between absenteeism and outside income. In Section 6, we present empirical evidence on the selection into parliament. We conclude with Section 7.

2 Background Discussion and Related Literature

Politicians' outside employment has received much attention in the public debate in almost every country, with voters and opinion makers being mostly concerned that elected officials who engage in significant private activities may be diverted from being

full-time representatives. In the US, for instance, the law regulating outside employment was tightened in 1977 after a tough confrontation outside and inside Congress. As summarized at that time by Senator Bob Packwood (R) in his speech to the Senate, there were mainly two rationales for a strict limitation of outside income:¹

“One, it is we ought to be full time Senators and we should not do anything that takes time away from this job. That is the time argument. Two, it is a conflict. If we go out and speak, it is indeed a conflict and that ought to be barred.”

Other politicians opposed the tightening by arguing that citizens with remarkable market activity would choose not to run for elective office rather than give up their private business. Referring to his choice to run for Congress while maintaining an external source of income, Senator Edmund Muskie (D) declared:²

“I feel very strongly about this, and I say once more that maybe I did make a mistake 22 years ago. But I do know this, that the only thing that has made it possible for me to stay in public life 22 years was my choice - and I think it was an honorable choice - of this source of income for all of that time.”

This topic is still harshly debated not only in the US. In the UK, following the 2005 public disclosure of the tax declarations of British members of parliament, one of the major newspapers wrote:³

“If MPs are permitted to moonlight, and if their salaries are paid whether they do their jobs well or not, they have a permanent incentive to spend as little time on them as possible, and as much time as they can making money elsewhere.”

Basis on the same public disclosure, the political opponents of George Galloway, a member of parliament with a higher outside income and the leader of the political party “Respect”, accused him of abridging his parliament attendance in favor of outside activities:⁴

“Considering Mr. Galloway barely attends the House of Commons, his earnings are as staggering as they are insulting to the hard-working residents of Tower Hamlets who, after all, pay him a more than generous basic salary as it is.”

¹Congressional Record, Senate, March 21 1977, pg. 8333, Official Conduct Amendments of 1977.

²Congressional Record, Senate, March 18 1977, pg. 8158, Amendment n.93.

³“Paid-up Members”, *The Guardian*, March 2005.

⁴“Absent Galloway pockets 200K in first six months as MP”, Tower Hamlets Labour Party, Press Release, November 2005.

Similar disputes have recently appeared in Italian national newspapers. Referring to Giulia Bongiorno, a well-known lawyer appointed in the House of Representatives in 2001, Aldo Grasso, a columnist for the *Corriere della Sera*, wrote:⁵

“Were you appointed by the voters? Are you a member of parliament? Well, then be a full-time representative. Please don’t combine the prestige and the duties of being a representative with your private job.”

In all of these examples, outside income is seen as a problem, since it causes representatives to give less than perfect commitment to their political duties. Different degrees of public confrontation have resulted in different regulation settings.⁶ In most countries, outside employment is monitored by a special committee (e.g., France, Italy, the UK, and the US); in other countries there is an additional cap to the amount of money that can be earned (in the US, outside income cannot exceed 15% of the salary of an Executive Public Officer, which in 2006 was \$24,780). In most places, politicians’ tax declarations are subject to public disclosure. Nevertheless, the idea is generally accepted that within the regulation of each country, representatives can allocate part of their time to some remunerative activity in the private sector.

Despite broad public debate, outside employment has not received much attention in the political economy literature. In this sense, our model (see Section 3) can be considered a partial extension of Caselli and Morelli (2004) and Messner and Polborn (2004) to the case where the private and political sectors are not mutually exclusive. In their framework, low-quality equilibria may exist because electors are rationed in high-quality candidates, for whom the opportunity cost of entering politics is too high. In our framework, instead, the fact that high-ability politicians can still have their skills rewarded in the market reduces the opportunity cost and, consequently, the adverse selection mechanism. Besley (2004) builds an agency model with adverse selection and moral hazard to emphasize that paying politicians better will improve their performance. If reelection is the main incentive mechanism, then the salary of a politician plays an efficiency-wage role. Poutvaara and Takalo (2007) also study how the compensation of elected politicians affects the set of citizens choosing to run, in a model with primaries

⁵ “On. Bongiorno scelga: o fa il deputato o l’avvocato”, *Corriere della Sera Magazine*, August 2006.

⁶ See Appendix A for a detailed cross-country comparison.

and campaigning costs. They show that, when campaigning costs are sufficiently high, increasing the parliament reward may lower the quality of the average candidate. We also relate to Mattozzi and Merlo (2007a). They identify two main career patterns: politicians who work in the political sector until retirement (“career politicians”), and politicians who leave politics before retirement and work in the private sector (“political careers”). They abstract, however, from the possibility of citizens achieving success in the private sector and then moving into politics, or keeping a business running while appointed in parliament. Finally, our paper is conceptually related to the theoretical literature on dual job incentives in health care systems where public-service physicians refer patients to their private practices (Biglaiser and Ma (2007) call this moonlighting).

To the best of our knowledge, empirical work using individual-level data to analyze the behavior and quality of politicians is limited. Couch et al. (1992) find that the amount of public funding per college student is higher when state legislators are on the payroll of higher education institutions. Diermeier et al. (2006) use data for the member from members of the US Congress to quantify the returns to a political career. Gehlbach et al. (2006) use data from Russian gubernatorial elections to show that in immature democracies businessmen run for public office to gain direct control over certain policies. Golden et al. (2006) analyze the survival of politicians charged with malfeasance in the postwar Italian House of Representatives. Finally, Dal Bo’ et al. (2006) use data from the US Congress to document patterns and profiles of political dynasties. However, there are neither theoretical or empirical studies that assess the effects of politicians’ outside income.

3 Theoretical Framework

The following model provides a framework for evaluating the consequences of outside income opportunities on politicians’ *ex-ante* selection and *ex-post* behavior. It also sets the stage for the empirical analysis.

3.1 Setup

We study the determinants for citizens’ decision to self-select into politics. Assume to observe a population of individuals with ability a , uniformly distributed in the interval

$[0, \bar{a}]$.⁷ Ability (or skills) is valued by the market as $M(a)$: that is, every individual with ability \tilde{a} can get a market income equal to $M(\tilde{a})$ if he decides to work full-time in the private sector. This sector is meritocratic and attaches a positive value to skills (i.e., $M'(\cdot) > 0$). The alternative option is to become a politician. In order to focus on this self-selection decision, like in Besley (2004), we make the simplified assumption that the set of elected politicians is a random draw from among those willing to serve. This abstracts from many institutional factors like the role of political parties and elections, but as long as parties and citizens are constrained by the pool of candidate politicians, our results can be generalized to more complex settings.⁸

The rewards from a political career in parliament are both financial and psychological. On the financial side, we assume that the remuneration is equal to W (the salary of the members of parliament) and independent of ability or performance, since we do not generally observe high-powered incentive schemes in politics (Besley, 2004). On the psychological side, positive payoffs (ego rents) accrue both from *being* a politician and from *doing* politics. Being a member of parliament gratifies people because of the influence, celebrity, and power consciousness that comes from being in office. Doing politics (i.e., devoting time to the political office) gratifies people because they can fulfill their ideological goals. Hence, we assume that ego rents from becoming a politician (R) are made up of both payoffs attached to the position itself (R_1) and payoffs attached to the things that can be done (R_2). This distinction makes it evident that one can obtain some ego rents by simply becoming a member of parliament, while in order to obtain some additional rewards, one has to invest time and effort into political life.

The main departure of our model from the rest of the literature is that members of parliament can also earn money in the private sector while in office. Outside income is a function $P(a)$ strictly increasing in ability ($P'(\cdot) > 0$). Since time is a scarce resource,

⁷Another commonly recognized dimension of the quality of public officials is honesty. We do not consider this here, as far as we do not have an empirical counterpart for it.

⁸In line with the assumption that political parties and voters may be supply constrained, Fiorina (1994) shows that the professionalization of the legislative office in the US (i.e., the fact that it became a full-time job) made it relatively harder for the Republican Party to recruit high-quality candidates, because it traditionally recruited businessmen and lawyers. Nevertheless, we are aware that parties and voters may play an important role in determining the quality of elected politicians, although their influence is not *a priori* clear. For example, using an alternative framework, Mattozzi and Merlo (2007b) show that political parties may deliberately choose to recruit only mediocre politicians. Conversely, one may assume that voters always prefer high-ability candidates (e.g., Caselli and Morelli, 2004).

if politicians are devoting part of their time to making outside income, their effort in political activities, as well as the rewards from doing politics R_2 , will be lower. Formally, if we define $e \in \{0, 1\}$ as the effort put forth into parliamentary activities, the net payoff of becoming a politician is

$$\pi(a) = R_1 + eR_2 + W + (1 - e)P(a) - M(a), \quad (1)$$

which is equal to the sum of all financial and psychological rewards while in office minus the opportunity cost of becoming a politician $M(a)$.⁹

Decisions take place in two stages. In the first stage each individual, according to his own ability, decides whether to enter politics or not. In the second stage, each individual in the sample of those who chose to become politicians decides whether to put effort into parliament activities ($e = 1$) or not ($e = 0$).

3.2 Positive Predictions

It is useful to derive a solution for the simple case where, like in traditional literature on political selection, the possibility of making outside income is ruled out (i.e., $P(a) = 0 \forall a$). In this situation, as long as there are positive ego rents from doing politics ($R_2 > 0$), effort is always equal to 1; the payoff of becoming a politician is equal to its opportunity cost if $R_1 + R_2 + W = M(a)$. Clearly, only individuals with ability lower than $a_1 = M^{-1}(R_1 + R_2 + W)$ decide to become politicians. Excluding the two trivial equilibria in which all citizens become politicians ($a_1 > \bar{a}$) or nobody becomes a politician ($a_1 \leq 0$), the adverse selection of bad politicians (i.e., negative hierarchical sorting) is the main prediction. This is one of the results of traditional models.¹⁰ High-ability individuals prefer to stay away from politics because of the high opportunity cost of becoming a politician.

Things change if $P(a)$ is allowed. Outside income affects both the *ex ante* decision to enter politics and the *ex post* decision to put forth effort in political life. Let's start with the second-stage decision about e , which is relevant only for those who decide to become politicians. Clearly, only members of parliament with ability lower than $a^* = P^{-1}(R_2)$

⁹For the sake of simplicity we only consider a binary effort; however, our results could be extended to include a continuous effort.

¹⁰In particular, see Caselli and Morelli (2004) and Besley (2004).

put forth effort into legislative activity ($e = 1$). This is a moral hazard problem due to the fact that a time constraint creates a trade-off between legislative effort and outside income. Because of higher outside opportunities, skilled individuals have an incentive to exert lower effort in political life and share their time between politics and the private sector.¹¹ This simple framework comes with a first testable prediction.

Prediction 1 *High-ability politicians ($a \geq a^*$) exert lower effort in parliament activity than low-ability politicians ($a < a^*$).*

Going back to the first-stage decision of entering politics, it is useful to look separately at citizens with $a \in [0, a^*)$ and citizens with $a \in [a^*, \bar{a}]$. The former weighs the benefit ($R_1 + R_2 + W$) against the opportunity cost $M(a)$. For them, the net payoff of becoming a politician is

$$\pi_1(a) = R_1 + R_2 + W - M(a). \quad (2)$$

Their decision is the same as under the traditional assumption of having no outside income, since a moral hazard problem does not arise.¹² These citizens become politicians only if $a \in [0, a_1)$, where again $a_1 = M^{-1}(R_1 + R_2 + W)$. In the interval $a \in [0, a^*)$, $\pi_1(a)$ has either no zeros or a unique zero at a_1 , after which positive becomes negative. Hence, in this subsample of citizens we observe three cases:

- A. everybody becomes a politician (if $a_1 > a^*$);
- B. nobody becomes a politician (if $a_1 \leq 0$);
- C. there is negative hierarchical sorting (if $0 < a_1 \leq a^*$), i.e., citizens in $[0, a_1)$ become politicians and citizens in $[a_1, \bar{a}]$ do not.

Now focus on the first-stage decision of entering politics made by citizens with $a \in [a^*, \bar{a}]$. For them, the moral hazard problem is at stake. They weigh the benefits of

¹¹We are assuming that voters cannot control politicians' effort (for instance because of an agency problem). As a consequence, effort can be positive only because of high ego rents from doing politics (R_2) and not because of politicians' fears of being punished.

¹²To rule out the uninteresting case where moral hazard does not come into play for any individual, we assume that $a^* \in (0, \bar{a})$.

becoming a politician ($R_1 + P(a) + W$) against the opportunity cost $M(a)$. Their net payoff of entering politics is

$$\pi_2(a) = R_1 + P(a) + W - M(a), \quad (3)$$

which increases (decreases) as long as $P'(a) > M'(a) \forall a$ ($P'(a) < M'(a) \forall a$). If the marginal return to ability for outside income is greater than the marginal return to ability for market income, the net payoff of becoming a politician increases with ability. The opposite holds true if the marginal return to ability for outside income is lower than the marginal return to ability for market income. Moreover, since $P(a^*) = R_2$, we observe that $\pi_2(a^*) = R_1 + R_2 + W - M(a^*) = \pi_1(a^*)$.

From the above discussion about individuals with $a \in [0, a^*)$, we know that $\pi_1(a^*)$ can be either positive (case A) or negative (cases B and C). In the interval $a \in [a^*, \bar{a}]$, $\pi_2(a)$ has either no zeros or a unique zero at a_2 , which is defined as: $R_1 + W + P(a_2) = M(a_2)$; the above three cases are split into six possible self-selection equilibria:

- A1. everybody becomes a politician (if a_2 does not exist);
- A2. citizens in $[0, a_2)$ become politicians and citizens in $[a_2, \bar{a}]$ do not (if a_2 exists);
- B1. nobody becomes a politician (if a_2 does not exist);
- B2. citizens in $[0, a_2)$ do not become politicians and citizens in $[a_2, \bar{a}]$ do (if a_2 exists);
- C1. citizens in $[0, a_1)$ become politicians and citizens in $[a_1, \bar{a}]$ do not (if a_2 does not exist);
- C2. citizens in $[0, a_1)$ and $[a_2, \bar{a}]$ become politicians and citizens in $[a_1, a_2)$ do not (if a_2 exists).

Excluding the trivial equilibria in which everybody becomes a politician (A1) or nobody does (B1), we can observe either positive hierarchical sorting (B2) or negative hierarchical sorting (A2 and C1), as well as an equilibrium in which citizens in the two tails of the ability distribution become politicians, while those in the middle do not (C2).

The above four nontrivial equilibria are illustrated in Figures 1 through 4.¹³ In case A2 (Figure 1), all low-ability (but high-effort) citizens enter politics as well as a

¹³In all of these figures, $\pi_1(a)$ and $\pi_2(a)$ are drawn as lines for simplicity, but they do not need to be linear. The only assumption we need is that they are continuous and monotonic.

fraction of high-ability (but low-effort) citizens. We observe an adverse selection as in the traditional literature (even though the cut-off ability level is a_2 and not a_1).¹⁴ In case B2 (Figure 2), all low-ability (and potentially high-effort) citizens do not enter politics, since financial and psychological rewards are too low, but, thanks to outside income and an increasing $\pi_2(a)$, citizens in the upper tail of the ability distribution find it profitable to enter politics, even though they exert no effort in parliament activity. In case C1 (Figure 3), we have exactly the same situation as traditional literature. High-ability (and potentially low-effort) citizens stay away from politics, while only the lower tail of the distribution finds it profitable to enter politics because of its lower opportunity cost. The cut-off ability level is a_1 as in the baseline case with no outside income. Finally, in case C2 (Figure 4), the trade-off between positive selection and moral hazard is even more apparent. Citizens in the lower tail of the distribution enter politics and exert positive effort, while citizens in the upper tail of the distribution enter politics but exert no effort. Cases B2 and C2 show us that a necessary condition for observing citizens in the upper tail of the ability distribution entering politics is $P'(a) > M'(a)$, i.e., the marginal remuneration to ability for outside income is greater than the marginal remuneration to ability for market income.

We can then derive two additional predictions.

Prediction 2 *If $P'(a) < M'(a)$, then we observe negative hierarchical sorting of citizens into politics, i.e., only citizens in the lower tail of the ability (or income) distribution enter politics.*

Prediction 3 *If $P'(a) > M'(a)$, then citizens in the very upper tail of the ability (or income) distribution may enter politics.*

To sum up, our framework shows that as soon as outside income is introduced into the political selection mechanism, two main implications arise. First, there is a *moral-hazard effect*. High-ability individuals who choose to become politicians have an incentive not to exert effort in parliament activities, allowing them to grasp outside income opportunities. Second, there is a *selection effect*, where adverse selection of

¹⁴Note that the greater the level of outside income with respect to ego rents from doing politics (R_2), the higher the probability that $a_2 > a_1$.

bad politicians is no longer the only possible outcome. High-ability individuals may also find it convenient to enter politics if their outside income opportunities offset the greater opportunity cost.

As a final remark, note that we assumed R_2 as constant, while the ego rents from doing politics may be thought of as an increasing function of ability (the more skilled you are, the better you accomplish your ideological goals). In this case, if $R_2'(a) < P'(a)$, the predictions of our framework remain unchanged. On the contrary, if $R_2'(a) > P'(a)$, positive sorting could be completely explained by ego rents $R_2(a)$ instead of outside income opportunities $P(a)$ and the prediction in terms of moral hazard would be reverted: high-ability citizens would exert more effort than low-ability citizens. This gives even greater relevance to Prediction 1. If high-ability citizens exert less effort once elected, then they entered politics because of greater outside income opportunities.

3.3 Normative Thoughts

The main purpose of the model is to set the stage for the empirical analysis, deriving some positive predictions to be tested in Section 5 and Section 6. Nonetheless, some normative and policy thoughts can be derived as well. In Appendix B, we formally discuss the normative implications of our framework. Here, two main points deserve to be mentioned. First, the welfare comparison of situations *with* and *without* outside income is ambiguous. If outside income comes with a selection gain (e.g., cases B2 and C2), it may more than compensate the cost of shirking, leading to a welfare improvement. If outside income comes with no selection gain (e.g., case C1), the cost of shirking always produces a welfare loss. From society's point of view, it is not *a priori* clear whether outside income increases or decreases welfare.

Second, a normative discussion about the selection effect of outside income is relevant only if political ability and market skills are positively correlated. We share this assumption with the literature on political selection reviewed in Section 2. We find it plausible to assume that political competence and market skills are positively correlated, even though such a correlation might be far from perfect.

The last normative thought regards the question of whether alternative policy-induced equilibria can be found, which always outperform the equilibria with outside

income in terms of social welfare. For instance, would a policy increasing W (and thus convincing more skilled citizens to become politicians) and lowering $P(a)$ (by strictly regulating outside income so as to reduce moral hazard) always be preferable?¹⁵ Our framework shows that this is not necessarily the case. An increase in W would never convince citizens in the very upper tail of the ability distribution to enter politics, unless the parliamentary wage was set equal to $M(\bar{a}) - R_1 - R_2$, i.e., to the highest wage in the private market minus the ego rents from becoming a politician. This extremely high level of W may not be feasible for financial or political considerations; outside income would be the only way to make high ability citizens enter politics.

Of course, our framework only look at the time constraint problem of outside income and does not consider the additional problem of “conflict of interest” (i.e., the fact that members of parliament, in their political activity, might respond more to their private interests more than to their electoral constituencies). We made that choice because we can measure outside income and parliamentary effort, but not honesty (see the next sections). However, if outside income came with not only a shirking cost but also with an honesty cost, the previous policy conclusions might change.

4 The Data

We use a unique dataset about the members of the Italian Parliament (House of Representatives and Senate) for the period 1996-2006 (legislatures XIII and XIV). Although the original dataset also included legislatures X (1987-1992), XI (1992-1994) and XII (1994-1996), we could not use XI and XII because they only lasted for two years and the information about outside income could not be recovered. We then dropped legislature X to avoid time discontinuities.

The dataset contains the following individual information: yearly income tax declarations (including gross total income, net tax, and gross parliament salary) from the year before the election until the year before the next election;¹⁶ absenteeism (the num-

¹⁵See Besley (2004).

¹⁶Elections in Italy are usually held in the spring. In July, all members of parliament must submit their tax declaration referring to the previous fiscal year. For those with a second mandate or more, the year before the election corresponds to the last year in the previous legislature.

ber of electronic votes not attended without legitimate reason);¹⁷ appointments in the parliament (whether or not they are in a second committee and whether or not they are president or vice president of the parliament or one committee);¹⁸ political experience (this includes being a member of the directive office of a party at the local, regional and national level; past and current appointments as minister or state secretary; past appointments at the local government level, such as municipality, province or region counselor; or past appointments in the Italian and the European parliament); political party; electoral system under which the politician was elected (majoritarian or proportional); their district of election; coalition (whether they support the government or not); and demographics (age, gender, place of birth, place of residence, level of education, field of education, self-declared previous job, marital status, and number of children).

The sources we used to collect this information included: the Annals of the Italian Parliament (*La Navicella*) for the demographic information;¹⁹ the tax declarations' archive for members of Italian Parliament to find the individual income information (except the salary from the parliament); and the Italian Parliament Statistical Office for statistics on individual attendance and salaries.

A brief remark concerns the distinction between earned and unearned income. In the theoretical framework, we made the implicit assumption that outside income had to be intended as earned income, not unearned. The main force driving moral hazard is the possibility of allocating time otherwise devoted to public office to private activities. In the data, we only observe the total income, which is the sum of property rents, labor income from entrepreneurial and self-employed activities, and labor earnings for dependent employees.²⁰ We believe that property rents do not represent a significant share of individual income. Therefore, the total income we observe in the data can be

¹⁷ Attendance does not refer to any committee's activity.

¹⁸ All the representatives have to seat at least one committee.

¹⁹ *I Deputati e i Senatori del Parlamento Repubblicano*, edited by Editoriale Italiana. More information is available at <http://www.editoriale.it/deputati/index.htm>.

²⁰ Dividends and capital gains are not reported in the tax declaration since they are taxed as they are realized. For some individuals, we also observe labor earnings separately; however, this does not include labor income from non-dependent employment. Furthermore, the information for those who used the form *Unico* instead of *730* for the tax declaration is missing. We have reason to believe that choice of the two forms not to be random. For this reason, we do not use this information.

taken as a good proxy for earned income.²¹ Moreover, it is important to remark that even if total income were not a perfect proxy for earned income, it could still be a good measure of politicians' private activities because unearned income, like property rents, also requires some management time.

4.1 The Italian Institutional Framework

In 1994, there was a change in the Italian electoral system. While politicians in previous legislatures were elected through a proportional system, those in legislatures XII (1994-1996), XIII (1996-2001), and XIV (2001-2006) were instead elected through a mixed system (25% proportional and 75% majoritarian).²² Legislatures XI and XII lasted less than the statutory duration (two years instead of five) and anticipated elections were called. In every legislature, the number of seats has remain unchanged (945); 630 are in the House of Representatives and 315 are in the Senate.

Another important point concerns the changes in the political parties' composition. Before 1994, when the majoritarian electoral system was introduced, most of the parties were polarized towards a strong but variable center-wing coalition who had run parliament with no interruption since 1948. After 1994, new political actors joined the party system as a result of the corruption scandal which reached many formerly established political leaders (the judicial investigation was called "Mani Pulite"). At the same time, many parties changed their names and compositions to adjust to the bipolar framework induced by the majoritarian system (the so-called "Seconda Repubblica"). Hence, since the data used in this paper only refer to Legislatures XIII and XIV, they are homogeneous with respect to both the electoral rule and the composition of the Italian party system.

²¹The tax declarations' archive of the Italian Parliament contains information about the number of properties, but not their value. We checked on a random sample of politicians and we found that properties are not considerable in number. Of course, this could be because they were listed under the names of relatives.

²²For the Senate, the 25% proportional component was made up of the best second-placed candidates who were not elected in a majoritarian district.

4.2 Descriptive Statistics

Table 1 summarizes the characteristics of politicians in the dataset. The sample is made up of 1,763 members of parliament, with repeated observations for those who held two appointments. The majority are male (90%) and the mean age at the beginning of the legislative term is 51 years. Before being appointed, many politicians were lawyers (14%), professors (10%), entrepreneurs (10%), self-employed (9%), managers (9%) and teachers (9%).

Table 2 provides details about the educational levels of Italian representatives. It is worth noticing that the percentage of elected individuals with a university degree (70%) is considerably higher than for the rest of the Italian population (10% in 2002 for the 25 to 64 year-old population).²³

At the same time, 11% of politicians in the sample were completely new to politics when elected for the first time in parliament (see Table 3); for example, they had never before had any previous appointment in parliament, government, local government, or a political party. 55% had at least one previous appointment in parliament, 19% had been appointed in a government as a minister or vice minister, 57% had an appointment in a local government, and 51% had an executive appointment in a political party. However, persistence in parliament does not seem high (at least for the back-benchers): the average number of terms is 1.03 (2.03 including the term of election) and the number of years served is 3.26.²⁴

5 Empirical Findings on Moral Hazard

In this section, we explore the correlation between income measures and effort in parliament activity. First, following the assumption made in the theoretical framework, we should expect this correlation to be negative, i.e., moral hazard to be driven by the time conflict between political and outside activities. However, this is not necessarily the case at the empirical level. High-ability politicians may find a way to perform both

²³Source: *Education at a Glance*, OECD, 2004.

²⁴This is probably because legislatures XI and XII lasted for two years only and because of the replacement of politicians induced by the turmoil in the shift brought about by the already mentioned “Seconda Repubblica”.

activities (political and private) without interference; at that point, our theoretical predictions may be mitigated. At the same time, we test Prediction 1, i.e., high-ability politicians exerting a lower effort in parliament activity, by looking at the correlation between pre-election income (as a proxy for ability in the market) and effort.

As a measure of effort in parliament activity, we use absenteeism in electronic votes that lacked a legitimate reason.²⁵ Other measures could have been used, like the number of bills, the number of legislative achievements, or the number of appointments in parliament (as president or vice president of a branch of the parliament or a committee) or in government (like minister or vice minister). The problem with these measures is that they could be influenced by a bargaining process within the party or within the coalition to which the politician belongs. This is not the case with absenteeism. Table 4 reports summary statistics for absenteeism standardized by the total number of votes.²⁶ The average rate of absenteeism in the scheduled votes is 33%. Absenteeism seems to be particularly high for lawyers (37%), bureaucrats (35%), managers (34%), journalists (36%), entrepreneurs (34%), magistrates (36%), and professors (36%). With the exception of bureaucrats and magistrates, absenteeism is higher for those professions for which formal or substantial incompatibilities do not apply. On the other side, political party officials (27%), white collars (27%), teachers (27%), and blue collars (23%) seem particularly committed to parliament activity.

The dataset contains the following information for individual income of all members of parliament:

- the gross salary from serving in parliament, which is fixed within a legislature unless some inflation adjustments are applied;
- the gross total income, from the first to the fourth year in the legislature (for those serving a second mandate or more, we also observe the income in the fifth year of the legislature).

For freshmen, we also observe:

²⁵Cases of non-attendance because of parliament missions and cabinet meetings are not counted as absenteeism.

²⁶Some values are missing when self-declared previous job was not reported. Absolute values range from 0 to 34,577, over a total number of votes varying from 6,418 to 34,966 depending on the legislature and the branch of the parliament.

- the gross total income for one year before being elected.

We then compute a measure of outside income as the difference between the total income and the parliament salary in a specific year.

Each income variable is observed per year. However, since absenteeism is measured per legislature, we take the average of the outside income between the second and the fourth year.²⁷ Table 5 summarizes these variables. The average total income of a representative is 185,700 euros; 124,800 euros come as the parliament salary, but outside income is not an irrelevant component (60,900 euros, 32.8% of total income).²⁸ The standard deviation of outside income is particularly high (212,900 euros), with a maximum value of 5,419,100 euros. In the second part of the table, we restrict the sample to freshmen only, for whom we also have information about the income one year before the election. On average, citizens who then became politicians could count on 103,300 euros per year, with a standard deviation of 138,000 euros and a maximum value of 2,663,600 euros. Table 6 also shows that politicians with higher outside income were lawyers (113,500 euros), entrepreneurs (106,600 euros), and professors (109,300 euros).

In Table 7 we present the OLS estimates for the correlation between: (I) outside income and absenteeism; (II) pre-election income and absenteeism. After controlling for individual error components and a large set of characteristics (previous job, gender, age, education, political experience, political party, region of election, and legislature) absenteeism significantly increases along the outside income distribution (see column I). In particular, one standard deviation of outside income (212,900 euros) is associated with an increase of 3.9 percentage points in absenteeism, which corresponds to 12.1% of the mean absenteeism (33%). We are aware that this estimate could be biased by an unobservable component not included in the regression. High-ability politicians might

²⁷Tax declarations refer to the fiscal year, which is from January to December. For this reason, we cannot recover the information for the first six months in the legislature (a legislature usually starts in the late Spring). The fifth year is only available for those who are reelected in the next legislature.

²⁸In addition to the salary, a politician receives from the parliament 206.58 euros (2006 value) for each day of voting. This is meant to be a reimbursement for accommodation expenses in Rome. For this reason, it does not appear in the tax declaration. Considering that the average number of voting days per month is 12, the variable component of the remuneration of an elected official in Italy amounts to 29,747 euros per year (23.7% of the fixed salary). However, given that this component effectively accounts for accommodation expenses, we believe it cannot be considered as a proper pay-incentive scheme.

be able to earn an equal amount of outside income in a shorter time than others. If this is true, we can then consider our estimate as a lower bound of the true effect of outside income on absenteeism.²⁹

In column II of Table 7, we test the correlation between pre-election income and absenteeism.³⁰ One standard deviation of pre-election income (138,000 euros) is again associated with an increase of 3.9 percentage points in absenteeism. A shift from the pre-election income of white collars to that of lawyers is associated with an increase of 2.3 percentage points in absenteeism (7% with respect to the mean). These results confirm Prediction 1 of the theoretical framework. Citizens with potentially higher outside opportunities have a lower attendance in votes.

In order to detect heterogeneity in the correlation between absenteeism and income measures, we perform quantile regressions using the same control variables as shown in Table 7. Figure 5 shows the estimated coefficients of the outside income variable at different quantiles. The moral hazard actually increases across the absenteeism distribution. An additional amount of outside income is more likely to reduce the participation in voting when absenteeism is already high; at lower levels, instead, additional outside income does not come with a reduction in attendance to parliament votes. This suggests that the time constraint becomes particularly binding when the time otherwise not devoted to parliament activity is no longer sufficient. Figure 6 shows the estimated coefficients of the pre-election income variable at different quantiles. The moral hazard does not arise for the lower third of the absenteeism distribution (i.e., the estimated coefficient is not statistically different from zero in that region). This means that there is a relevant fraction of hard-working politicians for whom outside income opportunities have no effect on parliament effort (e.g., because their ego rents from doing politics, R_2 , are considerably higher with respect to the other politicians). However, for two-thirds of the sample (and in particular, for politicians with higher absenteeism rates), we still observe a moral hazard problem.

²⁹Since absenteeism rate is bounded between 0 and 1, we also tried with the quasi-likelihood method proposed by Papke and Wooldridge (1996). Results were qualitatively identical.

³⁰This estimate is available for freshmen only.

6 Stylized Evidence on Sorting

Given the nature of our dataset, we cannot test the selection implications of our model in a straightforward way. In fact, we miss two main counterfactuals: citizens who did not run for election and candidates who were not elected. Furthermore, the regulation of outside income in Italy never changed during the period of time covered by the dataset. However, something interesting can still be extracted from our data. Far from being able to show that positive sorting is a dominant equilibrium in the selection into parliament, in this section we present some stylized evidence that we believe is not easy to reconcile with the standard adverse selection argument.

As a first exercise, we compare the pre-election income distribution for politicians in our sample with the income distribution of the Italian population (for the period 1995-2004). The latter comes from the Bank of Italy Household Survey (SHIW), which is a representative sample of the Italian population. As we can see in Figure 7, politicians' income distribution is always located to the right with respect to the Italian population, meaning that on average those who have become politicians had a higher market income. This is also true when we control for age, education and gender (see Figure 8). We test the significance of these distributional differences in Table 8, which reports a quantile regression over a joint distribution of the two samples with a dummy *Pol* equal to one if the individual is a politician, and zero otherwise.³¹ The dummy is always positive and significant, although the premium for future politicians declines as far as we test its significance at lower quantiles (from 41,379 euros in the 90th quantile to 6,019 euros in the 10th quantile). To control under-reporting in the SHIW survey (see Brandolini, 1999), in column III we run the same quantile regressions after increasing the net income of the Italian population by 30% (half an increment for dependent employees). In this case, the gap is lower, but still positive and statistically significant at highest quantiles. As far as pre-election income can be interpreted as a proxy for ability, it is difficult to conclude that citizens appointed in parliament were the outcome of an adverse selection mechanism. Our theoretical framework offers a possible explanation to this evidence.

³¹Following Mansky and Lerman (1977), in order to control for choice-based sampling, we use the *Pesofl* weights (the inverse of the sampling probability) available in the SHIW dataset, and a weight equal to one for the politicians (the whole universe of members of parliament).

In the following, we decompose the gain from election (excluding the ego rents, which we do not observe) into its two main financial components: the parliament salary and outside income. Table 9 summarizes pre-election income, total income while in office, parliament salary, and outside income by quintiles of the income distribution before election. In every quintile, the average total income while in office exceeds the pre-election income, i.e., all members of parliament (except 68) had a pecuniary gain from being elected (from +346% in the first quintile to +19% in the highest quintile). However, the absolute value and composition of this gain are significantly different at different levels of pre-election income. As can be seen in Figure 9, citizens with a low income before the election gain the most because of the salary they receive once in office (+306% for citizens in the lowest quintile), which more than offsets the drop in market income (outside income being only 45% of pre-election income, with only 88 individuals experiencing an increase). On the contrary, citizens with a high income before the election gain because they can keep running their private business (for citizens in the highest quintile outside income is 75% of pre-election income). In fact, if they had had to rely on parliament salary only, they would have experienced a 55% income loss.

What is particularly important is that the ratio between outside income and pre-election income increases as we move up in the pre-election income distribution, which is empirical evidence in favor of Prediction 3. High-ability citizens (those with higher pre-election income) have a relative advantage over election in terms of outside income, i.e., the marginal remuneration to ability for market income is greater when appointed than when not appointed ($P'(a) > M'(a)$). This is a necessary condition for observing citizens of the upper tail of the income distribution entering politics and a reasonable explanation for the puzzle we observe when we compare the politicians in our dataset with the rest of the Italian population.

In order to control for incompatibilities between previous job and current public office, in Table 10 we run a regression of the log of the outside income on the log of pre-election income to estimate the elasticity between the two. This is equivalent to testing the relationship between the shape of pre-election and outside income in a multivariate framework. As from column I, the elasticity is significantly higher than one even after controlling for the previous job and the standard set of controls. A 1% increase in pre-

election income is associated with a more than proportional (1.19%) increase in outside income.

One main problem with the estimate in column I, as well as with Figure 9, is that we do not actually observe outside income opportunities $P(a)$, but instead observe outside income conditional to effort $(1 - e) * P(a)$. For this reason, in column II, we include absenteeism as an additional control. Since absenteeism is potentially endogenous with respect to outside income (which will likely bias the rest of the estimates), we instrument it with a variable indicating whether the politician belongs to the government coalition or not. This variable is very likely to affect absenteeism, given that in Italy, all government legislative actions have to be approved by parliament. At the same time, it is reasonable to assume that individual outside income (through its correlation with pre-election income) is irrelevant in determining the victory of a candidate coalition against the other: the right-wing coalition lost the 1996 election but won the 2001 election, despite the average market income of its candidates always being significantly higher than for left-wing coalition politicians.³² At the same time, the *ex-ante* uncertainty surrounding the electoral results makes it difficult for a candidate to choose the winning coalition in advance.³³ It is more difficult, however, to assume that being in a government coalition only affects the outside income trough of absenteeism and then to exclude it from the second stage. Being in the majority coalition might increase politicians' bargaining power in the market sector, as well as with their acquaintances. However, we have reason to believe that the direct effect of being in the majority coalition is not remarkable. In the last decade, the Italian parliament has been alternately controlled by both coalitions (left-wing and right-wing), a fact that reduces the possibility of extracting significant short-run rents from being in power.

The first-stage estimates in column II show that being in a government coalition has a significant and negative impact on absenteeism: politicians supporting the government are more likely to attend votes because they have to support the government legislative activity. At the same time, second-stage estimates confirm the results in column I, although the elasticity between pre-election and outside income is now slightly

³²77,533 euros against 56,082 euros in 1996; 110,311 euros against 71,506 euros in 2001.

³³The margin between the two coalitions was small, both in 1996 (44.9% against 40.3%) and in 2001 (45.5% against 43.7%). Source: Ministry of Interior (<http://politiche.interno.it/>).

lower (1.17). This evidence supports the possibility that $P'(a) > M'(a)$; then, our theoretical framework offers a possible explanation to the fact that many members of parliament belonged to the upper tail of the income distribution before election. It is the opportunity to earn outside income that make high-ability citizens willing to stand for election.

7 Conclusions

In this paper, we have investigated the possibility of elected officials working in the private sector while appointed in parliament. We have shown, both theoretically and empirically, that after removing the mutual exclusiveness between the elective office and outside work, a moral hazard problem arises which was not identified in the previous literature. At the same time, as long as high-ability citizens do not have to give up their private business, they are more likely to run for election and adverse selection into politics is no longer the only possible outcome.

The possibility for members of parliament to earn outside income produces a trade-off between moral hazard and adverse selection. Bad but dedicated politicians come along with good but not fully committed politicians. Normative conclusions about the desirability of outside income depend on how much ability compensates for effort and vice versa.

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A Appendix. Outside Income Regulation and Incompatibilities: Cross-Country Comparison

In this appendix we describe the regulation of outside income in the following three countries: US, UK, and Italy.

A.1 US - House of Representatives and Senate

In 1992 the House of Representatives adopted a strict ethic code, which incorporated the contents of previous related bills, mainly in 1977, 1989 and 1991. According to these guidelines, the amount of outside earned income that representatives and senior staff can have in any calendar year is limited. The limit per year is 15% of the rate of pay for Level II of the Executive Schedule in effect on January 1 of that year. The rate of pay for Executive Level II in 2006 was \$165,200. Accordingly, the outside earned income limit for calendar year 2006 was \$24,780.

These restrictions apply only to earned income, that is, employment, rather than investment income. The rule defines the term outside earned income as “wages, salaries, fees, and other amounts received or to be received as compensation for personal services actually rendered.”. The rule specifically excludes: a) the individual’s congressional salary; b) compensation for services rendered prior to coming to Congress or before the effective date of the rule; c) amounts paid to a qualified pension, profit-sharing, or stock bonus plan; d) in the case of a family-controlled business or farm, amounts received in connection with protecting or managing one’s investment as long as the personal services rendered do not in themselves generate a significant amount of income; e) copyright royalties received from established publishers under usual and customary contractual terms.

As for honoraria, until 1991 all the representatives, officers, and employees were free to accept honoraria of up to \$2,000 per speech, appearance, or article, subject only to the outside earned income cap then effective for representatives. The Ethics Reform Act of 1989 prohibited all members, officers, and employees of the House (as well as all executive branch employees) from receiving any honoraria, as of January 1 1991. Similar restrictions apply to teaching activities: members and covered employees may not teach

for compensation, unless they receive prior written permission from the Committee on Standards.

Violation of these laws may lead to disciplinary action in the House and/or civil fines of up to \$10,000 or the amount of compensation for the prohibited conduct, whichever is greater. However, the statute specifically provides that any House Member or employee who acts in good faith in accordance with a written advisory opinion from the Committee on Standards shall not be subject to any sanction.

Identical restrictions apply to the US Senate.

A.2 UK - House of Commons and House of Lords

The UK system is based on the principles stated in the Code of Conduct, adopted by the House of Commons on July 2005 and by the House of Lords in March 2002. These two set of rules are quite similar. The set of incompatibilities is quite narrow and mainly concerns public occupations. In particular, members may not simultaneously occupy the following posts: membership in the armed forces, policemen, civil servants, certain judicial offices, clergymen (except of non-conformist churches), peers, membership in a large number of public boards and tribunals.

As for the possibility to carry out outside activities, the UK system provides for a high degree of transparency. Members are required to register their pecuniary interests in a Register of Members' Interests. The duty of compiling the Register now rests with the Parliamentary Commissioner for Standards. The main purpose of the Register of Members' Interests is to provide information of any pecuniary interest or other material benefit which a Member receives which might reasonably be thought by others to influence his or her actions, speeches or votes in Parliament, or actions taken in his or her capacity as a Member of Parliament.

According to the House of Lords Rule of Conduct, the following financial interests are always relevant and therefore must be registered: any consultancy agreement under which Members of the House provide parliamentary advice or services; employment or any other financial interest in businesses involved in parliamentary lobbying on behalf of clients, including public relations and law firms but Members of the House involved with organizations that offer commercial lobbying services are not obliged to refrain

from participating in parliamentary business in connection with all clients of that organization but only their personal clients; any remunerated service which Members of the House provide by virtue of their position as members of Parliament, and the clients of any such service; employment as a non-parliamentary consultant; remunerated directorship; regular remunerated employment (excluding occasional income from speeches, lecturing, broadcasting and journalism); shareholdings amounting to a controlling interest; provision by an outside body of secretarial and research assistance; visits with costs paid in the United Kingdom and overseas, made as a member of Parliament, except any visits paid for from public funds.

Further, the list above is not exhaustive. Relevant financial interests may also include (depending on their significance): shareholdings not amounting to a controlling interest; landholdings (excluding Members' homes); the financial interests of a spouse or relative or friend; hospitality or gifts given to a Member which could reasonably be regarded as an incentive to support a particular cause or interest.

Interests that do not exceed 1% of the current parliamentary salary do not have to be registered. Further, except for remuneration received by Members for advice in relation to parliamentary matters, Members of the House are not required to disclose how much they earn from the financial interests set out in paragraphs 12 and 13, but they may do so if they wish.

No limits are set for outside earnings (no salary cap, no ban for speeches, etc.).

A.3 Italy - *Senato and Camera dei Deputati*

In Italy there are several incompatibilities with non elective public offices. Members of parliament cannot simultaneously hold the following positions: ordinary magistrate, magistrate of the Supreme Court and of the Supreme Committee of the Magistracy, member of the National Council of Economy and Labor, executive manager of a state-owned or state-assisted company. Ministers cannot receive any compensation for the functions they exercise in companies or other entities that pertain to their ministries.

The Committee on Elections (*Giunta per le Elezioni*) is the institutional body in charge for the decision concerning incompatibilities. In the first thirty days of the legislature, representatives have to declare all their public, institutional and private

positions to the Committee on Elections. They are asked to update this information over time when changes occur. They also have to declare personal estate properties as well as any shareholding and directorship. In case an incompatibility is detected, representatives must choose whether they want to keep the public office or the private activity. They have thirty days to take a decision.

No limits are set for outside earnings, as in the UK.

B Appendix. Normative Implications of the Theoretical Framework

The model presented in Section 3 highlights a trade-off between political selection and moral hazard, which is driven by the possibility of making outside income when elected in parliament. On the one hand, outside income may induce high-ability citizens to self-select into politics, when they would never do it if $P(a)$ were not allowed. On the other hand, since time is a scarce resource, outside income reduces the effort in parliament activity. We now make these normative implications more transparent. First, we assume that policy-making competence is positively correlated with market skills, which is the standard assumption used throughout the literature on political selection.³⁴ We also assume that the output of a politician is a function of ability and effort:

$$F(a, e) = e\tilde{F}(a) + (1 - e)[\tilde{F}(a) - \gamma] \quad (4)$$

with $\tilde{F}'(a) > 0 \forall a$, $\tilde{F}(a) - \gamma > 0$ for some a , and $\gamma > 0$. Politicians with higher skills are more valuable because of their greater competence in problem solving. Politicians who shirk produce a fixed social cost equal to γ .

How do the four nontrivial equilibria in Section 3.3 compare with the baseline case of no outside income? Remember that the set of elected politicians is a random draw from the pool of citizens who self-selected into politics. The reference case is the baseline equilibrium with no-outside-income, where the average output is

$$\bar{F} = \frac{1}{a_1} \int_0^{a_1} \tilde{F}(a) da. \quad (5)$$

In case A2 (Figure 1), the average output is

$$\bar{F}_{A2} = \frac{1}{a_2} \int_0^{a_2} \tilde{F}(a) da - \frac{(a_2 - a^*)\gamma}{a_2}, \quad (6)$$

i.e., the average productivity of a politician in the interval $[0, a_2)$ minus the shirking cost of politicians in the interval $[a^*, a_2)$. The welfare comparison with the baseline no-outside-income situation depends on the relative position of a_1 and a_2 . If $a_1 = a_2$, we have that $\bar{F}_{A2} < \bar{F}$, since the average productivity is the same but outside income comes

³⁴See Caselli and Morelli (2004), Besley (2005), and Poutvaara and Takalo (2007).

with a shirking cost. If $a_1 > a_2$, we have that $\bar{F}_{A2} < \bar{F}$, since outside income comes with an adverse selection and a shirking cost. If $a_1 < a_2$, the comparison between \bar{F}_{A2} and \bar{F} depends on the primitive parameters, since outside income comes with a better selection that may (or may not) compensate for the shirking cost.

In case B2 (Figure 2), the average output of self-selected politicians is

$$\bar{F}_{B2} = \frac{1}{\bar{a} - a_2} \int_{a_2}^{\bar{a}} \tilde{F}(a) da - \gamma. \quad (7)$$

In this case, $a_1 < 0$, since low-quality (and potentially high-effort) citizens stay away from politics. Hence, $\bar{F}_{B2} > \bar{F}$, as long as high-ability politicians who shirk are not a cost for society ($F(a, 0) > 0, \forall a \in [a_2, \bar{a}]$).

In case C1 (Figure 3), the average output is exactly equal to the no-outside-income counterfactual:

$$\bar{F}_{C1} = \frac{1}{a_1} \int_0^{a_1} \tilde{F}(a) da, \quad (8)$$

so that $\bar{F}_{C1} = \bar{F}$. Finally, in case C2 (Figure 1), the average output is

$$\bar{F}_{C2} = w_1 \left[\frac{1}{a_1} \int_0^{a_1} \tilde{F}(a) da \right] + w_2 \left[\frac{1}{\bar{a} - a_2} \int_{a_2}^{\bar{a}} \tilde{F}(a) da - \gamma \right] = w_1 \bar{F} + w_2 \hat{F}, \quad (9)$$

with $w_1 = a_1 / (a_1 + \bar{a} - a_2)$ and $w_2 = (\bar{a} - a_2) / (a_1 + \bar{a} - a_2)$. Hence, the comparison between \bar{F}_{C2} and \bar{F} depends again on the primitive parameters. If the selection gain of equilibrium C2 with respect to the baseline no-outside-income case ($\hat{F} - \bar{F}$) is greater than the shirking cost (γ), then $\bar{F}_{C2} > \bar{F}$, or vice versa.

The bottom line is that the welfare comparison of situations *with* and *without* outside income is ambiguous. If outside income comes with a selection gain (case B2, case C2, and case A2 with $a_2 > a_1$), this gain may more than compensate the shirking cost, leading to a welfare improvement. If outside income comes with no selection gain (case C1 and case A2 with $a_2 \leq a_1$), shirking always produces a loss. From society's point of view, it is not *a priori* clear whether outside income increases or decreases welfare. There is a trade-off between adverse selection and moral hazard.

Tables and Figures

Table 1: Sample Characteristics

	Obs.	Mean	St. Dev.	Min	Max
Male	1,763	0.90	0.30	0	1
Age	1,763	50.95	9.34	27	88
Years of Schooling	1,707	16.09	2.36	5	20
Age at the Entry	1,763	47.27	9.22	26	88
Lawyer	1,725	0.14	0.35	0	1
Bureaucrat	1,725	0.07	0.25	0	1
Manager	1,725	0.09	0.28	0	1
Political Party Official	1,725	0.07	0.26	0	1
Journalist	1,725	0.08	0.27	0	1
Entrepreneur	1,725	0.10	0.30	0	1
Self Employed	1,725	0.09	0.29	0	1
Teacher	1,725	0.09	0.28	0	1
White Collar	1,725	0.04	0.20	0	1
Magistrate	1,725	0.02	0.15	0	1
Physician	1,725	0.08	0.27	0	1
Blue Collar	1,725	0.00	0.06	0	1
Professor	1,725	0.10	0.30	0	1
Union Representative	1,725	0.02	0.15	0	1
Army Officer	1,725	0.01	0.08	0	1
Student	1,725	0.00	0.03	0	1
House of Representatives	1,763	0.66	0.47	0	1
Government Coalition	1,763	0.53	0.50	0	1
Parliament Appointments	1,763	0.15	0.36	0	1
Legislature XIII	1,763	0.51	0.50	0	1
Legislature XIV	1,763	0.49	0.50	0	1
Majoritarian Election	1,763	0.75	0.43	0	1
North-West District	1,763	0.26	0.44	0	1
North-East District	1,763	0.18	0.39	0	1
Center District	1,763	0.18	0.39	0	1
South District	1,763	0.25	0.43	0	1
Islands District	1,763	0.12	0.32	0	1

Note. Life senators and ministers excluded. Self-declared previous job.

Table 2: Highest Educational Level

	Freq.	(%)	Freq.	(%)
Primary	2	0.11		
Lower Secondary	25	1.42		
Upper Secondary	446	25.30		
			189	42.38
General (<i>Liceo</i>)			204	45.74
Vocational			53	11.88
Missing			446	100.00
Total				
B.A.	1,075	60.98		
			39	3.63
Natural Sciences			95	8.84
Economics and Statistics			463	43.07
Law			152	14.14
Political Science and Sociology			49	4.56
Engineering			195	18.14
Literature			29	2.70
Architecture			47	4.37
Medicine			6	0.56
Missing			1,075	100.00
Total				
M.A. or Ph.D.	159	9.02		
			2	1.26
Natural Sciences			5	3.14
Economics and Statistics			21	13.21
Law			7	4.40
Political Science and Sociology			7	4.40
Engineering			4	2.52
Literature			0	0.00
Architecture			112	70.44
Medicine			1	0.63
Missing			159	100.00
Total				
Missing	56	3.18		
Total	1,763	100.00		

Note. Self reported highest educational level completed. Life senators and ministers excluded.

Table 3: Political Experience

	All			Freshmen		
	Obs.	Mean	St. Dev.	Obs.	Mean	St. Dev.
Parliament (n. terms)	1,763	1.03	1.38			
Parliament (years)	1,763	3.26	4.90			
<i>Ever appointed in:</i>						
Parliament	1,763	0.55	0.50			
Government	1,763	0.19	0.39	788	0.02	0.15
Local Government	1,763	0.57	0.50	788	0.55	0.50
Political Party	1,763	0.51	0.50	788	0.48	0.50
Any	1,763	0.89	0.32	788	0.74	0.44

Note. *Any* means they held at least one of the appointments listed above. Life senators and ministers excluded.

Table 4: Absenteeism by Previous Job

	Obs.	Mean	St. Dev.	Min.	Max.
Army Officer	10	0.39	0.30	0.02	0.83
Lawyer	230	0.37	0.27	0.00	0.99
Professor	157	0.37	0.29	0.01	0.91
Journalist	126	0.36	0.24	0.00	0.96
Magistrate	40	0.36	0.27	0.03	0.87
Bureaucrat	107	0.35	0.29	0.01	0.95
Entrepreneur	163	0.34	0.28	0.00	0.97
Manager	141	0.34	0.27	0.00	0.90
Union Representative	36	0.33	0.31	0.01	0.86
Self Employed	152	0.32	0.26	0.00	0.96
Physician	127	0.32	0.26	0.00	0.95
Political Party Official	114	0.27	0.26	0.00	0.98
White Collar	70	0.27	0.24	0.00	0.86
Teacher	147	0.27	0.26	0.01	0.99
Blue Collar	6	0.23	0.29	0.02	0.79
Student	1	0.23	0.00	0.23	0.23
Total	1,627	0.33	0.27	0.00	0.99

Note. Percentage of votes non attended without justification. Life senators and ministers excluded.

Table 5: Income Measures

	Obs.	Mean	Median	St. Dev.	Min.	Max.
<i>All:</i>						
Total Income	1,688	185.7	142.7	213.0	123.3	5542.4
Parliament Salary	1,763	124.8	123.3	1.5	123.3	126.4
Outside Income	1,688	60.9	17.9	212.9	0.0	5419.1
<i>Freshmen:</i>						
Pre-Election Income	859	103.3	70.6	138.0	0.0	2663.6
Total Income	863	179.3	140.2	150.2	123.3	3150.9
Parliament Salary	891	124.9	126.4	1.5	123.3	126.4
Outside Income	863	54.4	15.5	150.2	0.0	3024.5

Note. All income measures are gross, in thousand of euros (2004 prices), and averaged between the second and the fourth year in the legislature (except *Pre-Election Income* which refers to the last fiscal year before election). *Outside Income* normalized to zero when negative. Life senators and ministers excluded.

Table 6: Outside Income by Previous Job

	Obs.	Mean	Median	St. Dev.	Min.	Max.
Lawyer	240	113.5	54.3	179.1	0	1,183.5
Professor	161	109.3	28.1	393.4	0	3,804.5
Entrepreneur	161	106.6	24.7	452.7	0	5,419.1
Army Officer	9	82.8	95.7	36.0	0	124.2
Magistrate	42	60.6	28.1	74.0	0	296.3
Manager	141	58.1	11.5	181.8	0	1,508.4
Bureaucrat	111	49.5	10.3	121.0	0	1,058.2
Self Employed	151	44.4	16.2	90.5	0	930.5
Physician	126	41.5	24.2	55.9	0	445.3
Journalist	127	37.6	11.1	63.5	0	401.7
Union Representative	38	17.8	7.9	20.1	0	73.1
Teacher	148	17.2	8.4	22.2	0	147.7
White Collar	71	14.9	3.0	27.2	0	127.6
Political Party Official	118	12.5	2.2	21.9	0	142.9
Blue Collar	6	2.1	0.2	3.2	0	7.8
Student	2	0.0	0.0	0.0	0	0.0
Total	1,652	61.4	17.6	215.1	0	5,419.1

Note. Gross *Outside Income* in thousand of euros (2004 prices), averaged between the second and the fourth year in the legislature, and normalized to zero when negative. Life senators and ministers excluded.

Table 7: The Determinants of Absenteeism – OLS estimates

	I		II	
	Coeff.	P-Value	Coeff.	P-Value
Outside Income	0.0185***	0.000		
Pre-Election Income			0.0280***	0.001
Lawyer	0.0317	0.233	0.0395	0.340
Bureaucrat	0.0059	0.830	0.0052	0.900
Manager	0.0403	0.133	0.0265	0.523
Political Party Official	0.0431	0.144	0.0431	0.332
Journalist	0.0098	0.727	0.0200	0.655
Entrepreneur	0.0187	0.456	0.0277	0.479
Teacher	0.0088	0.742	0.0178	0.664
Self Employed	0.0136	0.594	0.0282	0.477
Magistrate	0.0222	0.530	0.0117	0.838
Physician	0.0232	0.392	0.0354	0.408
Blue Collar	0.0112	0.850	0.0967	0.342
Professor	0.0313	0.251	0.0446	0.295
Union Representative	0.0115	0.794	-0.0251	0.624
Army Officer	-0.0039	0.938	0.0383	0.622
Male	0.0256	0.111	0.0420	0.055
Age	-0.0015**	0.018	-0.0022***	0.010
B.A. Degree	-0.0009	0.943	-0.0098	0.571
House of Representatives	-0.1150***	0.000	-0.0995***	0.000
Government Coalition	-0.3176***	0.000	-0.2896***	0.000
Proportional Election	-0.0501***	0.000	-0.0298**	0.066
Legislature XIV	-0.0939***	0.000	-0.1170***	0.000
Political Party Exp.	-0.0537***	0.000	-0.0421***	0.009
Parliament Exp.	0.0141	0.175	0.0239	0.283
Government Exp.	0.0763***	0.000	0.0164	0.639
Local Government Exp.	-0.0186*	0.056	-0.0274**	0.049
Parliament Appointment	-0.0233	0.109	0.0042	0.895
Party Appointment	0.0616***	0.000	0.0489***	0.010
Second Committee	-0.0067	0.666	-0.0090	0.642
Political Party		yes		yes
District of Election		yes		yes
R^2	0.5600		0.5474	
N. of observations	1,586		813	

Note. Dependent variable: Percentage of votes non attended without justification. Reference category: white collars. All income measures are gross, in hundred thousand of euros (2004 prices), and averaged between the second and the fourth year in the legislature (except *Pre-Election Income* which refers to the last fiscal year before election). Outliers with more than two millions euros of income excluded. *Outside Income* normalized to zero when negative. Life senators and ministers excluded. Clustered (individual level) standard errors. Estimation (II) for freshmen representatives only.

Table 8: Income Distribution of Italian Population vs. Politicians - Quantile regression

Decile	I		II		III	
	β -Politician	P-value	β -Politician	P-value	β -Politician	P-value
0.1	6.9277	0.000	6.0194	0.000	2.0458	0.234
0.2	10.3043	0.000	6.0832	0.000	-0.1611	0.920
0.3	13.1722	0.000	10.8644	0.000	3.7743	0.044
0.4	16.6715	0.000	10.9145	0.000	3.1251	0.123
0.5	20.3485	0.000	11.4547	0.000	1.9901	0.362
0.6	26.5309	0.000	19.2457	0.000	9.7688	0.000
0.7	36.5221	0.000	22.0028	0.000	9.8718	0.009
0.8	52.5372	0.000	27.0098	0.000	11.6699	0.008
0.9	67.0429	0.000	41.3787	0.000	27.7688	0.000
Italian Population	18,326		1,176		1,176	
Representatives	462		231		231	

Note. Only managers, lawyers, self-employed, entrepreneurs and white collars. *Pesoft* weights for the SHIW Italian population sample. Net total income at 2004 prices. Also control for gender, type of job, age, and education. Age between 25-65 in estimation (I). Age between 40-60, and males with at least BA degree in estimation (II). Age between 40-60, males with at least BA degree, and income for the Italian population raised by 15% (white collars and managers) and 30% (self-employed, lawyers, and entrepreneurs) in estimation (III). Outliers with more than one million euros of income excluded.

Table 9: The Pecuniary Gain from Election by Pre-Election Income Quintiles

	Obs.	Mean	St. Dev.	Min.	Max.
<i>First Quintile:</i>					
Pre-Election Income	141	30.6	5.6	20.3	39.7
Total Income	141	136.5	16.7	123.3	240.1
Parliament Salary	141	124.3	1.5	123.3	126.4
Outside Income	141	12.2	16.9	0.0	116.8
<i>Second Quintile:</i>					
Pre-Election Income	141	51.5	6.8	39.8	62.4
Total Income	141	144.6	25.8	123.3	273.4
Parliament Salary	141	124.8	1.5	123.3	126.4
Outside Income	141	19.8	26.1	0.0	150.1
<i>Third Quintile:</i>					
Pre-Election Income	141	74.5	7.3	62.5	88.9
Total Income	141	149.3	32.3	123.4	321.1
Parliament Salary	141	125.0	1.5	123.3	126.4
Outside Income	141	24.2	32.5	0.0	194.7
<i>Fourth Quintile:</i>					
Pre-Election Income	141	114.8	16.7	89.3	148.1
Total Income	141	169.8	47.5	123.4	385.4
Parliament Salary	141	125.1	1.5	123.3	126.4
Outside Income	141	44.7	47.8	0.0	262.2
<i>Fifth Quintile:</i>					
Pre-Election Income	141	278.6	256.7	148.6	2,663.6
Total Income	141	331.9	332.5	124.3	3,150.9
Parliament Salary	141	125.1	1.5	123.3	126.4
Outside Income	141	206.8	332.6	0.0	3,024.5

Note. Freshmen representatives only. All income measures are gross, in thousand of euros (2004 prices), and averaged between the second and the fourth year in the legislature (except *Pre-Election Income* which refers to the last fiscal year before election). *Outside Income* normalized to zero when negative. Life senators and ministers excluded. Representatives with pre-election income lower than 20 thousand euros dropped for measurement error problems.

Table 10: The Elasticity of Outside Income w.r.t. Pre-Election Income

<i>Dependent variable</i>	I		II			
	Log Outside Income		second-stage Log Outside Income		first-stage Absenteeism	
	Coeff.	P-Value	Coeff.	P-Value	Coeff.	P-Value
Log Pre-Election Income	1.1896 ***	0.000	1.1735 ***	0.000	0.0291 **	0.014
Absenteeism	0.0363	0.928	0.5203	0.379		
Lawyer	1.9944 **	0.024	1.9909 **	0.024	0.0071	0.897
Bureaucrat	0.4178	0.652	0.4294	0.644	-0.0241	0.672
Manager	0.8408	0.340	0.8425	0.341	-0.0036	0.947
Political Party Official	0.3081	0.747	0.3047	0.750	0.0072	0.907
Journalist	0.7812	0.385	0.7872	0.383	-0.0123	0.827
Entrepreneur	1.5161 *	0.074	1.5220 *	0.074	-0.0122	0.817
Teacher	1.0202	0.244	1.0159	0.248	0.0089	0.875
Self Employed	1.4558	0.101	1.4633	0.101	-0.0155	0.776
Magistrate	0.4397	0.650	0.4459	0.646	-0.0127	0.854
Physician	1.4766 *	0.093	1.4693 *	0.096	0.0151	0.788
Blue Collar	0.8967	0.370	0.9116	0.366	-0.0307	0.870
Professor	0.8937	0.305	0.8803	0.313	0.0276	0.626
Union Representative	0.9694	0.315	0.9819	0.311	-0.0259	0.706
Army Officer	1.1277	0.253	1.1244	0.260	0.0068	0.940
Male	-0.1446	0.596	-0.1660	0.546	0.0443	0.116
B.A. Degree	-0.1383	0.500	-0.1325	0.522	-0.0121	0.560
Age	0.0615 ***	0.000	0.0628 ***	0.000	-0.0026 ***	0.005
Political Party Exp.	-0.3187	0.204	-0.3028	0.219	-0.0330 *	0.098
Government Exp.	-0.1273	0.775	-0.1255	0.777	-0.0037	0.939
Local Government Exp.	-0.2912	0.108	-0.2754	0.147	-0.0327 **	0.046
Legislature XIV	-0.4968 ***	0.006	-0.4454 **	0.023	-0.1062 ***	0.000
House of Representatives	-0.1642	0.231	-0.1113	0.492	-0.1092 ***	0.000
Proportional Election	-0.0857	0.638	-0.0669	0.715	-0.0388 **	0.026
Government Coalition	-0.1411	0.561			-0.2915 ***	0.000
Political Party		yes		yes		yes
District of Election		yes		yes		yes
Parliament Appointment	0.1644	0.535	0.1793	0.504	-0.0308	0.385
Party Appointment	0.0542	0.836	0.0291	0.912	0.0519 **	0.021
Second Committee	0.3827 **	0.047	0.3816 **	0.048	0.0022	0.923
R^2	0.3906		0.3893		0.5230	
N. of observations	633		633		633	

Note. Freshmen representatives only. Dependent variable: Log of *Outside Income*. All income measures are gross, in thousand of euros (2004 prices), and averaged between the second and the fourth year in the legislature (except *Pre-Election Income* which refers to the last fiscal year before election). Life senators and ministers excluded. Outliers with more than two millions euros of income excluded. Clustered (individual level) standard errors. In column II absenteeism is instrumented with a dummy indicating whether the politician belongs to the coalition supporting the government or not.

Figure 1: Negative Hierarchical Sorting with Moral Hazard (case A2)

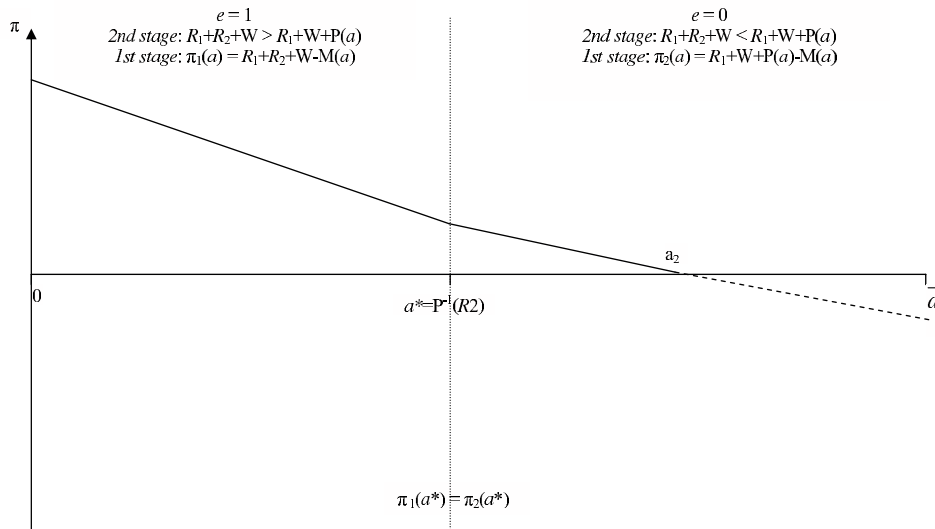


Figure 2: Positive Hierarchical Sorting (case B2)

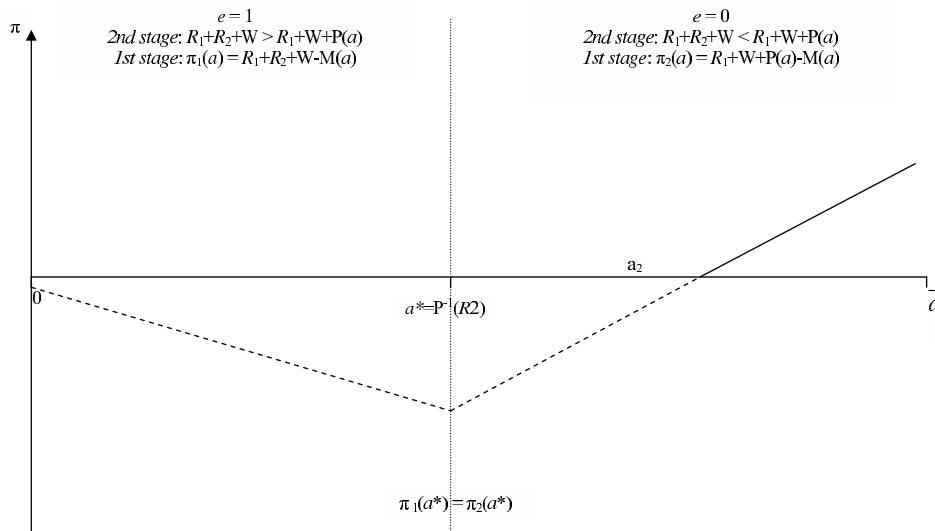


Figure 3: Negative Hierarchical Sorting without Moral Hazard (case C1)

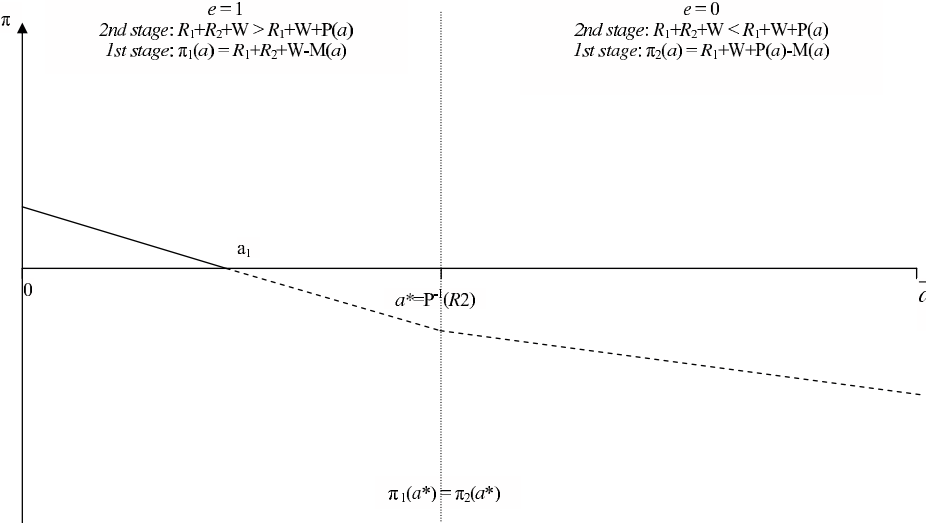


Figure 4: Two-Tail Sorting (case C2)

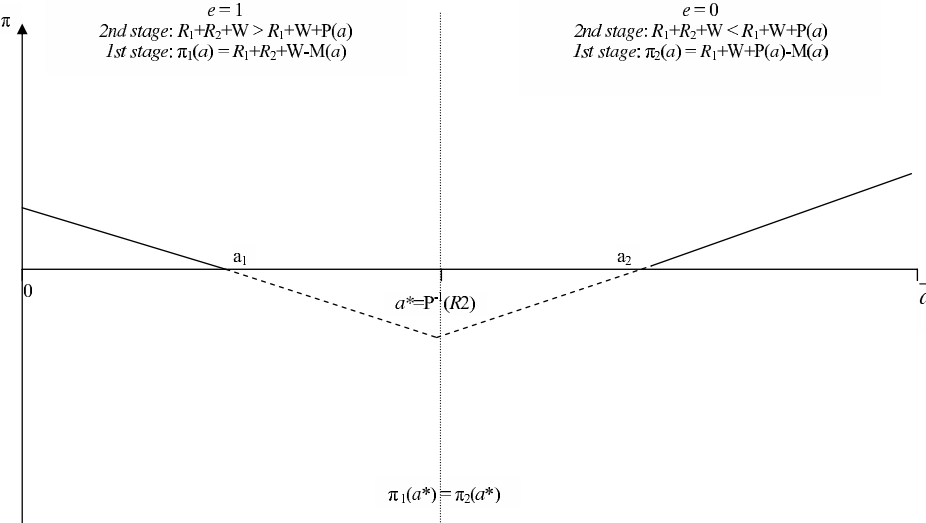
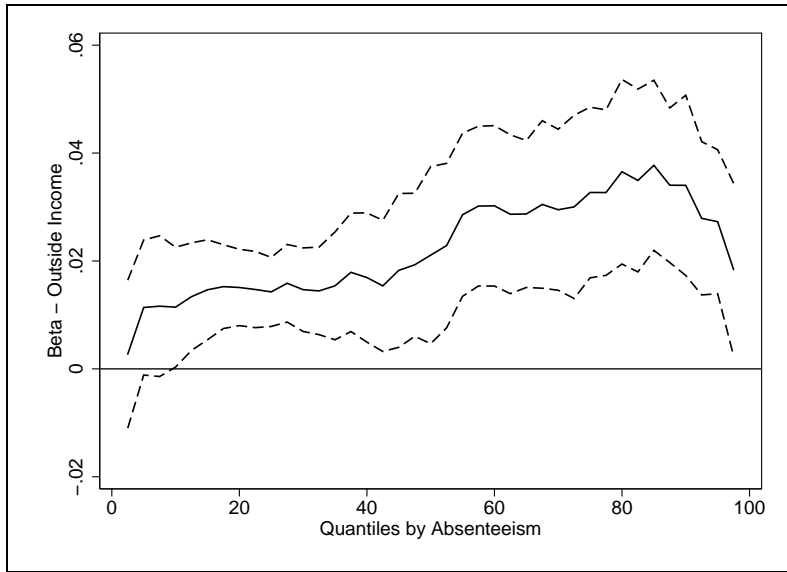


Figure 5: Quantile Regression – Absenteeism on Outside Income



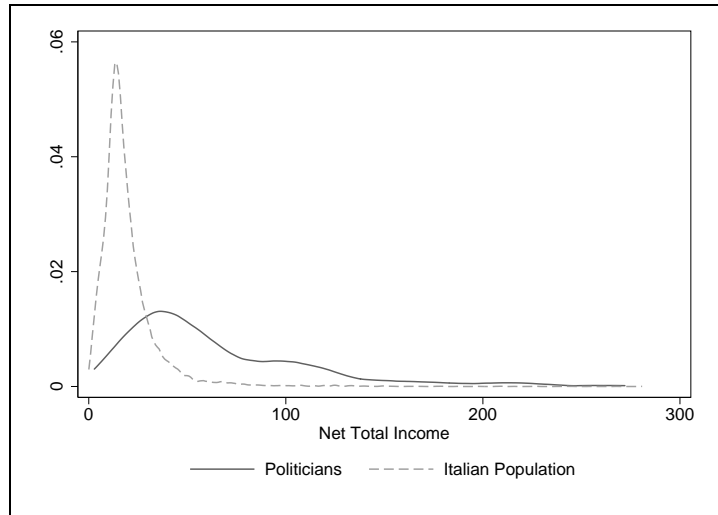
Note. Bootstrapped standard errors (200 replications). 95% confidence interval in dashed line. Outliers with more than two millions euros of income excluded.

Figure 6: Quantile Regression – Absenteeism on Pre-Election Income



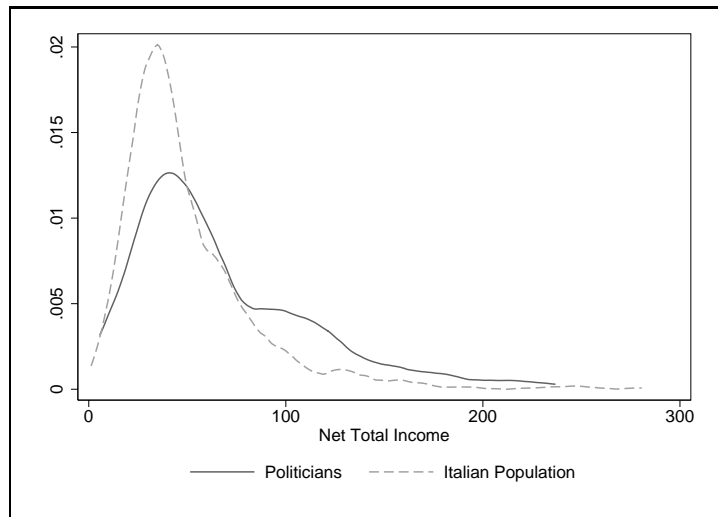
Note. Bootstrapped standard errors (200 replications). 95% confidence interval in dashed line. Outliers with more than two millions euros of income excluded.

Figure 7: Pre-Election Income Comparison with the Italian Population - Unadjusted



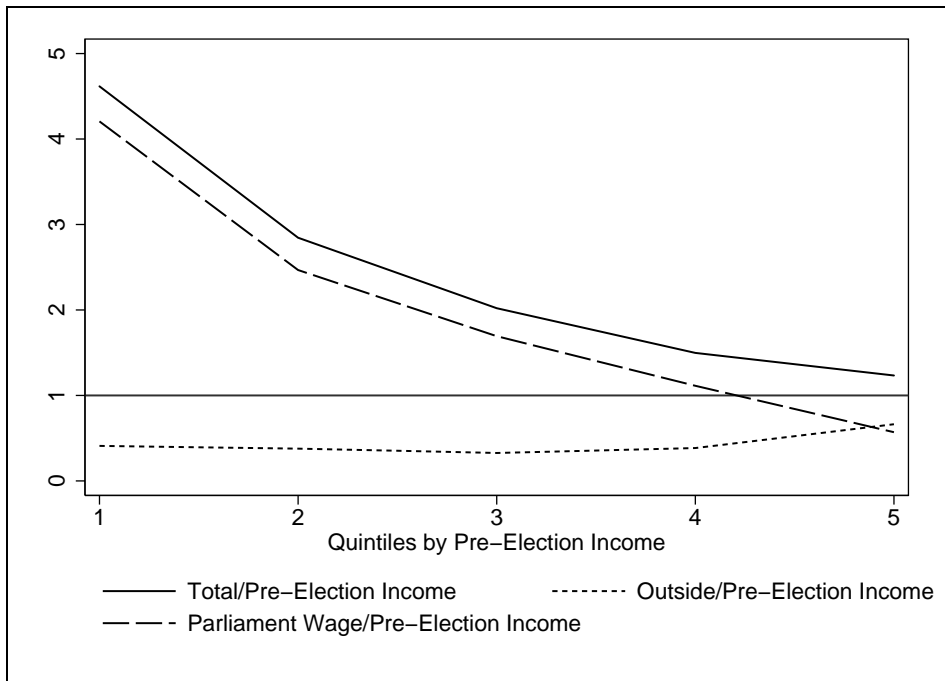
Net income in thousand of euros (2004 prices). Adjustments: only lawyers, managers, entrepreneurs, white collars and self-employed; age between 25 and 65. *Pesofl* weights for the SHIW Italian population sample, one for politicians. Freshmen representatives only.

Figure 8: Pre-Election Income Comparison with the Italian Population - Adjusted



Net income in thousand of euros (2004 prices). Adjustments: only lawyers, managers, entrepreneurs, and self-employed; age between 40 and 60; male only; at least B.A. degree. *Pesofl* weights for the SHIW Italian population sample, one for politicians. Freshmen representatives only.

Figure 9: The Pecuniary Gain from Election by Pre-Election Income Quintiles



Note. Freshmen representatives only.