Empirical Evidence on Satisfaction with Privatization in Latin America: Welfare Effects and Beliefs

Céline BONNET, Pierre DUBOIS, David MARTIMORT

AND Stéphane STRAUB

Toulouse
School
of Economics

Empirical Evidence on Satisfaction with Privatization in Latin America: Welfare Effects and Beliefs.

Céline Bonnet, Pierre Dubois, David Martimort, Stéphane Straub[*]

March 18, 2009

Abstract

Since the 1980s, privatization of formerly state-owned firms has been extensively implemented by governments across Latin America. Despite the fact that most evaluations of the process fail to find significant adverse welfare effects, there has been a strong surge in public discontent with such policy in the region. This paper performs a systematic empirical analysis of the determinants of such discontent with privatizations in Latin America, using survey data from Latinobarometro covering 18 countries over the period 1995-2005, complemented by country level data on macroeconomic, political, and institutional aspects as well as data on privatization. Dissatisfaction appears to respond to absolute and relative welfare effects, as well as to individual beliefs and expectations.

Keywords: Privatization, public opinion, beliefs

JEL Classification: L33, D83

1   Introduction

Since the 1980s, privatization of formerly state-owned firms has been extensively implemented by governments across Latin America, with most of the proceeds being generated in infrastructure sectors (water, transport, energy and telecommunications).[1] As a matter of fact, the World Bank's Private Participation in Infrastructure database shows that for the period 1990 to 2004, Latin America and the Caribbean has been the leading region in the world in terms of number of projects (1062 of a total of 2976) and investment figures (US$ 392 bn. of a total of US$ 871 bn.).[2] At the country level, five Latin American countries feature in the top ten ranking by number of projects (Brazil, Argentina, Mexico, Chile and Colombia), and three in terms of aggregate investment (Brazil, Argentina, Mexico). Within the region itself, there are also significant variations across countries, from the very active ones like Bolivia, Peru, Brazil, Argentina and El Salvador in which accumulated proceeds as of 1999 ranged between 8 and 20% of GDP, to laggards like Uruguay, Paraguay, Costa Rica and Ecuador, in which virtually no privatizations took place.[3]

Given the scale of the privatization wave, evaluating this process has become an important challenge both for practitioners and scholars. Actually, a number of researchers have already undertaken this difficult task focusing on several important aspects of the process, including its macroeconomic impact, firm- and sector-level efficiency, employment, specific social outcomes like health, income distribution, poverty and welfare.[4] To date, most studies found neutral to positive effects, with the possible exception of specific cases of price increase and layoffs in privatized firms. However, in recent years, opinion surveys from Latin America have revealed a profound and growing dissatisfaction with privatization, a situation that has already created a backlash against this policy, including popular protests, riots and governments in some countries making or being elected on pledges for a return to state-provided public services.[5] Understanding this contrast between the generally positive economic evaluations and the striking evolution of negative public opinions on the privatization process therefore constitutes quite of a challenge both for policy-makers and researchers.

The objective of this paper is to perform a systematic empirical analysis of the causes of public discontent with privatization in Latin America, using over 100,000 survey data observations from Latinobarometro covering 18 countries over the period 1995-2005, complemented by country level data on macroeconomic, political, and institutional aspects as well as data on the extent of privatization. The joint use of those two sources of data is made necessary because the causes

---

[1]See Bortolotti and Siniscalco (2004, Chapter 2).

[2]Note, however, that these investment figures must be taken with some caution, as they represent commitments rather than actual spending.

[3]Lora and Panizza (2002).

[4]See Martimort and Straub (2005 and 2008) for a more detailed discussion and references.

[5]The cases of Argentina and Bolivia are in order.

of public discontent is expected to be linked both to individual aspects (income, asset holdings, employment and social status, education, beliefs) but also to other "environmental" factors (size of the privatized sectors, phases in the economic cycle, institutional quality). We unveil the mechanisms behind the observed determinants found to be significant. More precisely, we ask whether the growing dissatisfaction simply results of a standard assessment of the effect of privatization on a combination of individual and group level welfare, or whether it rather comes from an important shift in beliefs regarding the appropriateness of this policy.

As for the first aspect, we consider each individual's assessment of the privatization benefits to be based on an estimation of the variation in some welfare indicator, formed by the weighted sum of the perceived welfare of a number of groups in the country of the respondent, induced by privatization over a certain time period. In such a general framework, variations in the weights attributed to each group can yield individual answers that rely on anything from purely selfish motives to completely altruistic ones, as well as capture considerations that have already been discussed in the literature, like, among others, fairness concerns, concerns for one's (or one's group) relative position in society, and experienced vs. revealed utility that is sensitive to the timing of economic effects.[6] We provide evidence on how the expressed level of dissatisfaction differs by level of income, education and along other socioeconomic divides, and to what extent it reflects relative income considerations.[7]

As far as beliefs are concerned, recent contributions have highlighted the crucial role of beliefs in the expression of opinions on policy or social issues, both at the theoretical and at the empirical level.[8] Using an interesting natural experiment in Argentina, Di Tella, Schargrodsky and Galiani (2007) show for instance that a simple change in land tenure status can induce important changes in individual pro-market beliefs even in the absence of any significant welfare change. It is therefore possible that such changes in beliefs are responsible for changes in satisfaction with specific reforms, above and beyond any welfare impact of such policies. It has been an open question to determine whether the rise in discontent with privatization in Latin America was due to a more general shift in beliefs against free-market policies or to some type of "reform fatigue" that would alter the support for what is perceived to be a liberal policy agenda.[9] We provide specific insights about the extent to which such changes in beliefs can be held responsible for this attitude.

In a nutshell, we find that dissatisfaction can be explained by a mix of individual character-istics that point to categories of individuals who have suffered or benefited less than others from privatizations, and of beliefs on several aspects. As for characteristics, the effect of education,

---

[6]See among others Senik (2004), Ravaillon and Lokshin (2001) and Kahneman and Thaler (1991).

[7]Note that, since the implicit weights used by individuals are unobserved, the use of subjective survey data raises issues relative to the interpretation of individual answers. See Clark et al. (2005), Ravaillon and Lokshin (2000) and Bertrand and Mullainathan (2001). These issues are discussed in the body of the paper.

[8]Piketty (1995), Di Tella and McCulloch (2004), Benabou and Tirole (2006).

[9]Panizza and Yañez (2006), Lora and Olivera (2005).

socioeconomic variables and assets variables signal a rather robust U-shaped effect in term of education and income levels, with individuals in the middle of such distributions being more critical with the outcome of privatizations. While the nature of our data does not allow us to systematically distinguish pure welfare effects from relative income concerns, that could for instance be linked to an unequal distribution of gains across social classes, we indicate in the discussion of the results why and when it is likely that both aspects are at play.[10]

A similar mix of absolute and relative income effects helps understand the outcome in terms of employment status, with public sector employees, unemployed and home workers categories corresponding to lower satisfaction levels, and private sector employees and students to higher approval rates. Indeed, a combination of direct welfare losses for some categories (public sector employees, unemployed) and informational effects (to the extent for example that privatization signals a shift toward more competitive job market practices) for others, seems relevant.

Moreover, beliefs also matter, and the respondents' assessments of privatization is strongly correlated with their views on the economic situation, their political preferences and the level of trust in society. Individuals forming more pessimistic evaluations of the economic situation are also less satisfied with privatizations, but so are those placing themselves more to the right of the political spectrum and having more pronounced preferences for democracy and a higher level of trust in others. Using pseudo panel fixed effects and instrumental variable estimations, we offer preliminary evidence that most of the individual beliefs effects go through differences in expectations with the outcome of economic policies, as well as with the overall transparency and fairness of the process.

A number of explanations have already been put forward in the policy literature to understand the current dissatisfaction trend with privatizations in Latin America.[11] We may classify these contributions into three categories:

• **Welfare considerations:** A first line of research has tried to assess the impact of privatizations on prices, quality of the services and employment, on the welfare of different groups and therefore on the evolution of satisfaction. Recent research (e.g. McKenzie and Mookherjee, 2003; Chong and Lopez-de-Silanes, 2005) seems to indicate that such effects were mostly positive, except in very few cases. These works raise the question of whether some negative effects of privatization were not picked by these studies. In this respect, some partial evidence can be found regarding deteriorating quality, or improvements in quality which are not enough to compensate for price increases, in particular when price cap regulation has been used.[12] Job losses and the deteriorating quality of working conditions (longer hours worked, lower job security and social benefits) are other important channels through which real welfare losses might

---

[10] See Hopkins and Kornienko (2004) for a theoretical approach to this issue, and Senik (2004) for empirical evidence using Russian data.

[11] Martimort and Straub (2008) provide a detailed discussion of the aspects mentioned below.

[12] McKenzie and Mookherjee (2003), Estache, Guasch and Trujillo (2003), Nellis, Menezes and Lucas (2004).

have materialized for some subsets of the population.[13]

• **Macroeconomic landscape:** The impact of the business cycle, including the possible disruptive effect of large macroeconomics shocks, devaluations, etc., has sometimes been deemed responsible for the waning support for pro-market reforms (e.g. by Lora Panizza and Yañez, 2006). However, the direct impact of privatizations on the business cycle remains unclear, with opinions ranging from those attributing the rise in economic instability to privatizations, to more positive ones considering that they contributed to limit the effect of external shocks. It is therefore difficult to assess whether the correlation between the fall in economic activity and dissatisfaction with privatizations is due to a direct negative welfare impact, to a gap between actual and expected performances, or to a change in beliefs somehow linked to the evolution of the overall economic situation. Answering this question would require making assumptions on the macroeconomic effects of privatizations and on the structure of errors in individual judgements that are bound to be speculative.

• **Political economy:** Finally, a last trend of the literature has tried to link the negative appraisal of privatization to distributional concerns. The basic idea is that, although privatization might come with efficiency gains, the effects of projects renegotiations and cancellation[14], corruption, and the lack of transparency of the process introduce distributional concerns among groups. Martimort and Straub (2008) offer a theory of how the degree of corruption that prevails in a society responds to changes in the ownership structure of public service providers. Privatization, even though it fosters investments in infrastructure, might also open the door to more corruption. The public dissatisfaction towards privatization is then crucially affected by changes in the degree and pattern of corruption, as the public perception and awareness are modified when corruption changes in nature. Indeed, corrupt activities mainly consist of siphoning public budgets under public ownership whereas they amount to raising regulated prices under private ownership. Martimort and Straub (2008) model thus helps understand the fact that popular dissatisfaction with the process is especially high among middle class consumers, who bear the bulk of the cost generated by corrupt deals after privatizations, and therefore perceive themselves as the big losers in the allocation of efficiency gains.

In an empirical paper using only three waves of the Latinobarometro surveys, Checchi et al. (2006) find that disagreement with privatization is most likely when the respondent is poor, privatization was massive and quick, involved a high proportion of public services as water and electricity, and in countries where there is high inequality of income. A robust non-linear relationship between socioeconomic status and dissatisfaction with privatization suggests, in particular that middle-to-low income households, with a median level of nine years of education, perceive to have suffered from privatization. This result is again broadly consistent with recent

---

[13]McKenzie and Mookherjee (2003), López-Calva and Rosellón (2002).
[14]See Guasch, Laffont and Straub (2008).

empirical research in Latin America that points to distributional concerns in the implementation of privatization policy because the consequences of the corresponding changes in tariffs were not adequately addressed by policy-makers and regulators.

However, it must be noticed that the findings in these papers may also be consistent with an alternative story in which an increase in the perception of corruption, or more generally of some unfair distribution of the gains from privatizations, may undermine trust in market reforms and induce a shift in beliefs, as conjectured for example by Di Tella and MacCulloch (2004), who argue that observing corruption causes people to become more left-wing.

The paper is organized as follows. Section 2 presents the data we are using. Section 3 introduces the basic econometric models, including estimations on individual data, aggregate data and pseudo panel fixed effects. Section 4 addresses specifically the issue of beliefs, and Section 5 concludes.

2   Data

Latinobarometro provides a series of yearly household surveys since 1995. Each year, a representative panel of individuals is asked a list of questions. Individuals are not re-interviewed every year and the data are more like a rotating representative panel. Data are available for the period 1995 to 2005, except 1999 when the survey was not carried out, with coverage rising to 18 Latin American countries after 1996. For each country, there are approximately between 600 and more than 1000 respondents. This means a total of over 100,000 observations, across 18 countries and 10 years.

The survey includes one question about the level of satisfaction with services that have been privatized. It was asked each year (with some variations) between 1998 and 2005, but does not differentiate by sectors. There is a question differentiating by sectors, but it was only asked in 1995 and 98. We use the only question that has sufficient intertemporal coverage (1998 to 2005, except 2004). It asks respondents to indicate whether they strongly agree / agree / disagree / strongly disagree with the statement that privatizations have been beneficial to the country.

Additionally, the survey contains a full set of individual characteristics: demographics, assets, access to public services. It also contains answers to a host of subjective questions capturing individual opinions on several aspects like democracy, institutions, laws, politics, citizen participation, public policies, poverty, other socioeconomic subjects, international relations and general values. However, because there have been frequent changes in the layout of the survey, many of these questions are not available across a sufficient number of time periods and cannot be exploited empirically.

The Latinobarometro data from successive years were stacked together and then merged with country level data from a variety of sources. This includes data from the World Bank PPI database on the amount of privatization proceeds by country and sectors from 1988 to

2003, aggregate governance Indicators for 1996-2004 from the Political Risk Service's International Country Risk Guide (1984-2004), democracy and autocracy indicators from the Polity 4 database, and generic country level data from the World Bank World Development Indicators. Details about the sources and descriptive statistics are in the Appendix.

3 Econometric Models and Empirical Results

Figure 1 represents the evolution of the percentage of respondents in each country that (strongly) agree with the fact that privatizations have been beneficial to the country.
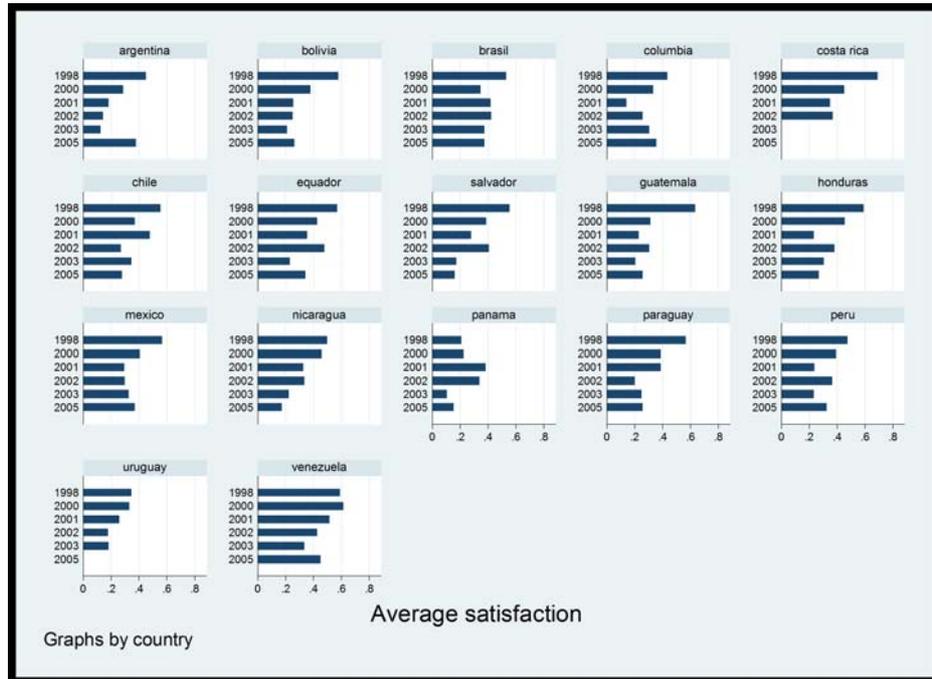
Figure 1

The graph confirms the sharp decrease of the average satisfaction with privatization from 1998 to 2005 with a peak of dissatisfaction around the years 2002-2003.

In what follows, we use different methods to test the determinants of satisfaction or dissatisfaction with privatization, given the household survey data available and the aggregate country-year information, starting with simple individual data.

3.1 Methodology and Results Using the Individual Data

Denoting by y_{ict} the opinion about privatization of individual i in country c at year t, and X_{ict} the vector of his characteristics, γ_{ct} a country-year fixed effect representing the fixed component across individuals that affects the opinion about privatization in country c at year t (as for example the average influence of a media campaign), and ε_{ict} an unobserved individual deviation

of individual opinion on privatization, we assume that the individual opinion is determined by the following equation:

$$y_{ict} = X'_{ict}\beta_{ct} + \gamma_{ct} + \varepsilon_{ict}. \tag{1}$$

Without loss of generality, we can also assume that γ_{ct} is determined by observed country-year characteristics S_{ct} and unobserved ones η_{ct} such that

$$\gamma_{ct} = S'_{ct}\delta + \eta_{ct}.$$

Then we can also re-write

$$y_{ict} = X'_{ict}\beta_{ct} + S'_{ct}\delta + \eta_{ct} + \varepsilon_{ict}. \tag{2}$$

The individual survey opinion about privatization allows us to estimate the model at the individual level and thus identify the parameters β_{ct} and γ_{ct} from the first specification or β_{ct}, and δ from the second one after assuming that $E(\eta_{ct}|X_{ict}, S_{ct}) = 0$, in addition to the first necessary assumption $E(\varepsilon_{ict}|X_{ict}, S_{ct}) = 0$. If this assumption cannot be made, then one can estimate the first specification and then, after estimating the country-year fixed effects γ_{ct}, regress these effects on characteristics S_{ct} of the country and period with only $E(\eta_{ct}|S_{ct}) = 0$. In what follows, we present the results from both approaches.

Table 1 presents the estimation of model (2) on individual data when the dependent variable is equal to 1 if the individual agrees (strongly) with the fact that privatizations have been beneficial to the country and 0 if he/she disagrees (strongly). Assuming that the error term is normally distributed, one can estimate such discrete choice model by maximum likelihood using the usual probit model. The list of individual characteristics X_{ict}, includes demographics (sex, age, marital status, education and occupation), wealth characteristics captured by asset ownership (TV, fridge, computer, washing-machine, car, secondary house, tenancy status), and access to basic services (drinking water, hot water, sewage).[15] Finally, the country level characteristics S_{ct} are related to the macroeconomic environment[16] (income per capita, lagged GDP growth), governance (corruption, quality of the bureaucracy), the political environment (a democracy index) and the level of privatization proceeds. Finally, we also introduce individual opinion variables on several aspects, including how people place themselves on a left-right political spectrum, trust in law, in other members of society, and assessments of the present and future economic situation, both at the personal and collective levels. Standard errors are clustered at the country level.

(Table 1 here)

To summarize, Table 1 shows that women are less satisfied by privatizations as well as older people, people living in couple, public sector employees, unemployed and students (although

---

[15] Telephone access could also be added to the list, but this variable is not available for 2005. Estimations not shown here show that it is not significant when included.

[16] Lagged values are relevant since the surveys are typically carried out around the middle of the year.

this last variable is not systematically significant). Moreover, there is a U-shaped relationship between the degree of satisfaction and the level of education, meaning that the less satisfied with privatizations are those with medium education.[17] Actually, the effect of the education level and its square imply that it is decreasing up to the education level 3 to 3.5, which is just below the average of the distribution in the sample and corresponds to complete basic education or slightly above.

Table 1 also shows that being richer, in the sense of holding certain assets (computer, washing-machine, secondary house), corresponds to a higher level of satisfaction with privatizations. These categories make up 17, 48, and 12% of the sample respectively, and can be interpreted as representative of the top end in terms of income. A similar result holds for people having access to hot water (43% of the sample). On the other hand, individuals who report not having access to drinking water appear to be more satisfied on average than the rest of the population. This is a relatively small subset (10%), likely to capture the very bottom of the income distribution, i.e., individuals who might have gained, or expect to gain access to public services through privatizations.

When opinion variables are introduced in column 5, they also appear to be correlated with satisfaction about privatizations. For example, the more they are to the left in terms of political preferences, and the less they trust other people in society, the less individuals are satisfied with privatizations, while a higher level of trust in the judicial system corresponds to higher satisfaction. Moreover, the more people perceive that the situation of the country has deteriorated, and the more pessimistic they are about the future of the country, the less satisfied they are as well. Note however that, although most of these results make intuitive sense, the inclusion of such opinion variables on the right-hand side of the estimations is the source of specific econometric problems that make the interpretation of the results difficult. We specifically address this issue in Section 4 below.

(Table 2 here)

Finally, one can look at the effect of country level variables on satisfaction.[18] First of all, the level of income per capita is consistently negative, although not significant. Looking at the effect of the economic cycle, higher growth in the year before the interview has a significant and positive effect on satisfaction with privatizations, with each additional point implying between 2.6 and 3.3% higher satisfaction. The effect of the amount of accumulated proceeds from privatizations

---

[17]A similar pattern emerges when using the socioeconomic level of the respondent, ranging from 1 to 5, as evaluated by the person carrying out the survey. This indicates that the less satisfied with privatizations are the "middle class" people, with a reversal point around 3.5 (the average of this level in the sample is 2.8 and the median is 3). We do not include this variable systematically in our estimations, however, because it is missing for 2002.

[18]Note that for some country-level variables 2005 values were missing, so their inclusion reduces the estimation range to 1998-2003.

is positive but statistically insignificant, so if anything it seems to be the case that individuals in countries that have privatized more are more satisfied. The index of democracy also fails to be significant.[19]

Concerning corruption, the results show that the more corruption there is in the country the lower is the overall satisfaction with privatizations (variable statistically significant at the 10% level in column 3), while the quality of the bureaucracy, when introduced as well, comes up with the reversed sign, meaning that a better bureaucracy generates more dissatisfaction.

These estimations all include country fixed effects. When year fixed effects are introduced as well, results in the Appendix Table A4 show that the only changes with respect to Table 1 are that per capita income now becomes positive and marginally significant in columns 3 and 5, while lagged growth becomes negative and loses significance, and corruption becomes negative. Hence, the time trend, which shows that satisfaction decreased significantly over the period with a lower point in 2003, seems to pick up the negative evolution of the economy, as well as the perception of misgovernance in the privatization process, previously captured by the growth and corruption variables.[20]

One important concern might be that answers to the privatization question in fact capture some general discontent with economic policies or the state of the economy for example. To discard this possibility, we run similar estimations with alternative answers to opinion questions as the dependent variable. Results available from the authors show that other opinion variables do not exhibit the same correlations than the level of satisfaction with privatization. For example, using the opinion about the country economic situation as the dependent variable in (1), we do not find the same effects of asset ownership or education variables.

As mentioned above, in these specifications, the validity of the results from country-level variables rests on the assumption that unobserved country-year characteristics are not systematically correlated with observed individual and aggregate aspects. Alternatively, one can estimate model (1) and then regress the resulting country-year effects on country-level variables.

Figure 2 presents the distribution of the γ_{ct} across countries and years. These are estimated from the model in column (1) of Table 1, where no country-level variables are introduced. They represent the country-year effects on satisfaction that cannot be explained by individual characteristics of respondents in Latinobarometro. There are variations across years within a given country but also between countries. Indeed, for most countries, Figure 2 confirms the fact

---

[19]The GINI coefficient has been removed because it is missing for many years and anyway never significant in any of these regressions.

[20]Assuming again normally distributed error terms, one can estimate model (2) using an ordered probit estimation when the dependent variable is the ordered response about whether privatizations have been beneficial, from disagree strongly (1) to agree strongly (4). The results, available from the authors, confirm most of the findings of the probit model. It is interesting to get the same results with either one model or the other because it shows the robustness of the findings. In principle, the ordered probit model is more efficient than the probit model, which uses less information about the respondents opinion on privatization, but the probit model is also more robust to misclassification of respondents between *agree* and *very agree* or *disagree* and *very disagree*.

that average satisfaction has decreased between 1998 and 2005 and also show that discontent
was the highest around 2003 and started to decrease in 2005.
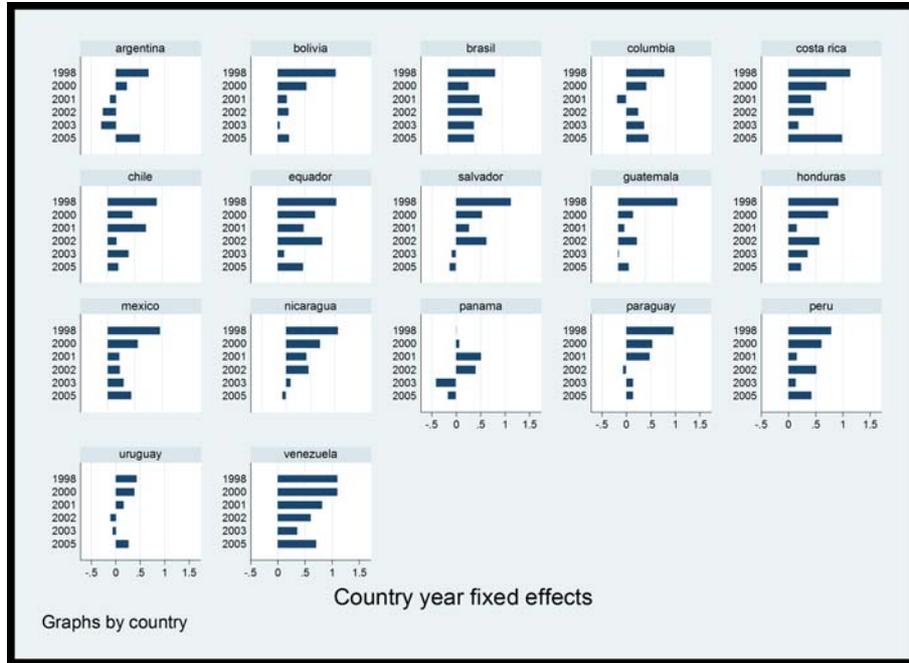
Fig 2: Unexplained country-year effects (probit model)

Table 2 shows the regression of these country-year fixed effects on country level variables. The
country-year effects on satisfaction that cannot be explained by the individual characteristics
of the respondents are positively correlated with lagged growth, and negatively with proceeds
from privatization. The statistically significant results for lagged GDP growth indicate that the
economic cycle seems to be key in explaining residual country-year effects, while satisfaction
seems higher in countries that privatized less. Other variables fail to be significant.

(Table 2 here)

3.2 Methodology and Results Using Aggregate Data

The individual level equation however may suffer from measurement error problems in the de-
pendent variable y_{ict} of equation (2). Actually, adding measurement errors μ_{ict} to the measured
y_{ict} gives the observed opinion $\widehat{y}_{ict}$

$$
\begin{aligned}
\widehat{y}_{ict} &= y_{ict} + \mu_{ict} \\
&= X'_{ict}\beta_{ct} + S'_{ct}\delta + \eta_{ct} + \mu_{ict} + \varepsilon_{ict}.
\end{aligned}
$$

If those measurement errors are correlated with individual characteristics X_{ict}, then the coefficients are biased. However, averaging the observed data will then lead to cancel out the measurement errors, whose average on a large sample of individuals will be approximately zero.

Assuming that

$$\frac{1}{\#\{i \in c,t\}} \sum_{i \in c,t} \mu_{ict} = 0$$

implies therefore that it may be possible to identify the model parameters on the aggregate data.

Thus, given the initial equation for the individual opinion, the aggregate value for the opinion defined by

$$\widetilde{y}_{ct} = \frac{1}{\#\{i \in c,t\}} \sum_{i \in c,t} y_{ict},$$

is such that

$$\widetilde{y}_{ct} = \widetilde{X}_{ct}\beta_{ct} + S'_{ct}\delta + \eta_{ct} + \widetilde{\varepsilon}_{ct}, \tag{3}$$

where

$$\widetilde{X}_{ct} = \frac{1}{\#\{i \in c,t\}} \sum_{i \in c,t} X_{ict}, \quad \text{and,} \quad \widetilde{\varepsilon}_{ct} = \frac{1}{\#\{i \in c,t\}} \sum_{i \in c,t} \varepsilon_{ict}.$$

Without restrictions on the unobserved η_{ct}, one cannot identify the coefficients β_{ct} and δ. However, assuming that the unobserved country-year specific effects η_{ct} are zero or are constant along periods, that is $\eta_{ct} = \eta_c$, one can use the longitudinal dimension of aggregate data and identify β_{ct} and δ provided that $E\left(\widetilde{\varepsilon}_{ct} | \eta_c, \widetilde{X}_{ct}, S_{ct}\right) = 0$.

Remark that $\widetilde{y}_{ct}$ then corresponds to a country-year average of the individual respondents opinions. When considering the discrete answer between "agree" and "disagree" on whether privatizations have been beneficial, the aggregate variable will then correspond to a percentage of individuals who agree. Therefore, Table 3 presents the results of the estimation of (3) when $\eta_{ct} = \eta_c$.

Table 3 shows that when aggregating the data, most "individual" effects are unchanged, although some are no longer significant or now have unstable signs, as for example in the case of asset categories. This is not very surprising given that aggregation leads to substantial loss of information along these dimensions.

Looking at variables that display a stable sign across the four specifications, statistically significant effects are found for education and education squared as before, the share of private employees and students (which both appear to boost satisfaction), TV, washing machine and car ownership (whose means across countries are 87, 48 and 69% respectively), with people not owning one being more satisfied, and the share of people not having access to hot water, which is negatively correlated with satisfaction. An increase of 1% of this share reduces satisfaction by between 0.23 and 0.43%. Based on this marginal effect, the 40% difference in access to hot water between a country with poor infrastructure such as Bolivia and a more developed one such as Chile would account for a difference in satisfaction with privatizations of between 10

and 17%. These variables seem therefore to capture the very bottom of the income distribution for the former ones and the upper part of this distribution for the latter.

(Table 3 here)

Considering now country-level variables, we get positive correlations with the level of per capita income and corruption, and negatives ones with lagged GDP growth and the proceeds from privatizations. However, apart from per capita income in column 3 and 4, none of these variables are statistically significant. Finally, the only significant opinion variable is "preference for democracy", which is positively correlated with satisfaction.

3.3 Pseudo-Panel Method and Results

The disadvantage of the previous models is that they do not take into account unobserved individual preferences. A specific instance of that problem is the so-called *"anchoring effect"*, which implies that individuals may be using different satisfaction scales and provide different answers to characterize the same level of satisfaction.[21] The lack of follow-up data on individuals prevents for example the implementation of panel data models where one could take into account unobserved individual fixed effects. However, one can construct a "pseudo panel" using the observed characteristics of respondents to try to overcome such issues and test the robustness of previous results (see for example, Attanasio and Weber, 1995, for the use of such method also called "synthetic" panel).

Let us define an "average" individual representative of a set of characteristics Z such that we can define K types based on these observed Z : $i \in k$ if $h(Z_i) = k$ where h is a function mapping individual with characteristics Z into a type space.

If the true model is

$$y_{ict} = X'_{ict}\beta_{ct} + \theta_i + \gamma_{ct} + \varepsilon_{ict},$$

where θ_i is an unobserved individual fixed effect, then this model cannot be identified because each household is observed only once.

However, if we assume that $\theta_i = \theta_{h(Z_i)} = \widetilde{\theta}_k$ and define $y_{kct} = \frac{1}{\#\{i/h(Z_i)=k\}} \sum_{i/h(Z_i)=k} y_{ict}$,

---

[21]See Bertrand and Mullainathan (2001) and Senik (2004).

then

$$
\begin{aligned}
y_{kct} &= \frac{1}{\#\{i/h(Z_i)=k\}} \sum_{i/h(Z_i)=k} y_{ict}, \\
&= \frac{1}{\#\{i/h(Z_i)=k\}} \sum_{i/h(Z_i)=k} X'_{ict}\beta_{ct} + \frac{1}{\#\{i/h(Z_i)=k\}} \sum_{i/h(Z_i)=k} \theta_i + \gamma_{ct} \\
&\quad + \frac{1}{\#\{i/h(Z_i)=k\}} \sum_{i/h(Z_i)=k} \varepsilon_{ict} \\
&= X'_{kct}\beta_{ct} + \widetilde{\theta}_k + \gamma_{ct} + \frac{1}{\#\{i/h(Z_i)=k\}} \sum_{i/h(Z_i)=k} \varepsilon_{ict} \text{ if } X \subset Z, \\
&= X'_{kct}\beta_{ct} + \widetilde{\theta}_k + \gamma_{ct} + \xi_{kct},
\end{aligned}
$$

where $\xi_{kct} = \frac{1}{\#\{i/h(Z_i)=k\}} \sum_{i/h(Z_i)=k} \varepsilon_{ict}$.

Then, one can identify β_{ct} using the regression

$$
y_{kct} = X'_{kct}\beta_{ct} + \widetilde{\theta}_k + \gamma_{ct} + \xi_{kct}, \tag{4}
$$

where y_{kct} is the average response of type k individuals and $\widetilde{\theta}_k$ is the unobserved type k fixed effect.

Table 4 presents the results of such estimation where the variables Z used to create the pseudo panel are the country, the age category and sex. It yields 238 pseudo individuals, for a total of 1176 observations across the 6 rounds of survey and 17 countries. Once the pseudo panel has been created, one can use fixed effects linear regression to estimate (4). Year dummies are also included.

Table 4 confirms some of the previous insights. As for the effect of education, we note that the U-shaped relationship between satisfaction and the education level is preserved, meaning that the less satisfied with privatizations are the people with medium education. Public employees and unemployed are still more likely to be dissatisfied with privatizations. As for assets ownership, we again observe that being rich in the sense of owning a car or a secondary house implies more satisfaction, although the statistical significance of these variables is not very robust across specifications. In terms of access to services, the results on people not having access to drinking water and those having access to hot water being both more satisfied are also maintained. As for country-level variables, income per capita and corruption yield rather unstable results, as in the estimations including time fixed effects discussed previously.

(Table 4 here)

There are however also some noteworthy differences linked to the introduction of fixed effects. First, being a home worker now appear to induce significantly more dissatisfaction, while being a private sector employee or a student is now positively and significantly correlated to the

14

level of satisfaction. This change in the effect of employment status is interesting, because it indicates that some of the effects picked up earlier, in particular the greater dissatisfaction among unemployed individuals and students, were likely to be due to unobserved individual preferences.

As for asset ownership, some categories partially lose significance (computer, car, secondary house), while washing machine now turns negative and significant. Again, it appears that unobserved effects were biasing the previous results on these variables.

Finally, results on some opinion variables are also modified, with people to the right being now more dissatisfied, as well as people with weaker preferences for democracy and people with lower levels of trust in others.

3.4 Summary and Discussion

To summarize the insights so far, we get the following picture with respect to traits and environmental features that fuel dissatisfaction with privatizations. The analysis of individual data indicates that women, older individuals and people living in couple are more dissatisfied. As for employment status, dissatisfaction is more important among public employees, unemployed and students. The first category is likely to capture the discontent from public employees who are under the threat of being laid off or of seeing their job characteristics modified as the result of the privatization process.[22] Indeed, a number of studies show that there were substantial job losses in privatized firms and, despite the fact that these cuts were generally small when compared to the total workforce and tended to be partially reversed in the medium run, they also mention serious workers' concerns about the quality of their new jobs, including the obligation to work longer hours and a degradation of health and social security benefits.[23] This is compounded by the well known fact that in many Latin American countries, public firms have been used for patronage purpose by successive governments, with the result that many public employees had relatively non-demanding jobs with benefits that largely exceeded what was available to the population at large.

The dissatisfaction expressed by unemployed individuals could be related both to these job losses, in case they were among the victims, and to worries about the conditions of possible future employment. Finally, students may also be expressing preoccupations with the evolution of the labor market. In general, it seems likely that the change in jobs characteristics induced by the privatization of some big firms is taken by these categories of individuals, that are or will soon be looking for a job, as a signal that the labor market and the reward structure has become more competitive. In other words, the evaluation of privatization in this case seems to be affected by people's beliefs about what to expect from the economic situation rather than by

---

[22] Unfortunately, the surveys do not provide information on this aspect.

[23] McKenzie and Mookherjee (2003); López-Calva and Rosellón (2002); La Porta and López-de-Silanes (1999). See also the discussion in Martimort and Straub (2008).

actual welfare changes directly induced by the policy. We return to this issue below.

Discontent is more pronounced among people with an intermediate level of education or with intermediate socioeconomic levels, who can be interpreted as being middle class individuals. One potential explanation is the one proposed by Martimort and Straub (2008), who argue that the middle class perceives itself as being the main loser in the distribution of efficiency gains, partly because of instances of corruption that have pushed up the price for public services.

In terms of assets, it appears that ownership of what can be considered as "luxury" assets in a developing country context (computer, secondary house, and to a lesser extent car and washing machine) corresponds to higher satisfaction with privatization. So is access to hot water. At the other extreme, not having access to drinking water, a proxy for being in the poorer part of the population, is also associated with greater satisfaction. Both facts can again be related to the inverse U-shaped effect in terms of education and wealth, with higher level of dissatisfaction in the middle of the distribution. The top part of the distribution, corresponds to people that may actually have benefited from the change in the pattern of corruption mentioned above, which went from affecting rich taxpayers, through the soft budget constraint of the State, to falling mostly on service consumers through regulated prices. Moreover, they may also have benefited from the elimination of cross-subsidies that followed the privatization of key services like telecommunications and water. At the other end, very poor people, located in rural communities or less developed urban areas previously unconnected to the networks, are likely to have gained access to electricity, telecommunication or water after the change in ownership.[24] This may explain their more positive evaluation of the benefits of privatizations.

At the aggregate level, dissatisfaction appears to strive in the context of poorer countries experiencing a difficult macroeconomic situation. As a matter of fact, the strong negative time trend between 1998 and 2005 (despite a slight reversal in 2005), seems to capture mainly the effect of low economic growth. As for governance, corruption seems to fuel dissatisfaction, but the results are not very robust, and those on bureaucratic quality are sometimes contradictory.

The introduction of fixed effect in the pseudo panel, needed to control for potential unobserved effects, leads to refine some of these conclusions. First of all, the role of the employment status is slightly altered, the main modification being that the categories that are significantly less satisfied are now public employees, unemployed and home workers, while private sector employees and students categories now appear positively correlated with satisfaction. One possibility is that private sector employees' and students' unobserved effects that lead them to express dissatisfaction, for example the sensitivity to the labor market pro-competitive signaling effect of privatization mentioned above or the greater ideological opposition to liberal policies in general and privatization in particular, are now captured by the fixed effects.

---

[24]McKenzie and Mookherjee (2003), using data from Argentina, Bolivia, Mexico and Nicaragua, show that these categories often experienced substantial welfare gains.

The U-shaped effect of education remains significant, and access to services variables indicate that significant effects occur at the very ends of the distribution. On the other hand, most asset ownership effects are weakened by the introduction of fixed effects. Again, one can conjecture that ideological effects, likely to be stronger among middle class, urban groups, are now captured by fixed effects.

Finally, when introduced in these estimations, some opinions on a range of social and political aspects have intuitive effects. People expressing lower levels of trust in others and in the judicial institution, and those considering that the country situation is worsening are more dissatisfied. On the other hand, the role of left/right beliefs, preference for democracy and trust in others is affected by the introduction of fixed effects, so it is difficult to draw a conclusion at that stage. Indeed, as discussed in the Introduction, the use of such variables creates a number of challenges, that are addressed in the next section.

4 The Role of Beliefs

A first look at a range of questions included in the Latinobarometro survey shows that the evolution of opinions on the benefits of privatizations is closely paralleled by the evolution of some other beliefs. Table 5 shows the correlation between the yearly country-level average opinions on privatization and other opinion variables.[25]

Correlation Opinion variables with opinion on Privatization	
Current country situation	-0.3686*
Better country situation than before	-0.2044*
Future country situation	-0.0935
Law confidence	-0.4226*
Trust	0.0180
Preference for Democracy	-0.0311
Left/right position	-0.0869

* Pairwise correlation significant at the 5% level

Table 5

Moreover, the evolution of these opinions in the period under study shows that at the time respondents in Latin America expressed growing negative perceptions of privatization, they also increasingly perceived the economic situation of their country to be bad, worse than 12 months ago, and they were also increasingly thinking this situation would worsen. Moreover, the strongest correlation is found when comparing opinions on privatization with the level of trust in the judicial system: People having lower levels of trust in this institution also express more

---

[25] The first four lines in this graph show the correlation between the rate of approval of privatizations and the percentage of respondents that think that the country situation is bad/worse than 12 months ago/likely to worsen and that the judicial system is not trustworthy. Hence, the negative correlations mean that more pessimistic respondents on these aspects are less happy with privatizations.

dissatisfaction with privatization. Finally, there was also some correlation with how people place themselves on the political spectrum, more dissatisfaction with privatization being paralleled by a movement to the right.

As signaled in Section 3, note that when estimations similar to those discussed previously are run with these alternative opinions as dependent variables, a number of different results are found, meaning that these opinions, although correlated, have distinct informational contents.

Overall, there seem to be a strong co-movement of opinion variables. This is especially true for what we will call "superficial" opinions, i.e., those on short-term aspects, and a bit less so for "deep" beliefs like the overall level of trust in others, the preference for democracy or the situation on a left to right political spectrum. Finally, trust in the judicial system, which displays the highest correlation with opinions on privatizations is to some extent a mix of deep beliefs and more superficial opinions: although we would expect the level of trust in such institution to be to some extent beyond considerations which are purely cyclical, it is also conceivable that it may be subject to strong short-term fluctuations following for example some widely publicized scandal in a given country. It is therefore important to address econometrically the challenges posed by the inclusion of these variables, in order to provide the right interpretation of their effects.

4.1 Econometric Strategy

The main problem is that the inclusion on the right-hand side of the estimations of additional opinion variables might induce an endogeneity bias to the extent that both these variables and the opinion on privatizations are correlated with some individual or group unobserved effects. Unobserved effects would only be controlled for by the country dummies, as well as the fixed effects in the pseudo panel setting, if they are time invariant. Year fixed effects may take care of some time varying unobserved effects, but only if these are common across countries and individuals. Any residual time varying individual unobserved effects would still induce a correlation between opinion variables and the error term. Moreover, this endogeneity bias might also affect the coefficients and standard errors of the other right-hand side variables included in the estimations, such as the demographics, if, as is very likely, these variables are correlated with the opinion variables through the unobserved individual or group effects.

An illustration of this is given by the strong correlation between opinions on privatizations and short-term evaluations of the economic and social situation. At face value, it may indicate that the state of the economy has a strong impact on the evaluation of privatizations' benefits, as argued in Panizza and Yañez (2006), and indeed we saw in the previous section that when introduced in the estimations, opinions on the evolution of the economy were strongly significant. However, to the extent that we control for general macroeconomic indicators, we should expect these variables to stop being significant, which is not the case in most specifications.

18

Alternatively, it may be the case that people form over-pessimistic beliefs about the state of the economy, explaining the residual effect observed over and above the macroeconomic controls. The question is then to determine whether all or part of the strongly significant effects that we get are due to an unobserved effect bias, and to what extent this bias also affects the results of other explanatory variables.

We start with the pseudo-panel defined above. This allows us to control for potential time invariant unobserved effects. Additionally, at the end of this section, we experiment with an alternative definition of the categories use to construct the pseudo panel, including some "deep beliefs" aspects.

The problem of time-varying unobserved effects, and relatedly of possible measurement errors in the opinion variables, requires the use of instruments. In the context of our data, it is difficult to come up with some exogenous variables that would be correlated with specific beliefs but not with the expressed satisfaction with privatizations. A plausible way to proceed is to use lagged values of the beliefs themselves as instrumental variables, as we expect them to be correlated with present opinions on privatizations only through their effect on actual beliefs. Additionally, we use past values (1998) of a set of fundamental beliefs that we believe are likely to consistently indicate the propensity to be more or less critical on issues like privatizations.[26] The first one is peoples' opinion on whether success depends on connections and on hard work respectively.[27] Moreover, recent work by Di Tella and MacCulloch (2004 and 2005) shows that people's perceptions on aspects of their environment like crime, insecurity and corruption are also correlated with their beliefs on economic issues like the appropriateness of pro market policies. Therefore, we also use 1998 responses on a question asking whether people perceive that drug use and trafficking has increased or not in the last five years.[28]

There is also some recent evidence on the possibility of exogenous shifts in beliefs arising as the result of unexpected changes in the environment. Di Tella, Galiani and Schargrodsky (2007) show that the sudden allocation of property rights to squatters in the Buenos Aires suburbs induced a dramatic change of beliefs in the value of work vs. connections in determining individual success. While it is hard to identify exogenous events of this sort in relation with our data, one implication is that the time dimension might matter, so we interact the beginning of the period values of our instrumental beliefs with a complete set of time dummies. This allows us to account for time-varying effects of these beliefs, through some key events of the environment, on our endogenous variables.

To sum up, our empirical strategy is to estimate a fixed effect linear panel regression of the

---

[26] The political science literature offers examples of the use of past opinions or opinions in auxiliary data sets to address the issue of values and opinions' endogeneity. See for example Franklin (1989) and Zaller (1991).

[27] This question has been used in recent work as a proxy for the ideological orientation of different societies, as discussed in Benabou and Tirole (2006) and Alesina et al. (2002) for example.

[28] A number of other related questions (perceptions on crime, corruption, level of interest in politics, etc.) have been tested as instruments without significant improvements.

form:

$$y_{kct} = X'_{kct}\beta_{ct} + B'_{kct}\delta_{ct} + \widetilde{\theta}_k + \gamma_{ct} + \eta_{kct}, \tag{5}$$

where y_{kct} is the average response of type k individuals and $\widetilde{\theta}_k$ is the unobserved type k fixed effect, using the pseudo panel setting developed above, and B_{kct} is the set of opinion variables that we want to include. We estimate (5) using B_{kct-1} and $F_{kc}^{98} \times y_t$ as instruments, where F_{kc}^{98} is a vector of beginning of the period "fundamental" beliefs and y_t are year dummies.

4.2 Results

Table 6, columns 1 and 2, presents the results from such an estimation. When instrumented, the opinion variables that remain significant are the evaluation of the present economic situation, the evaluation of the future economic situation, the left-right index and the level of trust in others. Marginal effects are quite important. For example, taking the opinions on the economic situation in column 1, we can infer that a one point move up on the three level scale used to assess the present economic situation (1=better, 2=equal, 3=worse), for example from equal to worse, implies a 0.79 reduction on the scale used to assess the benefits from privatizations (from very disagree that they have been beneficial=1 to very agree=4). Conversely, a one point move up on the scale used to express expectations of the future economic situation (1=better, 2=equal, 3=worse) implies a 1.41 increase on the scale used to assess the benefits from privatizations. Finally, a one point up on the left/right scale corresponds to a 0.09 point reduction on the privatization benefit scale. The Sargan test of overidentification supports the validity of instruments.

Most of these results are intuitive, except the left/right one. Indeed, standard ideological arguments would lead to think that people that locate themselves on the left of the political spectrum would be more defiant of privatization, to the extent that it is identified with right-wing pro market policies. One possibility is that our dependent variable in fact captures a quality assessment of past privatizations, rather than an absolute judgement on the suitability of privatizations. To that extent, holding right wing beliefs may be associated with higher expectations with respect to the effect of privatizations, so people on the right may be expressing more dissatisfaction because they are disappointed with the way privatizations have been implemented or with their outcome.

(Table 6 here)

The first conclusion is therefore that a number of beliefs matter in determining the support for privatizations. Specifically, it appears that above and beyond their personal characteristics, their occupation, their socioeconomic condition and the general country level situation, respondents' opinions are affected by a mix of their evaluation of the current and future economic situation, their level of trust in others, and their position on the political spectrum. Moreover, these

20

effects are non trivial. They seem to involve first some informational aspects, to the extent that for example a pessimistic evaluation of the economic cycle or lower trust in others induces more dissatisfaction with privatization perhaps because people infer from the bad economic results or the perceived misbehavior of others that previous policy choices were to some extent misguided. However, there is also a presumption that the level of satisfaction expressed relates to some extent to people's evaluation of the performance of privatizations as compared to their expectations of what these policies should have delivered, as argued on the interpretation of the left/right variable above.

In column 3, we perform similar instrumental estimations with an alternative definition of the pseudo panel representative individual, by introducing left/right as an additional variable in the defining set of characteristics Z. This can be thought of as an attempt to control for fixed unobserved characteristics linked to the ideological orientation of individuals, and in particular for the expectation dimension mentioned above to explain the counterintuitive result on the left/right variable. The pseudo panel now displays 2173 individuals, corresponding to 9598 observations.

Now, most beliefs become irrelevant. In particular, opinions on the present and future economic situation are no longer significant. This indicates that, when controlling for unobserved effects linked to the fact that different political beliefs create different level of expectations with the outcome of policies and the aggregate macroeconomic evolution, short-term beliefs of this sort have no effect. More precisely, the presumption is that a fraction of respondents shifted to the right and had unobserved characteristics, probably revolving about their expectations with economic policy, that made them both more likely to hold pessimistic opinions on the state of the economy and to be defiant toward the outcome of privatizations. Thus, the "overshooting" in beliefs observed here seems to be linked to different levels of expectation.

Overall, only the preference for democracy remain marginally significant in column 3. This is likely to capture the extent to which individuals expressing stronger preferences may also be expecting a more participatory and transparent policy making process. The fact that this variable is still significant indicates that this dimension of individual characteristics is at least partially orthogonal to political preferences and is thus imperfectly captured by the fixed effects as defined here.

5   Conclusion

We have performed a systematic empirical analysis of the determinants of public discontent with privatizations in Latin America, using survey data from Latinobarometro covering 18 countries over the period 1995-2005, complemented by country level data on macroeconomic, political, and institutional aspects as well as data on the extent of privatizations. The strong surge in dissatisfaction in the region since the end of the 1990s appears to respond first to a mix of

absolute and relative welfare effects. Specific categories that are likely to have suffered directly from privatizations, such as unemployed and public sector employees, do indeed express more dissatisfaction. As for relative effects, the fact that the extreme of the distribution in terms of income or education are less dissatisfied is consistent with the middle class expressing concerns about an unequal distribution of efficiency gains among the population, as put forward in previous contributions on the subject.

Moreover, individual beliefs and expectations also appear to matter, above and beyond the welfare effects mentioned above. We distinguish two channels through which beliefs affect the expression of satisfaction with economic policy. They do so first through what we call an information channel. Individuals forming pessimistic evaluations of the economic situation or of the quality of trust in their society, infer from there that policy choices may have been misguided or that they may reflect opportunistic behavior by policy makers. Second, opinions on privatizations reflect different expectations with the outcome of this policy or with the way it is conducted. This explains for example that individuals who place themselves more on the right of the political spectrum are more dissatisfied than those on the left, a result that we interpret as evidence that they have higher levels of expectations with this policy. The "overshooting" in beliefs that occurs seems to reflect differences in expectations within the population.

6 References

Alesina A., E. Glaeser and B. Sacerdote, 2002, "Why Doesn't the U.S. have a European Style Welfare State?" *Brookings Papers on Economic Activity*.

Attanasio O. and G. Weber, 1995, "Is consumption Growth Consistent with Intertemporal Optimization? Evidence from the Consumer Expenditure Survey", *Journal of Political Economy*, 103: 1121-1157.

Benabou R. and J. Tirole, 2006, "Belief in a Just World and Redistributive Politics", *The Quarterly Journal of Economics*, 121: 699-746.

Bertrand M. and S. Mullainathan, 2001, "Do People Mean What They Say? Implications for Subjective Survey Data", *American Economic Review*, 91: 67-72.

Bortolotti B. and D. Siniscalco, 2003, *The Challenges of Privatization: An International Analysis*, Oxford University Press.

Checchi D., M. Florio, J. Carrera, 2006, "Privatization Discontent and its Determinants: Evidence from Latin America", mimeo.

Chong A. and F. López-de-Silanes, 2004, "Privatization in Latin America: What Does the Evidence Say?" *Economía*, 4: 37-111. [Référence à vérifier - MP]

Clark A., F. Etilé, F. Postel-Vinay, C. Senik and K. Van der Straeten, 2005, "Heterogeneity in Reported Well-Being: Evidence from Twelve European Countries", *Economic Journal*, 115: 118-132.

Di Tella R. and R. MacCulloch, 2004, "Why Doesn't Capitalism Flow to Poor Countries?", mimeo.

Di Tella R. and R. MacCulloch, 2005, "Reform Fatigue: The Connection between Crime, Crisis and Pro-Market Beliefs", mimeo.

Di Tella R. , S. Galiani, and E. Schargrodsky, 2007, "The Formation of Beliefs: Evidence from the Allocation of Land Titles to Squatters" *Quarterly Journal of Economics*, 122: 209-241.

Estache, A., L. Guasch and L. Trujillo, 2003, "Price Caps, Efficiency Payoffs, and Infrastructure Contract Renegotiation in Latin America", World Bank Policy Research Working Paper 3129, Washington D.C.

Franklin C., 1989, "Estimation Across Data-Sets: Two-Stage Auxiliary Instrumental Variables Estimations", *Political Analysis*, 1: 1-24.

Graham C. and A. Felton, 2005, "Does Inequality Matter to Individual Welfare? An Initial Exploration Based on Happiness Surveys from Latin America", mimeo, IADB.

Guasch J.L., J.J. Laffont and S. Straub, 2008, "Renegotiation of Concession Contracts in Latin America", *International Journal of Industrial Organization*, 26(2), 421-442.

Hopkins E. and T. Kornienko, 2004, "Running to Keep in the Same Place: Consumer Choice as a Game of Status", *American Economic Review*, 94: 1085-1107.

Kahneman D. and R. Thaler, 1991, "Economic Analysis and the Psychology of Utility: Applications to Compensation Policy", *American Economic Review*, 81: 341-346.

La Porta R. and F. López-de-Silanes, 1999, "The Benefits of Privatization: Evidence from Mexico", *Quarterly Journal of Economics*, 114: 1193-1242.

López-Calva L. and J. Rosellón, 2002, "The Distributive Impact of Privatization: The Case of Mexico", IPD Working Paper 2003-3, Puebla, Mexico: Universidad de las Américas.

Lora E. and U. Panizza, 2002, "Structural Reforms in Latin America under Scrutiny" IADB Working Paper 470.

Lora E. and M. Olivera, 2005, "The Electoral Consequences of the Washington Consensus", IADB Working Paper 530.

Martimort D. and S. Straub, 2005, "Privatization and Corruption", mimeo, Inter-American Development Bank.

Martimort D. and S. Straub, 2008, "Infrastructure Privatization and Changes in Corruption Patterns: The Roots of Public Discontent", forthcoming, *Journal of Development Economics*.

McKenzie D. and D. Mookherjee, 2003, "Distributive Impact of Privatization in Latin America: An Overview of Evidence from Four Countries", *Economía*, 3: 161-218.

Nellis J., Menezes R. and S. Lucas, 2004, "Privatization in Latin America, the Rapid Rise, Recent Fall, and Continuing Puzzle of a Contentious Economic Policy", Center for Global Development Policy Brief, 3(1).

Panizza U. and M. Yañez, 2006, "Why Are Latin Americans so Unhappy about Reforms?", IADB Working Paper 567.

Piketty T., 1995, "Social Mobility and Redistributive Politics", *Quarterly Journal of Economics*, 110: 551-84.

Ravallion M. and M. Lokshin, 2001, "Identifying Welfare Effects from Subjective Questions", *Economica*, 68: 335-357.

Ravallion M. and M. Lokshin, 2000, "Who Wants to Redistribute? The Tunnel Effect in 1990s Russia", *Journal of Public Economics*, 76: 87-104.

Senik, C., 2004, "When Information Dominates Comparison. Learning from Russian Subjective Panel Data", *Journal of Public Economics*, 88: 2099-2123.

Zaller J., 1991, "Information, Values, and Opinion", *American Political Science Review*, 85: 1215-1237.

7 Appendix

7.1 Data construction

Sources of data:

- Latinobarometro surveys 1995-2005

- Political risk variables (Bureaucracy quality, Corruption) from the International Country Risk Guide, 1984-2004.

- World Bank Privatization Database, transactions by country, region or sector, by year 1988-2003 http://rru.worldbank.org/Privatization/
  This site provides information on more than 9,000 privatization transactions in developing countries from 1988 to 2003. Transactions by country, region or sector for a particular time period or for the entire period are covered in the database.

- World Development Indicators, World Bank, 1960-2004.

- Democracy index from the Polity IV project (codes the authority characteristics of states in the world system for purposes of comparative, quantitative analysis).The Democracy indicator is an additive eleven-point scale (0-10) taking into account the competitiveness of executive recruitment, the openness of executive recruitment, the constraints on chief executive, and the competitiveness of political participation.

7.2 Descriptive statistics

Individual variables	Mean	Median
Individual characteristics		
Sex (0=woman, 1=man)	0.49	0
Age (years)	38.75	36
Couple (1=living in couple, 0=single)	0.57	1
Education level (1-9)	3.82	4
TV (0=no, 1=yes)	0.88	1
Fridge (0=no, 1=yes)	0.81	1
Computer (0=no, 1=yes)	0.17	0
Wash (0=no, 1=yes)	0.48	0
Car (0=no, 1=yes)	0.69	1
Secondary house (0=no, 1=yes)	0.12	0
Home owner (0=no, 1=yes)	0.74	1
Drink water (0=no, 1=yes)	0.90	1
Hot water (0=no, 1=yes)	0.43	0
Sewage system (0=no, 1=yes)	0.75	1
Opinion variables		
Better situation (1=better,2=same,3=worse)	2.3	2
Future situation (1=better,2=same,3=worse)	2.08	2
Left Right (0-10 from left to right)	5.46	5
Law confidence (1=very high,2=high,3=low,4=very low)	2.91	3
Trust (0=no, 1=yes)	0.19	0
Democracy preference (-1=no,0=same,1=yes)	0.44	1

Table A2

Employment status	Percentage
Employment status=1 (self employed)	29.5 %
Employment status=2 (public sector employee)	8.9%
Employment status=3 (private sector wage laborer)	17.2 %
Employment status=4 (temporarily unemployed)	6.8 %
Employment status=5 (retired)	7.0 %
Employment status=6 (at home)	21.5 %
Employment status=7 (student)	9.1 %
Whether privatization has been beneficial	
agree strongly	8.64 %
agree	26.74 %
disagree	40.04 %
disagree strongly	24.58 %

Table A3

Country level variables	Mean	Median	Std. Dev.	Min	Max
Political risk variables					
Bureaucracy quality	1.87	2	0.673	0.16	3
Corruption	2.85	3	0.868	1	5
Other country level variables					
GNI per capita	5296.1	4885	2387.75	1640	12460
GDP growth (%)	3.31	3.56	3.69	-11.03	17.32
Proceeds from privatizations (per year in 1000 $ US)	675.87	145.5	1355.31	0	9457
Democracy index	7.505	8	1.82	2	10

Table A4. Probit estimations with individual data

Probit	(1)	(2)	(3)	(4)
Demographics				
Sex	-0.041	-0.049	-0.048	-0.027
	(0.013)***	(0.012)***	(0.012)***	(0.015)*
Age	-0.003	-0.003	-0.003	-0.002
	(0.001)***	(0.001)***	(0.001)***	(0.001)***
Couple	-0.032	-0.032	-0.032	-0.031
	(0.011)***	(0.010)***	(0.010)***	(0.015)**
Education respondent	-0.110	-0.092	-0.093	-0.089
	(0.021)***	(0.025)***	(0.026)***	(0.029)***
Education respondent (sq)	0.013	0.012	0.012	0.011
	(0.002)***	(0.003)***	(0.003)***	(0.003)***
Employment status				
Public sect. employee	-0.075	-0.097	-0.090	-0.119
	(0.023)***	(0.027)***	(0.025)***	(0.022)***
Private sect. employee	0.011	0.010	0.013	0.016
	(0.017)	(0.019)	(0.018)	(0.022)
Unemployed	-0.061	-0.070	-0.075	-0.072
	(0.022)***	(0.025)***	(0.024)***	(0.027)***
Retired	0.043	0.023	0.024	-0.015
	(0.034)	(0.049)	(0.049)	(0.050)
At home	0.021	0.011	0.011	-0.001
	(0.019)	(0.018)	(0.018)	(0.021)
Student	-0.066	-0.067	-0.067	-0.095
	(0.026)**	(0.025)***	(0.025)***	(0.030)***
Asset ownership				
Tv	-0.047	-0.035	-0.029	-0.058
	(0.029)	(0.037)	(0.034)	(0.044)
Fridge	-0.011	-0.016	-0.012	0.017
	(0.030)	(0.042)	(0.040)	(0.049)
Computer	0.066	0.089	0.088	0.090
	(0.016)***	(0.019)***	(0.019)***	(0.020)***
Wash	0.054	0.048	0.053	0.059
	(0.019)***	(0.026)*	(0.024)**	(0.020)***
Car	0.076	0.075	0.077	0.073
	(0.014)***	(0.016)***	(0.016)***	(0.014)***
Secondary house	0.057	0.049	0.051	0.046
	(0.015)***	(0.019)**	(0.019)***	(0.018)**
Home owner	0.014	-0.000	-0.002	-0.015
	(0.015)	(0.015)	(0.015)	(0.017)
Access to services				
Drinking water	-0.092	-0.115	-0.112	-0.103
	(0.024)***	(0.033)***	(0.031)***	(0.031)***
Hot water	0.055	0.060	0.056	0.051
	(0.021)***	(0.028)**	(0.025)**	(0.026)*
Sewage system	-0.031	-0.030	-0.029	-0.009
	(0.023)	(0.026)	(0.026)	(0.023)

Table A4 - continued

Country level var.				
GNI per capita		0.176	0.153	0.127
		(0.070)**	(0.059)***	(0.064)**
GDP growth -1		-0.004	-0.002	-0.004
		(0.006)	(0.005)	(0.006)
Privat. proceeds (10^6)		14.39	18.24	9.16
		(12.65)	(15.22)	(9.92)
Corruption		-0.027	-0.039	-0.040
		(0.051)	(0.055)	(0.047)
Bureaucratic quality			-0.518	
			(0.089)***	
Democracy index			0.000	
			(0.001)	
Opinions variables				
Better situation				-0.108
				(0.012)***
Future situation				-0.089
				(0.019)***
Left/right				0.023
				(0.008)***
Law confidence				-0.111
				(0.011)***
Trust				0.151
				(0.029)***
Democracy preference				-0.039
				(0.026)
Year 2000	-0.433			
	(0.003)***			
Year 2001	-0.778			
	(0.003)***			
Year 2002	-0.920			
	(0.002)***			
Year 2003	-0.958			
	(0.005)***			
Year 2005	-0.472			
	(0.005)***			
year		-0.150	-0.217	-0.147
		(0.015)***	(0.024)***	(0.014)***
Country fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	No	No	No
Country†year fixed effects	Yes	No	No	No
Observations	90289	70393	43887	47800

Robust standard errors in parentheses (clustered at the country level). Coefficients significant at 10%: *; 5%: **; 1%: ***. Variables coding: See Table 1.

Table 1. Probit estimations with individual data

Probit	(1)	(2)	(3)	(4)	(5)
Demographics					
Sex	-0.037	-0.045	-0.044	-0.044	-0.022
	(0.012)***	(0.012)***	(0.012)***	(0.012)***	(0.014)
Age	-0.003	-0.003	-0.003	-0.003	-0.002
	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)**
Couple	-0.022	-0.029	-0.029	-0.029	-0.028
	(0.011)**	(0.011)***	(0.011)***	(0.011)***	(0.016)*
Education respondent	-0.083	-0.079	-0.079	-0.079	-0.078
	(0.027)***	(0.026)***	(0.026)***	(0.026)***	(0.029)***
Education respondent (sq)	0.012	0.012	0.012	0.012	0.011
	(0.003)***	(0.003)***	(0.003)***	(0.003)***	(0.003)***
Employment status					
Public sect. employee	-0.077	-0.088	-0.084	-0.084	-0.113
	(0.023)***	(0.026)***	(0.026)***	(0.026)***	(0.023)***
Private sect. employee	0.020	0.015	0.016	0.016	0.021
	(0.019)	(0.019)	(0.018)	(0.018)	(0.022)
Unemployed	-0.082	-0.079	-0.080	-0.080	-0.084
	(0.023)***	(0.029)***	(0.028)***	(0.028)***	(0.028)***
Retired	0.048	0.032	0.032	0.032	-0.011
	(0.036)	(0.051)	(0.051)	(0.051)	(0.051)
At home	0.026	0.021	0.021	0.021	0.011
	(0.017)	(0.020)	(0.020)	(0.020)	(0.023)
Student	-0.033	-0.042	-0.041	-0.041	-0.073
	(0.022)	(0.023)*	(0.024)*	(0.024)*	(0.028)***
Asset ownership					
Tv	-0.065	-0.039	-0.036	-0.036	-0.060
	(0.031)**	(0.035)	(0.033)	(0.033)	(0.041)
Fridge	0.001	-0.000	0.000	0.000	–0.031
	(0.033)	(0.043)	(0.041)	(0.041)	(0.050)
Computer	0.030	0.056	0.055	0.055	0.061
	(0.024)	(0.024)**	(0.024)**	(0.024)**	(0.024)**
Wash	0.042	0.049	0.050	0.050	0.057
	(0.024)*	(0.026)*	(0.025)**	(0.025)**	(0.019)***
Car	0.095	0.092	0.094	0.094	0.089
	(0.015)***	(0.019)***	(0.019)***	(0.019)***	(0.017)***
Secondary house	0.059	0.056	0.057	0.057	0.051
	(0.017)***	(0.019)***	(0.019)***	(0.019)***	(0.017)***
Home owner	0.008	0.005	-0.004	-0.004	-0.010
	(0.013)	(0.016)	(0.016)	(0.016)	(0.018)
Access to services					
Drinking water	-0.114	-0.121	-0.119	-0.119	-0.108
	(0.029)***	(0.034)***	(0.033)***	(0.033)***	(0.032)***
Hot water	0.086	0.077	0.076	0.076	0.071
	(0.030)***	(0.031)**	(0.030)**	(0.030)**	(0.029)**
Sewage system	-0.005	-0.010	-0.008	-0.008	0.010
	(0.021)	(0.025)	(0.025)	(0.025)	(0.024)

Table 1-continued

Country level var.					
GNI per capita		-0.084	-0.096	-0.096	-0.129
		(0.139)	(0.143)	(0.143)	(0.123)
GDP growth -1		0.026	0.028	0.028	0.026
		(0.008)***	(0.009)***	(0.009)***	(0.010)***
Privat. proceeds (10^6)		9.81	10.86	10.86	3.65
		(17.91)	(19.14)	(19.14)	(15.68)
Corruption		0.091	0.086	0.086	0.073
		(0.051)*	(0.053)	(0.053)	(0.054)
Bureaucratic quality			-0.224	-0.224	
			(0.102)**	(0.102)**	
Democracy index			-0.002	-0.002	
			(0.001)***	(0.001)***	
Opinions variables					
Better situation					-0.104
					(0.017)***
Future situation					-0.088
					(0.019)***
Left/right					0.022
					(0.008)**
Law confidence					-0.131
					(0.010)***
Trust					0.142
					(0.024)***
Democracy preference					-0.032
					(0.028)
Constant	-0.084	0.380	1.194	1.194	1.819
	(0.093)	(1.810)	(2.026)	(2.026)	(1.586)
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	No	No	No	No	No
Observations	90289	70393	70393	70393	47800

Robust standard errors in parentheses (clustered at the country level). Coefficients significant at 10%: *; 5%: **; 1%: ***.

Variables coding. Demographics: sex (0=man, 1=women); age (years); couple (0=living in couple, 1=single); education of respondent (1=illiterate; 2=basic incomplete; 3=basic complete; 4=secondary, medium, technical incomplete; 5=Secondary, medium, technical complete; 6=superior incomplete; 7=superior complete). Employment status: public sector employee/private sector employee/unemployed/retired/at home/student (1=yes, 0=no). Asset ownership: tv/fridge/computer/wash machine/car/secondary house/home owner (1=yes, 0=no). Access to services: drinking water/hot water/sewage system (1=yes, 0=no) Country level variables: GNI per capita (in US$); GDP growth -1 (lagged growth in %); privatization proceeds (accumulated proceeds as a % of GDP); corruption (PRS ICRG index, ranges from 0 (highly corrupt) to 6 (not corrupt)); Inflation -1 (lagged inflation in %); bureaucratic quality (PRS ICRG index, ranges from 0 (low quality) to 4 (high quality)); democracy index (0-10 scale, from less to more democratic); Unemployment -1 (lagged unemployment in %). Opinions variables: better situation (1=better,

2=equal, 3=worse); future situation (1=better, 2=equal, 3=worse); left/right (ranges from 0 (extreme left) to 10 (extreme right); law confidence (1=very high, 2=high, 3=low, 4=very low); trust (1=yes, 0=no); democracy preference (-1=prefers authoritarian regime, 0=indifferent, 1=prefers democracy).

Table 2. Regression of country-year effects on country level variables.

OLS	(1)	(2)
GNI per capita	-0.013	0.000
	(0.018)	(0.025)
GDP growth -1	0.084	0.087
	(0.035)**	(0.036)**
Privat. proceeds (10^6)	-6.06	-5.53
	(2.23)***	(2.46)**
Corruption	0.008	0.011
	(0.080)	(0.081)
Bureaucratic quality		-0.072
		(0.091)
Democracy index		-0.005
		(0.008)
Constant	0.323	0.395
	(0.192)*	(0.211)*
Observations	80	80
R-squared	0.19	0.20

Robust standard errors in parentheses. Coefficients significant at 10%: *; 5%: **; 1%: ***.

Variables coding: See Table 1.

Table 3. Estimations with aggregate data

Probit	(1)	(2)	(3)	(4)
Demographics				
Sex	-0.621	0.383	-0.549	-0.932
	(1.571)	(1.325)	(1.323)	(1.623)
Age	-0.011	-0.009	-0.014	-0.010
	(0.014)	(0.015)	(0.016)	(0.012)
Couple	0.125	0.579	-0.348	-0.424
	(0.422)	(0.387)	(0.834)	(0.779)
Education respondent	-0.105	-0.052	-0.391	-0.333
	(0.032)***	(0.026)*	(0.278)	(0.277)
Education respondent (sq)	0.014	0.006	0.062	0.050
	(0.004)***	(0.004)	(0.038)	(0.037)
Employment status				
Public sect. employee	-1.238	-0.752	0.245	-0.342
	(0.484)**	(0.390)*	(0.879)	(0.882)
Private sect. employee	0.350	0.277	1.063	1.141
	(0.383)	(0.372)	(0.451)**	(0.531)**
Unemployed	-1.084	-0.195	0.071	-0.038
	(0.579)*	(0.611)	(0.724)	(1.000)
Retired	1.447	0.441	1.504	0.453
	(0.869)	(1.084)	(1.276)	(1.237)
At home	-0.389	-0.487	0.264	0.061
	(0.374)	(0.546)	(0.678)	(0.656)
Student	1.104	1.706	2.685	2.378
	(0.689)	(0.598)**	(0.641)***	(0.699)***
Asset ownership				
Tv	-0.658	-0.967	-1.327	-0.734
	(0.639)	(0.677)	(0.482)**	(0.889)
Fridge	0.044	0.328	0.092	-0.104
	(0.433)	(0.475)	(0.472)	(0.456)
Computer	-0.093	-0.117	-0.652	-0.690
	(0.403)	(0.384)	(0.566)	(0.651)
Wash	-0.252	-0.293	-0.464	-0.406
	(0.237)	(0.172)	(0.247)*	(0.350)
Car	0.722	0.051	0.628	1.050
	(0.483)	(0.421)	(0.457)	(0.520)*
Secondary house	-0.208	0.275	0.088	0.344
	(0.674)	(0.642)	(0.776)	(0.758)
Home owner	-0.342	0.051	-0.799	-0.909
	(0.490)	(0.390)	(0.571)	(0.578)
Access to services				
Drinking water	-0.351	-0.441	-0.625	-0.813
	(0.340)	(0.450)	(0.598)	(0.583)
Hot water	0.255	0.344	0.433	0.229
	(0.117)**	(0.082)***	(0.137)***	(0.259)
Sewage system	0.028	0.032	-0.100	-0.170
	(0.250)	(0.201)	(0.300)	(0.351)

Table 3.- continued

Country level var.				
GNI per capita		0.029	0.097	0.118
		(0.031)	(0.042)**	(0.051)**
GDP growth -1			-0.003	-0.003
			(0.005)	(0.006)
Privat. proceeds (10^6)			-4.701	-3.446
			(11.157)	(12.540)
Corruption			-0.012	-0.015
			(0.023)	(0.033)
Opinions variables				
Better situation				-0.144
				(0.213)
Future situation				0.116
				(0.180)
Left/right				-0.001
				(0.003)
Law confidence				-0.012
				(0.200)
Trust				0.557
				(0.373)
Democracy preference				0.200
				(0.098)*
year	-0.002	-0.030	-0.021	-0.034
	(0.007)	(0.008)***	(0.019)	(0.034)
Country fixed effect	Yes	Yes	Yes	Yes
Observations	101	84	63	63
R-squared	0.72	0.87	0.90	0.94

Robust standard errors in parentheses. Coefficients significant at 10%: *; 5%: **; 1%: ***.

Variables coding: See Table 1.

Table 4. Pseudo panel fixed effects (defining variables: country, age, sex)

Probit	(1)	(2)	(3)	(4)
	OLS	OLS	OLS	OLS
Demographics				
Couple	0.744	1.706	1.719	0.824
	(0.231)***	(0.326)***	(0.336)***	(0.326)**
Education respondent	-0.055	-0.038	-0.016	-0.021
	(0.026)**	(0.028)	(0.027)	(0.029)
Education respondent (sq)	0.012	0.007	0.005	0.003
	(0.004)***	(0.004)*	(0.004)	(0.004)
Employment status				
Public sect. employee	-2.109	-2.880	-1.908	-2.631
	(0.343)***	(0.425)***	(0.507)***	(0.419)***
Private sect. employee	0.881	0.377	0.662	0.780
	(0.196)***	(0.231)	(0.239)***	(0.256)***
Unemployed	-0.676	-0.389	-0.637	0.178
	(0.293)**	(0.416)	(0.415)**	(0.417)
Retired	0.424	-1.413	-1.102	-1.838
	(0.509)	(0.557)**	(0.534)**	(0.543)***
At home	-1.397	-2.007	-1.720	-1.505
	(0.220)***	(0.320)***	(0.353)***	(0.302)***
Student	2.163	2.653	-2.395	2.640
	(0.378)***	(0.441)***	(0.479)***	(0.424)***
Asset ownership				
Tv	-0.337	-0.221	0.149	-0.187
	(0.137)**	(0.159)	(0.155)	(0.144)
Fridge	-0.063	-0.162	-0.154	-0.192
	(0.112)	(0.115)	(0.118)	(0.113)*
Computer	0.193	0.021	0.049	0.006
	(0.130)	(0.134)	(0.132)	(0.127)
Wash	-0.299	-0.194	-0.171	-0.132
	(0.104)***	(0.098)**	(0.101)*	(0.100)
Car	0.144	0.114	0.167	0.175
	(0.117)	(0.121)	(0.118)	(0.119)
Secondary house	0.183	0.282	0.315	0.208
	(0.152)	(0.161)*	(0.159)**	(0.150)
Home owner	-0.060	-0.054	-0.093	-0.098
	(0.101)	(0.114)	(0.120)	(0.108)
Access to services				
Drinking water	-0.650	-0.498	-0.448	-0.512
	(0.124)***	(0.143)***	(0.147)***	(0.133)***
Hot water	0.168	0.272	0.219	0.153
	(0.070)**	(0.082)***	(0.095)**	(0.085)*
Sewage system	0.125	-0.041	0.035	0.098
	(0.076)	(0.089)	(0.086)	(0.089)

Table 4.- continued

Country level var.				
GNI per capita		0.165	0.149	0.118
		(0.018)***	(0.019)***	(0.019)***
GDP growth -1		-0.009	-0.009	-0.003
		(0.003)***	(0.003)***	(0.003)
Privat. proceeds		4.118	7.720	3.592
		(2.986)	(3.982)*	(2.808)
Corruption		0.035	0.031	-0.006
		(0.013)***	(0.014)**	(0.013)
Bureaucratic quality			-0.284	
			(0.069)***	
Democracy index			-0.001	
			(0.000)**	
Opinions variables				
Better situation				-0.210
				(0.044)***
Future situation				0.080
				(0.039)**
Left/right				-0.022
				(0.012)*
Law confidence				-0.086
				(0.087)
Trust				-0.245
				(0.042)***
Democracy preference				0.359
				(0.169)**
Year 2000	-0.161	-0.232	-0.300	-0.185
	(0.020)***	(0.024)***	(0.036)***	(0.028)***
Year 2001	-0.252	-0.333	-0.311	-0.293
	(0.023)***	(0.025)***	(0.029)***	(0.029)***
Year 2002	-0.214	-0.292	-0.220	-0.244
	(0.022)***	(0.028)***	(0.055)***	(0.028)***
Year 2003	-0.412	-0.509	-0.487	-0.411
	(0.024)***	(0.030)***	(0.051)***	(0.035)***
Year 2005	-0.173	0.000	0.000	0.000
	(0.026)***	(0.000)	(0.000)	(0.000)
Observations	1414	1106	714	1106
Number of identi	238	224	224	224
R-squared	0.58	0.66	0.79	0.70

Robust standard errors in parentheses (clustered at the country level). Coefficients significant at 10%: *; 5%: **; 1%: ***. Variables coding: See Table 1.

Table 6. Pseudo panel fixed effects (defining variables: Column 1-2: country, age, sex; Column 3-4: country, age, sex, left/right)

Probit	(1) 2SLS	(2) 2SLS	(3) 2SLS
Demographics			
Couple	-0.356	-3.473	-0.936
	(1.245)	(2.224)	(1.125)
Education respondent	-0.139	-0.211	-0.137
	(0.088)	(0.481)	(0.079)*
Education respondent (sq)	0.017	0.024	-0.021
	(0.011)	(0.060)	(0.009)**
Employment status			
Public sect. employee	-1.892	-6.641	-1.866
	(1.375)	(2.922)**	(2.804)
Private sect. employee	1.599	-3.603	-0.229
	(0.906)*	(2.070)*	(2.601)
Unemployed	1.459	0.663	0.691
	(2.231)	(5.060)	(2.701)
Retired	-1.893	-2.770	-3.940
	(1.065)*	(1.778)	(1.178)***
At home	-0.865	-2.811	-1.372
	(0.672)	(1.444)*	(1.460)
Student	2.224	0.493	1.813
	(0.685)***	(3.867)	(1.228)
Asset ownership			
Tv	-0.157	-0.961	-0.008
	(0.226)	(0.632)	(0.044)
Fridge	-0.008	0.429	0.033
	(0.361)	(0.412)	(0.046)
Computer	0.341	1.587	0.023
	(0.239)	(0.692)**	(0.042)
Wash	-0.020	-0.668	0.023
	(0.290)	(0.556)	(0.061)
Car	-0.422	0.041	-0.047
	(0.230)*	(0.386)	(0.033)
Secondary house	-0.330	-0.639	-0.063
	(0.209)	(0.524)	(0.060)
Home owner	0.323	0.495	0.036
	(0.158)**	(0.372)	(0.030)
Access to services			
Drinking water	0.704	0.595	0.119
	(0.205)***	(0.488)	(0.046)***
Hot water	0.066	-0.626	-0.086
	(0.362)	(0.580)	(0.053)
Sewage system	0.078	0.139	-0.009
	(0.163)	(0.684)	(0.040)

38

Table 6. - continued

Country level var.	(1)	(2)	(3)
GNI per capita	0.124	-0.103	0.000
	(0.149)	(0.145)	(0.000)
GDP growth -1	-0.002	0.004	0.002
	(0.016)	(0.013)	(0.012)
Privat. proceeds	2.285	15.782	2.980
	(6.528)	(18.921)	(10.247)
Corruption	-0.061	-0.043	-0.058
	(0.100	(0.141)	(0.105)
Opinions variables			
Better situation	-0.793	-2.005	0.217
	(0.450)*	(1.581)	(0.536)
Future situation	0.509	1.413	-0.186
	(0.426)	(0.844)*	(0.435)
Left/right	-0.085	-0.095	
	(0.037)**	(0.321)	
Law confidence	-0.038	-0.041	-0.067
	(0.306)	(1.225)	(0.056)
Trust	1.433	-6.770	-1.740
	(1.245)	(3.484)*	(3.566)
Democracy preference	-0.555	-3.529	-2.230
	(0.531)	(2.235)	(1.125)**
Year 2000	-0.109	-0.513	-0.315
	(0.107)	(0.332)	(0.251)
Year 2001	-0.329	-1.053	-0.661
	(0.103)***	(0.396)***	(0.260)**
Year 2002	-0.257	-0.390	-0.350
	(0.094)***	(0.263)	(0.046)***
Year 2003	-0.511	-0.960	−0.675
	(0.1534)***	(0.534)*	(0.157)***
Observations	1106	1106	9598
Number of groups	224	224	2173
Sargan test of overidentification (df)	2.606(2)	0.096(2)	0.111(2)

Instruments:

(1)   interactions between year dummies and lagged values of left_right and law confidence.

(2)   interactions between year dummies and beginning of the period perceptions on the impact of drugs in society and the impact of work for success

(3)   interactions between year dummies and lagged values of law confidence, as well as beginning of the period perceptions on the impact of drugs in society.

Robust standard errors in parentheses (clustered at the country level). Coefficients significant at 10%: *; 5%: **; 1%: ***. Variables coding: See Table 1.