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Privatization Discontent and Its Determinants: Evidence from Latin America

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May 2005

Forschungsinstitut
zur Zukunft der Arbeit
Institute for the Study
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Privatization Discontent and Its Determinants: Evidence from Latin America

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ABSTRACT

Privatization Discontent and Its Determinants: Evidence from Latin America

Privatization policy faces increasing popular opposition in Latin America. We test for the determinants of this discontent. We use the results of Latinobarometro (2002), a survey of a representative sample of 18522 individuals in 17 countries as our dependent variable of perception, and a privatization dataset on the same countries, including sectoral disaggregation of divestitures, time profiles, proceeds, and other variables for each country. We use as well a set of macroeconomic variables as controls.. Our main finding is that disagreement with privatization is more likely when the respondent is poor, privatization was large and quick, involved a high proportion of public services as water and electricity, the country suffered adverse macroeconomic shocks, and there is high inequality of incomes. The more the respondent is educated, the more adverse to privatization he or she is. We suggest that these results depict a broadly consistent picture of privatization discontent that points to distributional issues, probably because of tariff rebalancing not adequately addressed by policy makers and regulators, as suggested by earlier empirical papers. Further research is needed on the relationship between perceptions and actual welfare changes.

JEL Classification: H32, G14, L33

Keywords: privatization, Latin America, distributive impact, panel survey data, social attitudes

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1. **Introduction**

During the last two decades privatization in Latin America (LA), and the related (usually subsequent) market liberalization and regulatory reforms, were a vast process that changed the provision of public services for millions of users. Among developing countries, Latin America was the region where privatization started earlier and reached an amount of money larger than in any other region (Lora, 2001).

Despite the widespread consensus among policy-makers and international lenders[1], currently privatization is highly and increasingly unpopular in Latin America, as well documented by several independent surveys (Lora, Panizza, and Quispe-Agnoli. 2004). In this paper we use social attitudes data to study the determinants of privatization discontent. We suggest that our approach may help to understand why a reform that most policy makers and their advisors consider as beneficial is in fact increasingly opposed. Our core working hypothesis is that distributive issues do play a role in the perception of the benefits and costs of privatization, as suggested by a strand of recent empirical research on welfare changes for consumers (Ugaz and Waddams Price, 2003)[2]. We do not assume that respondents to surveys are always well informed, but we think that variations in their opinions may be revealing about the information they consider.

The following three quotations from recent papers by some World Bank economists sets our research questions in the context of current policy debate on utility reform.

"*The supposed failure of privatization in Latin America has recently become the source of street riots, protest demonstrations, and adverse news coverage…These adverse opinions are not restricted to a handful of protesters. Latinobarometer opinion polls .. show that a clear majority disapprove of the privatization process, a pattern that is uniform across countries, age, gender and socioeconomic classes. The opinions appear to be becoming increasingly adverse over time…*" (McKenzie and Mokherjee 2003,p.1-2);

"*There can be little doubt that mistakes have been made and promises not kept - but a good number are not. An argument can be made that the concrete outcomes of privatization have been better than people think, or that privatization may not be the actual cause of the real difficulties they perceive. Nonetheless, perceptions count greatly in and of themselves if they result in political opposition sufficient to slow, halt or reverse a process that would bring efficiency and growth gains to a society gains which could in principle be fairly shared using tax or other policy instruments.*" (Birdsall and Nellis 2003, p.4);

"*It is possible that due to data limitations and perhaps even methodological flaws, statistical models do not accurately measure the true welfare impact of these reforms. It is also possible that public perceptions are subject to systematic biases*" (Kessides,2004, p.58).

According to Kessides, empirical research should focus on the collection of comparable cross-country micro-data on prices and consumption, data however currently not available. While we

[1] According to Williamson (1990, 2000) privatization was a key ingredient of structural adjustment in Latin American in the framework of the Washington Consensus, i.e. the policy package advocated in the 1980s by the US Treasury, the IMF, the World Bank, and other international organizations. The basic idea behind large-scale divestitures of state owned enterprises (SOESs) in the last twenty years was to raise microeconomic efficiency at the same time of macroeconomic reforms (Florio 2002).

[2] Most of the empirical research in this area recurs to simple microeconomic performance indicators; particularly they focus on changes in labour productivity or in profitability (Megginson and Netter, 2001). Only a more limited set of authors explore social costs and benefits of privatization, and particularly their impact on prices and redistribution of welfare: examples are Galal et al (1994), Newbery and Pollitt (1997), La Porta and Lòpez-de-Silanes (1999), Florio (2004) and other contributions reviewed by Birdsall and Nellis (2003) and Ugaz and Waddams Price, 2003).

agree that this is badly needed, in this paper we use a different, albeit complementary, research strategy. In fact, contrary to what is said by the first quotation above, we do observe sufficient variability in perceptions across a number of socio-economic characteristics of the respondents, and we use this fact to explore possible determinants of perceived failures

Obviously we cannot rule out the suspect that respondents are uninformed and that they give the 'wrong answer', as suggested by the second and third quotation. Even if the respondents may do evaluation mistakes, however, these mistakes should be randomly distributed across countries and, within countries, across individuals. Thus finding recurrent patterns across countries may indicate the existence of substantive phenomena, that may be difficult to capture by using more aggregate data, e.g. about tariff or expenditure changes for the average consumers. Moreover, we suggest that the analysis of subjective micro-information may contribute to the redesign of empirical research on actual measurable welfare changes and of policy reforms themselves, because micro data show where problems are actually encountered.

We use the results of Latinobarometro 2002, a survey of a representative sample of 18522 individuals in 17 countries. The simple question asked was the following: "The privatization of state companies has been beneficial to the country?". The sample summary results are reported in table **1**. They show that around 61% of interviewees disagree (67% when excluding non respondents and those who 'do not know'). A new survey in 2003 shows even worsening perceptions , with a net disagreement around –40% (difference between those who agree and those who do not agree), and the highest disagreement in Argentina, around –70% and the lowest in Brazil, -20% (The Economist, 2003 - see also World Bank (2003a)).

[insert table **1** about here]

We focus on how subjective perceptions of welfare changes are related to social conditions of respondents and to their economic environment by testing in our sample three data-sets of explanatory variables and controls:

- social characteristics of the respondents (i.e. their economic conditions, education and between employed in the private or public sector)
- country macroeconomic environment (a set of economic indicators)
- privatization characteristics (i.e. composition by sector, timing, and amount of divestiture proceeds).

Our main finding is that the highest probability of disagreement with privatization is encountered when the respondent is poor, privatization was large and involved a high proportion of public utilities (as water and electricity), and the country suffered adverse macroeconomic shocks and high inequality of incomes. Moreover, the more is the respondent educated (hence supposedly more informed), the more adverse he or she is. We suggest that these results depict a broadly consistent picture of privatization discontent that points to a combination of perceived distributive concerns that should be addressed by future research and policy design.

The structure of the paper is the following. In section 2, we briefly consider the conceptual framework on social benefits and costs of privatization, the possible relationship between objective and subjective evidence, and a set of propositions that we wish to test, along with the background history of different national models of reform, and earlier empirical research on the welfare impact of privatization in Latin America. In section 3, we present our data sources and empirical findings. We conclude summing up our results, and their implications for further research and policy design.

2. Social benefits and cost of privatization: theory and evidence in Latin America

2.1 Welfare effects of reforms

As said in the pervious section we do not test here objective data on social costs and benefits of privatization, and we restrict to subjective attitudes towards it. An analytical framework, however, is helpful to understand how in principle the various agents can be affected by public divestitures. Among others, Dreze and Stern (1990), Jones et al. (1990), Galal et al. (1994), Newbery and Pollitt (1997), and Florio (2004) offer a detailed discussion of this issue.

The social welfare change of policy reform can be seen as the sum of the welfare changes of four individual types: consumers, taxpayers, shareholders and workers. There may be other agents involved if we consider for example the suppliers and competitors of privatized firms, or foreign investors, but these usually have less weight in the social welfare evaluation. Each term can be dealt with separately when we know how to estimate it from observable data.

As for aggregation, given a social welfare function of the Bergson-Samuelson type, one may need to use welfare weights to evaluate the change of welfare of respectively different consumers, taxpayers etc. Alternatively we may need specific weights to evaluate the marginal impact of the change in welfare of group of representative consumers, tax-payers and so on. One should be careful however with the aggregation assumptions. While economists would like to have all the relevant information to make the appropriate calculations, in order to understand the differential impact of a policy reform on specific group of agents and to estimate shadow prices to account for general equilibrium effects, these data are often not easily available. Often conjectures and prior beliefs bias applied research on policy reforms. In turn, when an individual is asked whether in his or her opinion a reform was 'beneficial to the country', the interviewer asks for a sort of very crude social cost-benefit analysis. The concerned individual will partly answer on the basis of her direct experience, partly on her ideology and external factors. We discuss below some of the factors that in principle may influence the judgment of an observer of privatization. We focus particularly on consumers because the earlier research mentioned above show that they play the key role in the welfare evaluation of policy reforms.

Privatization[3] may have a direct impact on consumers' welfare, particularly through the divestiture of state-owned public utilities and other public services. Following privatization, consumers may experience:

- changes in the potential access to the network of utilities or to other public services (e.g. there is network expansion because of the release of investment constraints that affected the former state owned enterprises - SOEs henceforth - or a cut of services in some less profitable regions)
- changes in the tariff structure (e.g. changes of access charges, fixed components of the tariff, prices per unit of service, payment method, tariff rebalancing among type of services)
- changes in quality of service (e.g. number of failures in telephone calls, breaks in delivery of water or electricity)
- indirect impact through prices of substitute goods (this is however less verifiable by the consumer).

Each of these dimensions poses difficult challenges for empirical research on welfare changes. In principle we would need time series of individual micro-data and of related controls. Some of these data are available to the utilities, but are not in the public domain. Other data are available by

[3] 'Privatization' is here a synonym for a wide set of reforms including divestiture of state-owned enterprises, market liberalization and re-regulation. In fact the time sequence is often the above ordering. In this paper we cannot disentangle country-by-country these policy features and we shall use the generic term privatization as the generic label for the process of change initiated by SOE divestitures.

official expenditure surveys, but their country coverage is uneven in Latin America and non comparable across countries. Aggregate information on the "average" consumer is not well suited for welfare analysis and may conceal redistributive impacts. We cite below, however, some interesting evidence of such impacts following utility reform in Latin America, but overall objective evidence is patchy.

Before moving to empirical evidence, let us consider why, in principle, the redistributive dimension of utility reform may be significant. In the aftermath of privatization, the poor (by income share or by source of income, e.g. pensioners) often suffer a risk of being net loser mainly because the abolition of cross-subsidies in the tariff structure. SOEs used implicit taxation of business users (or other high volume users) by charging higher tariffs, and the rent was then used to implicitly subsidization of household users. Thus, in some countries SOEs deliberately distorted prices in such a way as to sell at prices below long run marginal costs (LRMC) to some types of users (e.g. residential users in water, telephone, transport, electricity and gas) and above LRMC to other types (particularly business users). In principle, if privatization generates the incentive for managers to devote more effort to decrease production costs, this efficiency shock may countervail the adverse redistribution impact, creating a positive-sum game (at least in absolute welfare terms). This Pareto-improving reform is, however, unlikely under sustained market power of the incumbent, or under weak regulation, and adverse welfare redistribution may appear, at least for some initial years. Moreover, under poor regulatory framework, regressive price-discrimination substitutes for the previous pattern.

Because of lack of appropriate data, some empirical research in this area risk to miss the point when it has to assume "*that all households were sold the same product at the same price*", in the words of McKenzie and Mookherjee (2003, p.4). The variability across social groups is however the key issue for the distributive impact of reforms in many sectors, because regressive welfare changes following privatization cannot be ruled out.

In this paper we propose a complementary research strategy to the traditional welfare changes measurement. We assume here that consumers have at least some relevant information on access, quality, quantity and prices of the public services they use, before and after privatization. Hence, we assume that their attitudes on the social benefits of privatization depend at least partly upon this information, as upon several other factors as well. People may be uniformed about the overall welfare changes in the country, but we maintain that they are able to assess the relevant changes affecting their consumption expenditure. Still, agents may be wrong in gauging the exact extent of the change, but if perception errors are randomly distributed, the direction of change may be perceived rather correctly.

Thus, we conjecture that when the actual welfare impact of privatization is regressive, in countries with high income inequality, a large number of the respondents in a social attitudes survey will be critical of the reform, and support to privatization will decline with income or well-being of the respondents. Conversely, if we find that disagreement on the benefit of privatization is related to income of the respondents, this may suggest that utility reforms may have had a regressive component and justify further inquiry on actual reform outcomes.[4] As a consequence, a country

[4] Under this angle survey data may be a complement (certainly not a substitute, however) to more traditional welfare analysis based on expenditure surveys or industry statistics. As mentioned at the beginning of this section, other social groups involved directly in the reforms are shareholders, workers, and tax-payers. Usually the first are winners (because of underpricing of shares at initial public offerings and residual market power of the incumbents), the second losers (because of overmanning in the SOEs), and the third are winners or losers depending on the specific fiscal choices of government (e.g. the use of privatization proceeds either to sustain public investment or current expenditures, or to redeem debt. The welfare impact of such changes will be often regressive. Thus it is crucial to assess the welfare

with sizeable income inequality is more at risk of privatization discontent. The social aversion to inequality is probably not linear in inequality itself, and any reform perceived as regressive in countries where inequality is high may be very unpopular. Particularly important is the change over time of inequality. Worsening inequality can reinforce the perception that privatization may directly contribute to this process, or that the regressive consequences of privatization, albeit transitory, may be unbearable by those in the lower income brackets, especially when they have to face tariff rebalancing.

Under this angle, we would also expect that the public support to privatization decreases when industries to be divested include a high proportion of utilities. In fact, the adverse redistribution effects, or related fears thereof, are more likely for public services. The concern for selling state-owned manufacturing business, or financial services, is strong among workers in those sectors, but probably not so important for the general public.

An additional dimension of privatization discontent may be related to an excess of divestiture in short time. Under these circumstances long habits of consumers of public services are suddenly disturbed, and even if quality of services may gradually increase and their prices decreases, initial reactions to a shock may be negative from consumers.

Eventually, macroeconomic conditions may also influence these perceptions: if a country suffers macroeconomic shocks, respondents are more pessimistic on their future incomes and they may fear a privatization implying higher prices, cutting public services and/or creating the necessity to recur to costly substitutes.

The above discussion sets some working hypotheses for testing empirically the determinants of privatization discontent. In the next section we present some features of privatization in Latin America that justify why the region seems to be a very suitable candidate to test our conjectures.

2.2 National variations in privatization patterns in Latin America

Because we are going to use a cross-country data sample, we should take into account the relevance of country-specific features. In the sequel we provide a brief overview of national variation in the experience of privatisation; more detailed information can be found in the literature we cite. The privatization process in Latin America in the ‘90s was part of a political and ideological trend common to most political parties from the right to the left (Murillo,2002). This common trend showed, however, national variations: differences are related to the magnitude, velocity, depth and methodology of the privatization. This could give origin to different perceptions about privatization in each country.

Regarding the scale of the process, important disparities exist between counties. The cumulative revenues of privatization during the period 1988-1999 were higher than 8% of GDP in four countries: Bolivia (19.7%), Peru (13.2%), Brazil (10.9%) and Argentina (8.6%), whereas they did not exceed 3% of GDP in Honduras, Ecuador, Costa Rica, Paraguay and Uruguay (Chong and López de Silanes, 2003; Lora, 2001; Lora and Panizza, 2002). The fact that Chile is not among the most intense privatizers is partially due to the fact that it started earlier than the rest of the countries.

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impact on consumers, because they outnumber the other groups in population and in the representative samples of social attitude surveys. A detailed discussion goes beyond the scope of the paper; see Drèze and Stern (1990) and Florio (2004).

Mexico was another earlier privatizer but the revenues in this first stage were not significant (McKenzie and Mookherjee, 2003).

As regards to the sectors that have been involved in the process, 75% of the value of privatization's revenues came from utilities and infrastructure, the financial sector representing 11% and the rest came from oil, gas and manufacturing. Most of the countries privatized telecoms, electricity, gas, water and sanitation services. Privatization of railways, airlines, airports and highway were less extensive. Divestitures of financial and productive sectors were not so important because private participation was already present there. Additionally, most governments insisted on retaining one or more public banks and, except Argentina, governments opted for retaining under public control the companies connected with natural resources (such as oil, gas and copper). In contrast to Eastern Europe, divestitures in manufacturing was not important in Latin America, except for some old strategic heavy industries such as steel, aluminium and so on.[5]

There is a common perception of Chile as a leading case in Latin America privatization, which is based more on the characteristics and extension of the process than in its depth. In this country, the state withdrew from social security, health and education systems but, simultaneously, retained ENAMI and Codelco (the most important player in the copper sector), the monopoly of the oil sector, the fourth commercial bank, the post, the railways and the ports. Thus, the share of SOEs in the GDP after privatization reaches 9%; which is higher than the average of LA countries (5%), according Fischer et al. (2003). In contrast, Argentina did not retain the ownership of any important state company, with the exception of some national and provincial banks and some provincial companies of sanitation (Galiani et al, 2003). The cases of Mexico and Uruguay showed a very important role for the state-owned financial sector. In the former case it represented a 50% and in the latter 90% of total revenues. For most countries, privatization in energy represented a minimum of 20%, but in Mexico, Venezuela and Uruguay practically nothing was privatized in that sector (Lora, 2001).[6]

The strategy of privatization was also different among Latin American countries. Bolivia, Chile, México and Nicaragua privatized first the SOEs in the competitive sector (manufacturing and finance) and then, in a second phase, the utilities. Other countries like Argentina, Brazil, Colombia and Peru sold both types of companies simultaneously. In some countries (Bolivia, Argentina) the monopolistic structure of some sectors was maintained in order to maximize the revenues, even in sectors like telecoms where the technology allowed more competition.

The governments used different methodologies for selling SOEs to the private sector: total sale through open international options, public offering of shares, concession contracts, and direct transfers. The intensity in the use of each strategy differed across countries. Argentina, Chile, Mexico and Peru employed outright sales, while schemes of capitalization were used intensively in Bolivia (investors did not pay proceeds to the Treasury and committed themselves to sink capital in the companies). Concession contracts were mainly used in sanitation services, transport

[5] Although Brazil was one of the most important privatizers in the world, it retained state participation in electricity, the financial sector and oil (Anuatti-Neto et al, 2003). Colombia, Costa Rica and Uruguay were the only countries where telecoms were not privatized (Lora, 2001; Pombo and Ramírez, 2003). In Peru, which underwent one of the most intense divesture processes measured with respect to GDP, there has not been private involvement in transport, sanitation services and an important presence in agriculture is maintained by the state.

[6] Uruguay was the only country that did not privatize electricity, oil and telecoms. In general the rest has privatized al least one of these sectors (Lora, 2001). Additionally, Uruguay is the sole country where public opinion expressed their opposition to privatization of these companies in different referendums. No other country has shown this popular participation in the privatization debate. Nicaragua is a particular case; it was the only country in LA that to some extent represents a transition from a socialist economy to a market economy.

infrastructure and oil exploration and production, with rather unstable stories.[7] There were also several attempts to 'democratize' the property, inviting small investors and workers to participate in the equity of companies. That common trend was especially intense in Argentina, Brazil, Colombia, Chile and Peru. But the most important strategy of capitalization was followed in Bolivia, where, as said, no fiscal revenues from divesture were actually cashed by the state. However, as Anuatti-Neto et al. (2003) pointed out with respect to Brazil (and easily applicable to the rest of the countries) the governments neglected the opportunity to really diffuse ownership.

Eventually, there is a particularly significant international dimension. In every country privatization implies important inflows of foreign direct investment (FDI). Foreigners participated not only with capital but also taking over company operations. In the entire region, FDI flows changed – in terms of GDP – from 0.3% in 1989 to 6.9% in 1999. Until the late eighties, most Latin American countries posed several barriers to foreign participation in services or strategic companies and the same happened with the remission of utilities. Once these restrictions were eliminated the privatization process played a key role in the attraction of foreign capital. According to Lora (2001), the 36% of FDI was directed to privatization.

Overall, we can conclude that there is wide variability in national privatization patterns in Latin America, despite the broad common policy trend. This adds an interesting perspective to our research line. Had all Latin American countries followed an identical pattern of privatisation, potential variations in national attitudes towards privatisation would have been attributed to country specific compositional effects, without being able to identify which feature of the privatisation process may result most hateful to the majority of the population. On the contrary, since each country followed a specific pattern, we can investigate whether there are systematic effects on the popularity of privatisation reforms.

2.3 Empirical research on the redistribution effects of privatization

In order to analyse the impact of privatization in a cross-country perspective we take advantage of several papers that cover nearly all the main country-cases or give a cross-country evaluation of Latin America[8] as a whole. We focus here on the effects of access and price changes on income distribution and poverty .

While such changes have the greatest welfare impact, some studies suggest that privatization had positive effects on the poor through the budgetary and fiscal indirect effects, since in countries like Bolivia and Argentina privatized companies are now the main taxpayers (Chong and López de Silanes, 2003; Harris, 2003). Nellis (2003) argues that the budgetary effects are more important than sales proceeds and the regressive impact of underpricing. McKenzie and Mookherjee (2003) remark the positive impact of fiscal revenues on stabilization policies. This helped disinflation that

[7] Guasch (2001) shows that in LA in the last 15 years, 40% of the concession contracts were renegotiated just 2.2 years after.

[8] McKenzie and Mookherjee (2002) present the main results of Ennis y Pinto (2002) for Argentina, Barja, McKenzie and Urquiola (2002) for Bolivia, López Calva and Rosellón (2002) for México, and Freije and Rivas (2002) for Nicaragua. More recent papers are reviewed in Chong and López de Silanes (2003). They present seven studies for different countries of Latin America (Argentina (Galiani et al, 2003), Bolivia (Garrón et al, 2003), Brazil (Anuattí-Neto et al, 2003), Chile (Fischer et al, 2003), Colombia (Pombo y Ramírez, 2003), Mexico (La Porta and López de Silanes, 1999) and Peru (Torero, 2002)). The advantage of these studies is more comprehensive data sets. Harris (2003) and Megginson and Netter (2001) present worldwide evidence, including Latin America. Nellis et al (2004), is another general study that specifically tries to understand the gap among public perception and economic reality as described by empiric works. Other contributions are Chisari, Estache and Romero (1995), Estache, Gomez-Lobo and Leipziger (2000), Estache (2003), papers from WIDER and FLACSO (Azpiazu and Schorr, 2003).

may benefit the relatively poorest people. Additionally, these revenues could have been used by the state to help the poor to compensate the negative effects of privatizations. Chong and López de Silanes (2003) assert that Argentina, Bolivia, Mexico and Peru are good examples where SOEs generated such big losses that privatization revenues and tax-receipts were probably large enough to offset the social costs of job losses. On this line, see also Benitez, Chisari and Estache (2003) who use a general equilibrium model to show that privatization had progressive welfare effects.

Having said this, it is still likely that microeconomic impacts of privatization are more direct and important in welfare terms, at least in terms of perceptions. It is beyond dispute, for example, that profitability increased everywhere after divestiture: more than 40% in Peru, Mexico and Argentina, but less than 10% in Brazil, Chile and Colombia (BID, 2002). The main reason behind these improvements in profitability was operating efficiency gains (Chong and López de Silanes, 2003). There were social costs associated to such changes. In fact, downsizing was a key ingredient of companies restructuring (McKenzie and Mookherjee, 2003). Except for Chile, the employment in SOEs was reduced at sizeable rates: 55% in Peru, 40% in Argentina, 36% in México, 23% in Colombia and 10% in Brazil, but in the long term there was a partial recovery of direct and indirect employment in privatized sector (BID, 2002). However, the reduction in staff was not big enough to become recognisable in the official unemployment rate or to explain the generalized deterioration of labour market indicators in most of the LA countries (Chong and López de Silanes, 2003). The conclusions from most of these papers are similar and in accordance with worldwide evidence (Megginson and Netter, 2001; Harris, 2003): *privatization had positive impact regarding productivity, profitability, and fiscal revenues, but had some social costs in terms of employment.*

When we focus on current research on direct welfare changes for consumers, scholars' opinions are more divided and evidence more scattered. As mentioned in sub-section 2.1, the distributive impact of privatization depends on three main factors.[9] The first one is the **change in the access to services**; it is related to the expansion of networks and the introduction of technological innovations that facilitate access, as in the case of telecoms. The second factor is the **change in affordability**, which is related to the tariffs rebalancing, the temporal evolution of prices and the way this affects the pre-existing and new customers. **Change in quality** is important but difficult to measure, and we are not aware of comparable empirical research in this area across Latin American countries.

Regarding the question of access to public services, namely electricity, telephone and water, McKenzie and Mookherje (2003) establish that private participation contributed to an expansion of these services. Increased investment in the network could have contributed more intensively to the access of poor people to electricity. Their data source, however, do not allow for direct information on connections, in fact what they observe is increased expenditure or use: this do not allow for changes from illegal to legal connections. In the case of telephone services, given the lower earlier coverage, the network expansion benefited mainly the upper and middle classes. Ugaz and Price (2003) confirm this tendency of relative improvement of poor customer's access. However, the deficit of connections continues to be high especially for sanitation services in urban areas and for all services in rural areas. According to Chisari, et al. (2001) the Latin America experience shows that the poor are the last in receiving the benefits of higher access generated by privatizations. For instance, the rural poor are normally omitted from the reform because of the low profitability of these areas. Rural regions in Bolivia, where most people are poor, are an example of this contrast with urban areas (Barja and Urquiola, 2001).

[9] The fourth factor we mentioned at the beginning of this section is the indirect impact on prices of other industries. This may be important but difficult to study and consumers are unlikely to have information on such general equilibrium effects. See Chisari, Estache and Romero (1995) for an earlier attempt to consider this impacts, and more recently Benitez, Chisari and Estache (2003).

Evidence about the impact of privatization on utilities tariffs is mixed. It depends, among other things, on the sector and on the country, the technological progress in the industry, how far prices were below cost-covering levels previous to privatization and, eventually, the regulatory framework. An example of critical assessment for the Argentinean case is the work of Azpiazu and Schorr (2003). These authors criticize the normative framework in which privatized companies operated. They consider the high level of prices at the beginning of private operations, the "regulatory delay" to translate the higher productivity gains into lower prices, the indexation of the domestic tariffs according to foreign inflation and the systematic practice of renegotiating contracts promoted by companies and validated by the government. They argue that the way in which the privatization process took place tended to create and preserve non-competitive markets.

According to McKenzie and Mookherje (2003) the evolution of tariffs after privatization did not have a clear trend. They examine ten countries in Latin America and find five cases where they increase and five where they fall. Particularly, these country studies seem very sensitive to the fact that some government increased tariff before privatization. On the other hand, Ugaz (2002) remarks that privatization implied new tariff structures which was more cost-reflective. For the three countries she considers, she finds the same pattern of rebalancing: an increase in fixed charges and a decrease in variable unit prices. The magnitude of this relative change in tariff composition depends on both the previous degree of distortion and cross subsidies under public management. As a result of this tariff rebalancing, the pre-existing low-income customers and especially the poor were penalized with substantive losses in the consumer's surplus. People in the bottom deciles of the income distribution suffer more intensively in absolute and relative (to their income) terms (Ugaz and Price, 2003).

Residential customers were more exposed to tariff increases than the commercial and industrial ones, particularly in countries where there were cross subsidies. In several cases, fixed charges represent a big portion with respect to the variable tariff component, such that the affordability problem for low users is very sensitive to connection charges (Chisari et al., 2001). In Peru, Chile and Argentina there was an increase in local calls tariffs that affected poor people more (Paredes, 2001; Torero and Pascó-Font, 2001). In Bolivia, the rebalancing in electricity was harmful for low-income household (Barja and Urquiola (2001). Anuatti-Netto et al (2003) show the same pattern for the Brazilian case in electricity and telecom. They remark the increase in minimum monthly fees for access to a line as a key redistributive issue.

A paper that is close in spirit to ours is Delfino and Casarin (2003), which analyze the change in the consumer surplus in the Argentinean case. The authors found that low-income households were particularly damaged because of the increases in fixed charges in the utilities. They consider the distributional impact associated to the privatization of telecoms, gas, water and sewerage in the Gran Buenos Aires area, comprising one third of the country's population. The paper uses an official household expenditures survey data-set, with monthly data collected around 1996-1997 for 5000 households. The data-set includes information on income and expenditures, demographic and personal characteristics, availability and use of utility networks. Based on this information, they calculate a simple Marshallian surplus change, following Waddams Price and Hancock (1998), the ratio of these welfare changes to income by quintile, and sensitivity to various price elasticity values. We report some of their results for the most plausible elasticity assumptions in Table 2. The table shows that for all four utilities together, the yearly surplus change was of 112 constant USD for the 5th income quintile of consumers, but it was a net loss of 51 USD for the poorest quintile. According to our own recalculation, this is equivalent to a gain of 0,33 percent on annual income for the rich and a quite substantial loss of 1,3 per cent for the poor.[10] As the table shows, the

[10] Delfino and Casarin report an even higher loss, in the order of 2%, in their comment to these data.

distribution of welfare changes is strictly regressive in pesos/dollars terms. Relative to income the impact is even worse. Moreover, in terms of perceptions, while the net benefit for the two upper quintiles is probably negligible, and for the middle income group the impact is neutral (but for gas and water there are net losses), the negative impact of tariff changes cannot go unnoticed by the two bottom quintiles. For these relatively poor consumers, expenditure in utilities claims a high-income share, hence any price change is important. This not negligible reshuffle of welfare perhaps helps to explain why we find that the highest disagreement with privatization in our data is in Argentina.

[insert table 2 about here]

In a general overview Ugaz and Waddams Price (2003) confirm that in LA utilities' tariffs increased very frequently and this affected the poor more, even if increased access data may suggest a more positive evaluation. The evidence, according to these authors, raises the question of the distributive impact of privatization on utilities and the effectiveness of regulation to protect poor consumers from monopoly power in most countries in Latin America. In fact, Kessides (2004) remarks that while overall privatization and liberalization have been beneficial to consumers in developing countries, policy makers and regulators too often did not find a balanced price structure in terms of the trade off between efficiency and equity objectives. We turn our to our own empirical approach.

3. Empirical analysis

3.1 Data

Our data derive from LATINOBAROMETRO (www.latinobarometro.org) an annual public opinion survey carried out in 17 Latin American countries. The survey started in 8 countries in the region in 1995 and extended to 17 countries in 1996. It is a private, non-profit initiative to be used by the social and political sectors of the region. The survey we use was conducted during April and May of 2002 and contained information on social characteristics of the respondent, and on his/her policy attitudes. Among these attitudes, the survey asked whether "The privatization of state companies has been beneficial to the country?".[11]

It is important to pay attention to the wording of the question. The interviewees were not asked whether the privatization was beneficial to them, but the focus was on the collectivity. Using the economists' jargon, one could rephrase the question posed by the survey as "did the privatization raise the social welfare ?". Even supposing that a man in the street may understand such a question, we could not expect a unanimous answer the question, because individuals not necessarily share the same view about social welfare and the same information. In addition, my judgment about social welfare may be influenced by my relative position in income distribution.

This may explain why there is sizeable dispersion in public opinion with respect to the potential benefits of privatization, as reported in table 1. On average, two third of the population sample expressed against a beneficial role of privatization, and this opinion may be affected by several characteristics (like age, gender, education, income, wealth, family composition). If this were the case, since these features are approximately similar across countries we would have expected an analogous distribution when considering the attitude within each country. On the contrary, in table 3 we notice that there are wide variations across countries: the strong disagreement scores as high as

[11] Panizza U. and M.Yañez 2003 have analysed a larger data-set from Latinbarometro including several survey years, but excluding the survey conducted in 2002, that we are analysing in this paper. They follow a different line of research, since they are interested in investigating whether the attitude against privatisation could be accounted for a left-bias orientation of the respondents, and/or an increase in political activism. Our results are consistent with theirs in finding that favourable economic conditions reduce political opposition to privatisation.

45.1% in Argentina and as low as 12.2% in Peru, as well as the support hits the highest in Brazil (16.5%) and its lowest again in Argentina (1.7%). Notice that the percentage of interviewees without a specific opinion varies significantly across countries, indicating that the issue of privatization is differently perceived.[12]

[insert table 3 about here]

Thus, the survey opinion about privatization is the outcome of both individual characteristics and country experiences. We can control for the former using available information from the survey, while for the latter we resort to aggregate evidence on the actual experience of privatization. By so doing, we gain insight on two issues:
i) identify the population subgroup that is more fiercely opposing the privatization of state enterprise. As long as their judgment is dependent on their social position, these people are more likely to be the potential damaged from this experience.
ii) classify the country experiences according to their impact on social opinion, ascertaining which are the features that create social discontent.

As far as individual information available, we possess information about gender, age, marital status, educational attainment, employment condition, ownership of durables goods (colour TV, refrigerator, housing, computer, washing machine, telephone, car, second home, drinking water, hot water, sewage system) and self-assessed socio-economic status. Most of the information is summarized in this variable, as it can be grasped by table 4: a "very bad" socio-economic condition is typically associated with lack of proper housing (in the 42.2% of cases), drinking water at home (31.7% of cases), not to speak of car (93.4%) or computer (97.1%). At the opposite extreme, a "very good" condition is associated with ownership of colour TV set (95.7%), refrigerator (91.9%), drinking water (94.0%). Table A.2 in the Appendix analyses the correlation between the self-assessed socio-economic status and its potential determinants. Rather surprisingly, the perception of deprivation is highest in the absence of electric/electronic appliances (TV, refrigerator, washing machine, telephone, with the highest coefficient on computers!) and car; more basic services related to sanitation (water, sewage) score lower in the ranking. Even when we control for education of the interviewees (second and third columns) these perceptions are retained. Part of this finding can be explained by the characteristics of the non-respondents, who are often the very poor. The socio-economic status improves with educational attainment, whereas it declines for unemployed and salaried in the private sector.

[insert table 4 about here]

3.2 Determinants of attitudes

We now move to the analysis of individual determinants of the attitude towards privatization. We have coded our dependent variable (ATTITUDE) by assigning zero value to uncertain respondents, negative values to those expressing disagreement towards privatization (-2 'strongly disagree', -1 'somewhat disagree'), and symmetric positive values for the supporters of privatization. Table 5 presents some descriptive statistics of our variable set, whereas in table A.3 in the Appendix the same variables are presented by country. Descriptive statistics indicate that half of the sample is made of women, with average age around 40 (youngest samples in Nicaragua, Colombia and Paraguay). The respondents are head of family in half of cases. It is interesting to note that a large fraction of the population has enrolled but not completed different levels of educational attainment.

[12] In table A.1 in the Appendix we report the estimates of the probability of non-reporting an opinion in the survey, either by not responding or by a 'do not know' response. We find that women, young people, without formal education and in a bad or very bad self-assessed socio-economic condition, are most likely to not report an opinion.

Higher levels of education are recorded in Argentina, Chile and Peru. The socio-economic level indicates the worst situations in Bolivia, Peru, Nicaragua and El Salvador. By taking into account missing observations on some variables (mainly on employment conditions and/or marital status), we have 17.900 observations available.

[insert table 5 about here]

Table 6 reports our findings, using two alternative estimators, least square (first and second column) and ordered probit (third and fourth). Results are substantially identical in terms of sign and significance, and therefore we will comment least square estimates only. Among demographic characteristics, age is the most significant, exhibiting a U-shaped pattern, with a computed age of minimum support equal to 61 (corresponding to the 89th percentile in age distribution). When looking at socio-economic condition, we notice that support declines with the worsening of the condition, but in a non-linear way, since those expressing against a beneficial effect of privatization are those in a "bad" economic condition, while those in a "very bad" condition seem least affected. However coefficient estimates are less significant for the latter, and there is a high probability of non-respondents and 'do-not-know' respondents among them. A similar non-linear pattern can be found with respect to education, which is measured in two alternative ways (using years of education in first and third columns, using educational attainment dummies in second and fourth columns): minimum support for privatization emerges from respondents with some university education (corresponding to 10.6 years of education, from first column).[13]

Employment status comes out statistically insignificant, even when taking into account the distinction between salaried in private and/or in public firms (since the latter were supposedly the most hit by employment reduction following the privatization wave); only housewives seem supportive of privatization. Since their statistical significance declines when education is better controlled, it is possible that even in the last case we are facing case of spurious correlations. Similarly, marital status is not particularly significant, except the case of single member families. In all regressions, we maintained as controls country fixed effect (still retain significance, indicating that something is missing), ethnicity (never significant), city size (some slight effect of living in the capital) and month of interview (April or May: in April significant less opposition).

[insert table 6 about here]

We have explored the interaction between educational attainment and socio-economic level. In figure 1 we show the estimated impact of the interaction dummies (relative to the case of an illiterate in very good conditions, the excluded case): **it can be seen that those who claim that privatization of state enterprises have not been beneficial to the country are educated individuals in bad conditions**. While in the case of illiterate persons we could always think of wrong perception, this conjecture is weakened when considering people who have enrolled and possibly completed university. It is also rather surprising that even among people in good economic condition, we still record a sufficiently low level of support.

[insert figure **1** about here]

[13] Panizza U. and M.Yañez 2003 claim that "...wealth is only weakly correlated with support for economic integration and education is weakly correlated with support for privatization and the free market in general". However, despite they are using a dichotomous dependent variable and different survey years, even in their coefficient it is possible to recognise a U-shaped relationship between education and support to privatisation (table 4, column 3 in their paper).

We have also exploited information about the ownership of durables to progress in the identification of people that hold the view that privatization of state enterprise was detrimental to the country. By grouping and summing the indicators of absence of BASIC goods (items are housing, drinking water, hot water and sewage), ELECTRIC goods (colour TV set, refrigerator, washing machine and telephone) and LUXURY goods (computer, car and second home), we can identify the extent of deprivation with respect to durables. Overall, only the 2.2% of the sample records a simultaneously zero value on all three groups of durables.

If we interact these measures of deprivation with grouped educational attainments and re-estimate a model analogous to those reported in table 6, we obtain the picture reported in figure 2: the heaviest judgment comes from either people who need basic durables (like water or housing) or lack of either car, computer or holiday house. In both cases, the negative opinion increases with education. Thus we infer that there is an element of real need and contemporaneously an element of social envy that underlie the judgment about privatization. This matches with the estimates shown in figure 1: respondents in very bad conditions (i.e. lacking of basic durables) with university education probably suffer more deeply from deprivation, since they do not achieve a social role associated with their level of education. They have been unable to take advantage of potential benefits from privatization, since they do not have electric appliances, they do not travel and they cannot afford a telephone bill. Since privatization did not offer an improved economic prospect, they have a negative opinion about it. On the other side, there are a group that we would term as "middle class", who enjoy an average socio-economic condition, even if they still do not have access to luxury goods like a car, a computer or even a second house. They probably took advantage of different prices brought in by privatization, but they could not participate to the capital gain associated to most privatization. In their perception, privatization was harmful to the country because instead of redistributing wealth to the rest of the country, retained the control in the hands of the "happy few".

[insert figure 2 about here]

This is the picture that emerges using information available at individual level. However countries differ in their specific experience, as witnessed by the fact that, even when using individual controls, country fixed effect still retain significance for all countries, which implies that country specificity has still to be taken into account (see table 8). For this reason, in the sequel we introduce additional country controls that play the role of country fixed effect.

[insert tables 7 and 8 about here]

3.3 Country controls

We now introduce information on country-specific experiences of privatization. These data come from aggregating existing information on around 340 events of privatization occurred in Latin American countries.[14] From the timing of the process we were able to introduce information about the dynamics of privatization: number of events, initial and final year, duration (in months), frequency (obtained as result of number of events/duration). We also computed the economic impact of privatization (proxied by the across year average of the ratio between total proceedings from privatization and gross domestic product) as well as the share of proceedings obtained from

[14] This data-set draws from Fondazione ENI Enrico Mattei elaborations on Securities Data Corporations data, kindly made available to us by Bernardo Bortolotti (FEEM and University of Turin). Unfortunately, there were no data with respect to Nicaragua and Costa-Rica, and therefore we are forced to leave these countries out of the sample henceforth.

privatizing public utilities (electricity, gas, water and sanitation)[15] in total proceedings from privatization (here again taking the averages across years). Using these variables, we can test whether effectively the hostility towards privatization is heavier in countries where people perceived it from basic items like electricity or water supplies. In addition we also add country macroeconomic controls: the growth rate of gross domestic product experienced by the country just immediately before the survey was conducted (covering the period 1999-2002), a measure of the role of government in the economy (proxied by the general government final consumption expenditure as percentage of the GDP), a measure of income inequality (the most recent Gini index on income distribution available), a measure of deprivation (the illiteracy rate in the adult population, which typically correlates with other measures like the child mortality rate).[16] Table 9 presents evidence on these variables. Especially from this figure, it looks noticeable that the adversarial attitude toward privatization declines with the increase in the growth rate of GDP.[17]

[insert table 9 about here]

We present ordered probit estimates, weighed on sample weights and clustered errors by country in table 10. The first column replicates previous results, corresponding to the fourth column of table 5 with the exclusion of two countries (Costarica and Nicaragua) and the omission of country fixed effect. Opposition to privatization is increasing with educational attainment and with worsening of the socio-economic status, despite some non-linearities (though non statistically significant) of these two effects. In the second column of table 10 we introduce macro-economic controls, recording greater opposition in more unequal countries and/or where the public sector is larger (as proxied by the share of public expenditure on GDP). The third column introduces information about the features of the privatization process, without any significant improvement in statistical performance. However, when we combine the elements of second and third column in fourth column, we get an interesting picture. While educational attainment loses explanatory power, the socio-economic condition still retains previous explanatory power (support to privatization declines with the decline of individual socio-economic status). But we now observe that opposition increases with more unequal and/or more illiterate is a country, whereas opposition declines when a country has recently experienced output growth. Evidence of persistent attitudes can explain the negative correlation with public expenditure: populations who were accustomed to profound presence of the state in the economy are more reactive to the process of privatizing state enterprises.

As far as the nature of the process, **opposition is also higher when privatization ended more recently and/or lasted more months and/or was less frequent**. Some negative effect on support is recorded when the share of public utilities in proceedings from privatization was high and/or the revenues were low. Finally the **support is lower when the share of public utilities among privatized activities is higher**, but this effect is attenuated in more inegalitarian countries (interaction term).

Overall, respondents seem quite short-memory: they tend to react to privatization when it is a more recent and/or more unusual experience. Conversely, when privatizations are conducted in few months, selling several assets but leaving untouched the utilities, and a government is lucky enough to experience high growth, the opposition is limited. Thus, social opposition to privatization seem to arise from two sets of factors: on the individual side, people with medium to high education and a low economic status perceive a damage coming up from privatization, possibly because they suffer a reduction in accessing or using durable goods; on the aggregate side, opposition grows in

[15] Defined by SIC codes 4911-4922-4923-4924-4941-4959.

[16] All these control variables are obtained from the World Tables, published by the World Bank.

[17] Similar effects have been noticed in Panizza U. and M.Yañez 2003, where they use the output gap as cyclical indicator.

countries that experienced a limited amount of recent episodes of privatization, possibly involving the public utility sector; this impact is exacerbated by low growth and high income inequality (or deprivation). The interaction between individual factors and aggregate context is analysed in the final column, where we interact individual measures for socio-economic status and relative deprivation with the share of public utilities: we find that the opposition recorded in countries where a high share of public utilities was involved in the process of privatization is more intense the worse is the individual situation of the respondent (in terms of both socio-economic status or in terms of relative deprivation of luxury commodities).

[insert table 10 about here]

4. **Concluding remarks**

This paper has offered new evidence on privatization discontent in Latin America. Since privatization is basically a change of ownership from taxpayers to private shareholders, it may redistribute well-being among taxpayers, consumers, shareholders and workers. As such, it has to be considered a socially sensitive policy. Given the absence of suitable data at cross-country level, we turn to the assessment of individual agents. They offer, in a very crude and perhaps biased way, their own individual assessment of the change in the social welfare. We take this information seriously, not as a substitute but as a complement to more traditional applied welfare economics evaluation, and we try to distil lessons from what respondents say, exploiting three data sets:

1. a large survey comprising around 18500 individuals, expressing their opinion about the consequences of privatisation at country level; for each interviewee we have information about several individual characteristics (education, occupation, durable possession, residence, language spoken) which we can control for.
2. a database on around 430 divestiture events in the countries we study
3. selected macroeconomic variables.

We combine subjective evidence (attitude toward privatisation) with more objective information at country level (macroeconomic controls, features of privatisation within the country). We find systematic and consistent effects of individual position in the income/wealth distribution on the expressed attitude towards privatisation: educated respondents in bad economic condition seem to suffer the consequences of privatisation more than people in other economic condition. We interpret this evidence as supporting the claim that privatisation has a redistributive impact against the low-middle classes in Latin America, who where not rich enough to take advantage of the event as asset owners, but were sufficiently well-off to be permanent user of public utilities.

Given the effects of country specific features of privatisation, we can summarize our findings in a "recipe" for a successful privatization. First of all, a starting pre-condition is a limited amount of income inequality, which restrains the amount of people suffering from reduced access/higher cost of public utilities. Second, get people acquainted with privatization as much as possible, following a gradual approach (better privatizing in chunks than in a single event). Third, choose an expansionary phase, where output growth compensates for other adverse shocks. Fourth, delay the privatization of public utilities, especially where the deprivation of the educated middle classes make the perception of the consequences of privatization more acute. Fifth, and last, hope that the proceedings from privatization exert a positive impact in state revenues (as proxied by the ratio to GDP).

Conversely, a recipe for troubles and discontent, includes a large and quick divestiture plan, with a high proportion of socially sensitive public services, in a country with high income inequality and suffering adverse macroeconomic shocks, with relatively high educational attainment levels in the population. Our perception is that in Latin America these ingredients were often present in many countries, with Argentina in the forefront. These indications should contribute to a reconsideration of the policy agenda of privatization, liberalization and tariff regulation or other forms of compensation aimed at the poor.

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Table 1 – "Privatization has been beneficial to the country" – Latin America 2002

Item	*cases*	*%*	*cases*	*%*
Strongly agree	1,573	8.49	1,573	9.37
Somewhat agree	3,781	20.41	3,781	22.52
Somewhat disagree	6,993	37.76	6,993	41.65
Strongly disagree	4,441	23.98	4,441	26.45
Do not know	1,271	6.86		
Non respondent	463	2.50		
Total	*18,522*	*100.00*	*16,788*	*100.00*

Table 2 – Changes in consumer surplus - Argentina - USD (1999)

Income group	Telecoms		Electricity		Gas		Water and sewerage		Total		
	DS	DS/Y	DS	DS/Y	DS	DS/Y	DS	DS/Y	DS	DS/Y	E/Y
Average	70.6	0.33	29.2	0.12	-22.8	-0.16	-48.6	-0.10	28.4	0.18	7.6
1st quintile(poorest)	9.6	0.27	-0.4	-0.06	-15.2	-0.35	-45.8	-1.85	-51.8	-1.27	16.7
2nd quintile	30.1	0.31	14.6	0.15	-18.5	-0.20	-47.2	-0.97	-21	-0.27	9.6
3rd quintile	54.8	0.39	26.9	0.19	-21.6	-0.15	-48.1	-0.66	12	0.00	7.0
4th quintile	75.5	0.35	39.6	0.19	-24.2	-0.11	-48.3	-0.44	42.3	0.25	5.3
5th quintile(richest)	131.5	0.30	61.5	0.15	-29.5	-0.07	-51.15	-0.22	112	0.33	3.4

Source: adapted from Delfino and Casarin (2003,tab. 7.2, p.161 and tab 7.3, p. 165) and our own calculations (total impact). Tariffs at December 1999, USD, before taxes, consumption data 1996-97 from Instituto Nacional de Estadistica y Censos, Statistical yearbook, Buenos Aires 2000. $DS = E_1 [(P_1-P_2)/P_1] [1+0,5\ \varepsilon [(P_1-P_2)/P_1]]$, where E_1 is initial expenditure level, E_2 final expenditure level, Y adjusted household income, ε price elasticity (assumed to be –1 for telecoms, -0,5 for electricity and gas, and 0 for water and sewerage in the reference scenario).

Table 3 – Attitude towards privatization by country (%) – Latin America 2002

country	*Strongly agree*	*Somewhat agree*	*Somewhat disagree*	*Strongly disagree*	*Do not know*	*number of observations*	*% of observations*
Argentina	1.75	11.94	38.81	45.16	2.34	1,198	6.63
Bolivia	4.64	19.38	53.91	18.16	3.91	1,228	6.80
Brazil	16.50	22.23	14.14	38.22	8.91	976	5.40
Colombia	4.34	18.39	38.77	25.85	12.66	1,153	6.38
Costa Rica	7.76	24.62	40.35	13.99	13.28	979	5.42
Chile	4.56	21.03	45.61	22.89	5.91	1,184	6.56
Ecuador	12.98	32.44	31.57	18.43	4.58	1,156	6.40
El Salvador	10.64	27.40	42.68	13.07	6.22	949	5.25
Guatemala	9.62	19.04	33.88	31.01	6.45	977	5.41
Honduras	15.03	21.02	38.17	19.70	6.09	985	5.45
Mexico	4.98	23.88	43.12	24.71	3.32	1,206	6.68
Nicaragua	16.53	14.72	35.18	27.02	6.55	992	5.49
Panama	16.14	15.21	33.20	27.75	7.71	973	5.39
Paraguay	2.68	15.89	48.49	26.42	6.52	598	3.31
Peru	5.04	27.88	45.59	12.26	9.24	1,191	6.60
Uruguay	3.67	11.94	37.34	34.78	12.28	1,173	6.50
Venezuela	14.11	26.64	35.58	18.93	4.73	1,141	6.32
Total	*8.71*	20.94	*38.72*	*24.59*	*7.04*	18,059	100.00

Table 4 – Socio-economic status and deprivation (%) – Latin America 2002

Lack of:	*socio economic level*					*sample average*
	Very good	Good	Average	Bad	Very bad	
color tv set	4.26	3.82	12.79	29.11	48.48	*13.36*
refrigerator/ice box/freezer	8.01	8.29	23.62	44.51	61.92	*22.41*
housing	16.58	20.76	29.72	35.12	42.24	*27.15*
computer	49.83	73.40	89.89	96.89	97.12	*82.73*
washing machine	31.10	42.55	64.49	75.39	84.85	*57.29*
telephone	19.07	28.87	56.19	72.63	84.45	*48.18*
car	37.72	60.74	81.18	90.46	93.41	*73.05*
second home for holiday	75.89	86.49	92.39	94.50	96.70	*89.67*
drink water	5.93	6.27	9.81	17.22	31.75	*10.48*
hot water	38.34	48.98	65.48	74.45	80.21	*60.00*
sewage system	15.14	16.92	28.46	43.50	65.74	*27.55*
How do you cover your health expenses?						
Private insurance	43.00	29.14	15.88	10.70	7.53	*21.23*
Public insurance	38.64	46.93	48.30	47.63	47.31	*46.90*
No insurance	18.36	23.93	35.82	41.67	45.16	*31.87*
Sample average	*7.97*	*30.97*	*39.59*	*17.22*	*4.25*	*100.00*

Table 5 – Descriptive statistics of individual variables (sample weights) – Latin America 2002

Variable	*Obs*	*Mean*	*Std.Dev.*	*Min*	*Max*
attitude	18045	-0.501	1.292	-2	2
female	18045	0.516	0.499	0	1
age	18045	38.91	16.21	16	99
head of household	18045	0.502	0.500	0	1
years of education	18045	7.814	4.41	0	16
socio-economic status	18045	0.180	0.962	-2	2

respondent education	*Freq.*	*Percent*	*Cum.*
Illiterate	1,722	9.54	9.54
Uncompleted primary	3,811	21.12	30.67
Completed primary	3,645	20.20	50.87
Uncompleted secondary	3,269	18.12	68.99
Completed secondary	3,488	19.33	88.32
Uncompleted university	1,180	6.54	94.87
Complete University	926	5.13	100.00
Total	*18,045*	*100.00*	

Respondent actual occupation	*Freq.*	*Percent*	*Cum.*
Independent/selfemployed	5,485	30.40	30.40
Salary earner in public enterprise	1,461	8.10	38.50
Salary earner in private enterprise	2,825	15.66	54.16
Temporarily out of work	1,640	9.09	63.25
Retired	1,270	7.04	70.29
In charge of household	3,973	22.02	92.31
Student	1,387	7.69	100.00
Total	*18,045*	*100.00*	

Table 6 – Determinants of support for privatization (sample weights) – Latin America 2002
(heteroskedasticity robust standard errors - t-statistics in parentheses)

Model :	ols	ols	ord.prob.	ord.prob.
# obs :	17900	17900	17900	17900
Depvar:	attitude	attitude	attitude	attitude
age	-0.013	-0.013	-0.013	-0.013
	(-3.18)	(-3.04)	(-3.41)	(-3.29)
age²	0.000	0.000	0.000	0.000
	(2.33)	(2.22)	(2.61)	(2.52)
sei good	-0.180	-0.179	-0.156	-0.156
	(-4.10)	(-4.10)	(-4.20)	(-4.21)
sei average	-0.260	-0.259	-0.212	-0.211
	(-5.94)	(-5.89)	(-5.68)	(-5.65)
sei bad	-0.294	-0.294	-0.253	-0.252
	(-5.84)	(-5.82)	(-5.82)	(-5.81)
sei very bad	-0.136	-0.136	-0.115	-0.115
	(-1.91)	(-1.91)	(-1.94)	(-1.95)
educt years	-0.034		-0.028	
	(-3.18)		(-3.00)	
educt years²	0.002		0.001	
	(2.59)		(2.32)	
uncomplt primary		-0.143		-0.115
		(-2.58)		(-2.41)
completd primary		-0.164		-0.138
		(-2.88)		(-2.82)
uncomplt secondary		-0.197		-0.170
		(-3.49)		(-3.47)
completd secondary		-0.170		-0.143
		(-2.99)		(-2.91)
uncomplt univrst		-0.237		-0.209
		(-3.57)		(-3.62)
completd univrst		-0.175		-0.158
		(-2.47)		(-2.61)
head family	0.052	0.052	0.053	0.053
	(1.47)	(1.48)	(1.74)	(1.75)
single	0.132	0.132	0.101	0.101
	(4.44)	(4.44)	(3.92)	(3.92)
divorced	0.044	0.043	0.034	0.033
	(1.04)	(1.01)	(0.92)	(0.89)
self employed	0.102	0.086	0.071	0.056
	(1.93)	(1.58)	(1.59)	(1.23)

public employee	0.011	-0.007	0.001	-0.016
	(0.18)	(-0.12)	(0.01)	(-0.30)
private employee	0.051	0.033	0.030	0.014
	(0.93)	(0.59)	(0.65)	(0.30)
unemployed	0.068	0.050	0.052	0.036
	(1.19)	(0.87)	(1.09)	(0.74)
retired	0.138	0.123	0.106	0.092
	(1.94)	(1.70)	(1.76)	(1.50)
housewife	0.166	0.149	0.124	0.109
	(3.02)	(2.65)	(2.68)	(2.29)
Gender	Yes	Yes	Yes	Yes
Ethnicity	Yes	Yes	Yes	Yes
CitySize	Yes	Yes	Yes	Yes
Countries	Yes	Yes	Yes	Yes
MonthInterv	Yes	Yes	Yes	Yes
R^2	0.175	0.175	0.019	0.019

Table 7 – Cumulative deprivation (sample weights) – Latin America 2002

	basic durables		*electric durables*		*luxury durables*	
# of absences	values	%	values	%	values	%
0	4,510	25.04	5,494	30.04	537	2.96
1	6,509	36.14	4,417	24.15	1,821	10.04
2	4,397	24.41	3,947	21.59	3,787	20.88
3	2,081	11.55	2,394	13.10	11,997	66.12
4	513	2.85	2,033	11.12		

Table 8 – Country fixed effect in support for privatization – Latin America 2002
weighed ols with clustered errors on countries

	no controls	*p-values*	*individual controls (2nd column)*	*p-values*
Argentina	-.9623434	*0.000*	-.9451854	*0.000*
Bolivia	-.4093696	*0.000*	-.3481196	*0.000*
Brazil	-.169997	*0.000*	-.5210051	*0.005*
Colombia	-.4619835	*0.000*	-.465908	*0.000*
CostaRica	-.0984337	*0.000*	-.1701037	*0.001*
Chile	-.4684888	*0.000*	-.4596771	*0.000*
Ecuador	reference case		reference case	
ElSalvador	-.0028664	*0.000*	-.0832958	*0.206*
Guatemala	-.4020342	*0.000*	-.4289499	*0.000*
Honduras	-.1277207	*0.000*	-.2320356	*0.000*
Mexico	-.4360243	*0.000*	-.4568175	*0.000*
Nicaragua	-.2308279	*0.000*	-.3102699	*0.000*
Panama	-.2286408	*0.000*	-.2919662	*0.000*
Paraguay	-.5980609	*0.000*	-.491628	*0.000*
Peru	-.1283017	*0.000*	-.0961989	*0.086*
Uruguay	-.6225714	*0.000*	-.567991	*0.000*
Venezuela	.005321	*0.000*	-.0235062	*0.535*

Table 9 – Descriptive statistics of country features of privatization – Latin America 2002

country	*attitude (mean)*	*number of event per month (FREQUENCY)*	*DURATION (number of months)*	*share of public utilities (SHUTI)*	*proceedings over GDP (INCIDENCE)*	*GROWTH rate of GDP (last 3 yrs)*	*GINI index on income inequality*	*ILLITERACY rate in adult population*	*share of public expendt over GDP (PUBEXP)*
Argentina	-1.14	0.72	107.00	0.59	0.84	-22.40	47.59	3.17	13.79
Bolivia	-0.62	0.16	89.00	0.08	1.79	-2.48	44.68	14.49	15.69
Brazil	-0.35	0.53	154.00	0.41	0.40	-4.80	60.70	14.76	18.20
Colombia	-0.63	0.18	97.00	0.98	0.45	-1.05	57.10	8.30	19.00
Chile	-0.61	0.26	99.00	0.76	0.39	-4.03	56.65	4.19	12.18
Ecuador	-0.10	1.00	1.00	0.00	0.02	-28.35	43.70	8.39	9.50
ElSalvador	-0.20	0.88	8.00	0.77	0.56	4.67	52.17	21.26	10.17
Guatemala	-0.58	0.19	21.00	0.79	0.59	8.31	55.80	31.36	6.64
Honduras	-0.26	1.00	1.00	0.00	0.00	6.76	56.30	25.39	12.71
Mexico	-0.59	0.44	159.00	0.00	0.33	10.14	53.11	8.59	10.98
Panama	-0.41	0.10	97.00	0.96	0.79	2.59	48.50	8.11	14.88
Paraguay	-0.80	0.05	38.00	0.00	0.05	-10.96	57.70	6.72	10.26
Peru	-0.32	0.58	119.00	0.54	0.79	3.33	46.20	10.11	11.17
Uruguay	-0.88	0.03	88.00	0.00	0.02	-15.05	42.30	2.26	12.99
Venezuela	-0.19	0.46	98.00	0.04	0.68	-1.27	49.53	7.42	7.04
Total	-0.50	0.45	81.28	0.40	0.54	-3.77	51.02	11.31	12.42

Table 10 –Determinants of support for privatization (sample weights) – Latin America 2002
(weighed ordered probit model – clustered errors by country – p-value in italics)

	Coeff.	*p-value*	Coeff.	*p-value*	Coeff.	*p-value*	Coeff.	*p-value*	Coeff.	*p-value*
Uncompleted primary	-0.083	*0.20*	-0.065	*0.29*	-0.068	*0.31*	-0.064	*0.31*	-0.045	*0.49*
Completed primary	-0.190	*0.02*	-0.159	*0.04*	-0.168	*0.05*	-0.106	*0.18*	-0.088	*0.29*
Uncompleted secondary	-0.237	*0.00*	-0.196	*0.00*	-0.206	*0.00*	-0.155	*0.02*	-0.131	*0.06*
Completed secondary	-0.142	*0.04*	-0.130	*0.04*	-0.117	*0.08*	-0.085	*0.22*	-0.055	*0.44*
Uncompleted tertiary	-0.205	*0.05*	-0.190	*0.01*	-0.184	*0.04*	-0.142	*0.08*	-0.125	*0.14*
Completed tertiary	-0.143	*0.10*	-0.136	*0.10*	-0.115	*0.19*	-0.115	*0.15*	-0.102	*0.27*
Socio-economic index=good	-0.135	*0.03*	-0.132	*0.03*	-0.134	*0.02*	-0.139	*0.01*	-0.146	*0.00*
Socio-economic index=average	-0.180	*0.02*	-0.188	*0.01*	-0.180	*0.01*	-0.191	*0.00*	-0.226	*0.00*
Socio-economic index=bad	-0.224	*0.02*	-0.239	*0.00*	-0.220	*0.01*	-0.239	*0.00*	-0.310	*0.00*
Socio-economic index=very bad	-0.127	*0.27*	-0.150	*0.11*	-0.107	*0.30*	-0.145	*0.11*	-0.264	*0.02*
Growth rate in GDP 1998-2000			0.007	*0.34*			0.033	*0.00*	0.031	*0.00*
Gini index on income inequality			-0.011	*0.08*			-0.031	*0.00*	-0.029	*0.00*
Illiteracy rate			0.003	*0.72*			-0.034	*0.00*	-0.033	*0.00*
Public expenditure over GDP			-0.023	*0.03*			-0.020	*0.00*	-0.019	*0.00*
privatization events per month					0.104	*0.57*	0.243	*0.00*	0.265	*0.00*
Duration (month)					-0.002	*0.16*	-0.004	*0.00*	-0.004	*0.00*
Proceedings form priv. over GDP					0.047	*0.47*	0.097	*0.05*	0.114	*0.02*
Date of last privatization					0.017	*0.53*	-0.039	*0.02*	-0.039	*0.04*
Share of public utilities					-0.196	*0.88*	-1.944	*0.00*	-1.915	*0.00*
Share public utilities × Gini					0.002	*0.94*	0.037	*0.00*	0.041	*0.00*
Share public utilities × socio-economic index									-0.075	*0.15*
Share public utilities × BASIC									0.025	*0.41*
Share public utilities ×ELECTRIC									0.055	*0.03*
Share public utilities × LUXURY									-0.129	*0.00*
Numb.obs	15929		15929		15929		15929		15420	
Pseudo R^2	0.01		0.01		0.01		0.02		0.02	

Additional controls: gender, age, age², marital status, employment conditions, ethnicity, city size.

Appendix – Additional tables

Table A.1 – Probability of non expression (either “non respondent” or “don’t know”)
Maximum likelihood probit model (weighed) with heteroskedasticity robust standard errors
(standard errors in parentheses with p<0.05 = *, p<0.01 = **)

# obs :	18357
Depvar:	miss
female	0.197**
	(0.041)
age	-0.019**
	(0.007)
age²	0.000**
	(0.000)
head of family	-0.094
	(0.052)
uncomplt primary	-0.361**
	(0.064)
completd primary	-0.530**
	(0.071)
uncomplt secondary	-0.720**
	(0.073)
completd secondary	-0.739**
	(0.075)
uncomplt univrst	-0.796**
	(0.093)
completd univrst	-0.994**
	(0.102)
socioec good	-0.059
	(0.071)
socioec average	0.024
	(0.071)
socioec bad	0.256**
	(0.078)
socioec very bad	0.415**
	(0.094)
Const	Yes
Famst	Yes
Emplom	Yes
Ethnic	Yes
Month	Yes
Citysz	Yes
Countr	Yes
pseudoR²	0.108

Table A.2 – Determinants of the socio-economic self-assessment.
Weighed OLS with heteroskedasticity robust standard errors
(t-statistics in parentheses)

# obs :	17475	17475	17475
Depvar:	selevel	selevel	selevel
color tv	0.273	0.231	0.229
	(9.77)	(8.27)	(8.25)
refriger	0.227	0.20	0.198
	(9.40)	(8.30)	(8.23)
house	0.051	0.064	0.060
	(2.86)	(3.59)	(3.35)
comput	0.374	0.319	0.315
	(17.09)	(14.37)	(14.19)
washing	0.231	0.206	0.205
machine	(10.53)	(9.50)	(9.44)
telephone	0.241	0.205	0.203
	(13.12)	(11.32)	(11.20)
car	0.268	0.245	0.245
	(14.56)	(13.45)	(13.46)
second	0.078	0.069	0.065
house	(3.06)	(2.72)	(2.57)
drinking	0.116	0.091	0.090
water	(4.15)	(3.30)	(3.28)
hot	0.108	0.088	0.085
water	(5.00)	(4.26)	(4.13)
sewage	0.198	0.175	0.175
	(9.66)	(8.60)	(8.60)
health	0.120	0.10	0.096
insurance	(10.12)	(8.44)	(7.99)
female		-0.029	-0.033
		(-1.77)	(-1.93)
age		-0.005	-0.009
		(-2.10)	(-3.32)
age²		0.000	0.000
		(1.19)	(2.50)
head		0.035	0.044
		(1.89)	(2.05)
uncomplt		-0.161	-0.158
primary		(-4.43)	(-4.34)
completd		-0.253	-0.252
primary		(-6.74)	(-6.67)

uncomplt secondary		-0.343	-0.332
		(-8.89)	(-8.57)
completd secondary		-0.412	-0.404
		(-10.33)	(-10.05)
uncomplt univrst		-0.513	-0.471
		(-11.96)	(-10.75)
completd univrst		-0.630	-0.620
		(-14.26)	(-13.78)
self employed			0.107
			(3.16)
public employee			0.081
			(2.08)
private employee			0.108
			(3.08)
unemployed			0.160
			(4.24)
retired			0.044
			(1.01)
housewife			0.132
			(3.94)
Const	Yes	Yes	Yes
Country	Yes	Yes	Yes
R^2	0.326	0.344	0.345

Table A.3– Descriptive statistics (mean and percentage) by country – Latin America 2002

country	attitude	female	age	head	edyrs	sei
Argentina	-1.15	0.52	42.37	0.47	10.08	0.59
Bolivia	-0.59	0.52	41.56	0.57	6.92	-0.19
Brazil	-0.35	0.51	37.15	0.46	6.09	0.37
Colombia	-0.65	0.53	35.85	0.47	6.98	0.46
Costa Rica	-0.28	0.51	37.27	0.44	7.69	0.52
Chile	-0.65	0.52	40.57	0.46	9.39	0.04
Ecuador	-0.18	0.54	41.42	0.55	7.61	0.12
El Salvador	-0.19	0.52	38.69	0.55	6.74	0.01
Guatemala	-0.59	0.52	37.11	0.45	7.65	0.30
Honduras	-0.31	0.51	37.65	0.54	5.79	0.30
Mexico	-0.62	0.51	36.33	0.59	7.75	0.08
Nicaragua	-0.41	0.50	34.57	0.43	6.93	-0.12
Panama	-0.41	0.49	38.28	0.54	8.26	0.24
Paraguay	-0.78	0.52	35.70	0.40	8.07	0.07
Peru	-0.31	0.50	38.86	0.50	9.84	-0.16
Uruguay	-0.81	0.56	44.96	0.52	8.01	0.21
Venezuela	-0.18	0.50	39.63	0.53	8.16	0.25
Total	-0.50	0.52	38.91	0.50	7.81	0.18

COUNTRY ID	Illiterat	Uncomplet	Complete	Uncomplet	Complete	Uncomplet	Complete
Argentina	0.85	7.27	25.68	23.15	25.34	12.34	5.37
Bolivia	25.07	22.62	7.15	20.78	18.92	4.02	1.42
Brazil	7.27	54.82	10.96	8.40	11.17	3.18	4.20
Colombia	5.00	23.32	17.75	30.84	12.05	4.60	6.44
Costa Rica	5.21	15.02	30.75	20.74	12.77	11.03	4.49
Chile	2.50	23.12	20.43	15.35	30.07	4.05	4.50
Ecuador	10.34	17.34	22.88	14.62	22.49	7.49	4.83
El Salvador	18.04	22.12	10.86	21.37	16.65	6.17	4.80
Guatemala	11.93	21.39	20.82	15.64	20.44	6.95	2.84
Honduras	18.46	26.87	25.02	11.49	12.95	3.43	1.78
Mexico	11.86	4.16	35.56	13.04	25.12	5.83	4.43
Nicaragua	18.45	24.40	15.73	19.86	9.98	7.46	4.13
Panama	10.48	15.11	14.39	19.12	25.90	9.35	5.65
Paraguay	0.64	19.55	31.68	19.40	20.70	4.76	3.26
Peru	5.15	9.44	12.13	19.45	36.16	7.33	10.33
Uruguay	1.53	14.08	35.39	29.64	6.21	5.38	7.77
Venezuela	8.51	44.61	9.15	4.15	17.27	7.25	9.06
Total	9.54	21.12	20.20	18.12	19.33	6.54	5.13

COUNTRY ID	Independe	Salary ea	Salary ea	Temporari	Retired	In charge	Student
Argentina	21.28	7.77	15.34	13.17	12.34	20.15	9.95
Bolivia	46.51	6.82	6.09	3.42	4.47	21.06	11.64
Brazil	35.76	6.45	19.57	8.40	9.53	13.73	6.56
Colombia	31.95	3.06	16.97	16.24	3.51	20.58	7.70
Costa Rica	19.92	7.66	21.86	8.27	6.13	28.80	7.35
Chile	19.15	4.75	26.33	8.27	10.51	25.44	5.54
Ecuador	32.24	6.69	14.37	2.76	5.16	32.74	6.04
El Salvador	36.26	6.30	12.07	7.56	6.32	25.15	6.34
Guatemala	29.50	10.88	17.69	6.18	4.75	25.75	5.24
Honduras	34.74	8.80	11.61	10.67	4.19	25.83	4.15
Mexico	26.75	19.85	22.13	7.06	3.11	9.36	11.74
Nicaragua	33.67	7.16	12.00	6.35	3.23	22.98	14.62
Panama	27.24	9.35	15.93	17.27	8.84	16.55	4.83
Paraguay	28.36	5.66	18.58	16.42	3.45	22.17	5.36
Peru	39.52	8.64	7.31	5.56	5.13	25.08	8.76
Uruguay	19.05	6.75	18.75	11.86	20.79	18.05	4.75
Venezuela	34.53	9.42	11.26	9.31	5.57	22.24	7.67
Total	30.40	8.10	15.66	9.09	7.04	22.02	7.69

Table A.4 – Effects of education and socio-economic condition on support to privatization by country – Latin America 2002

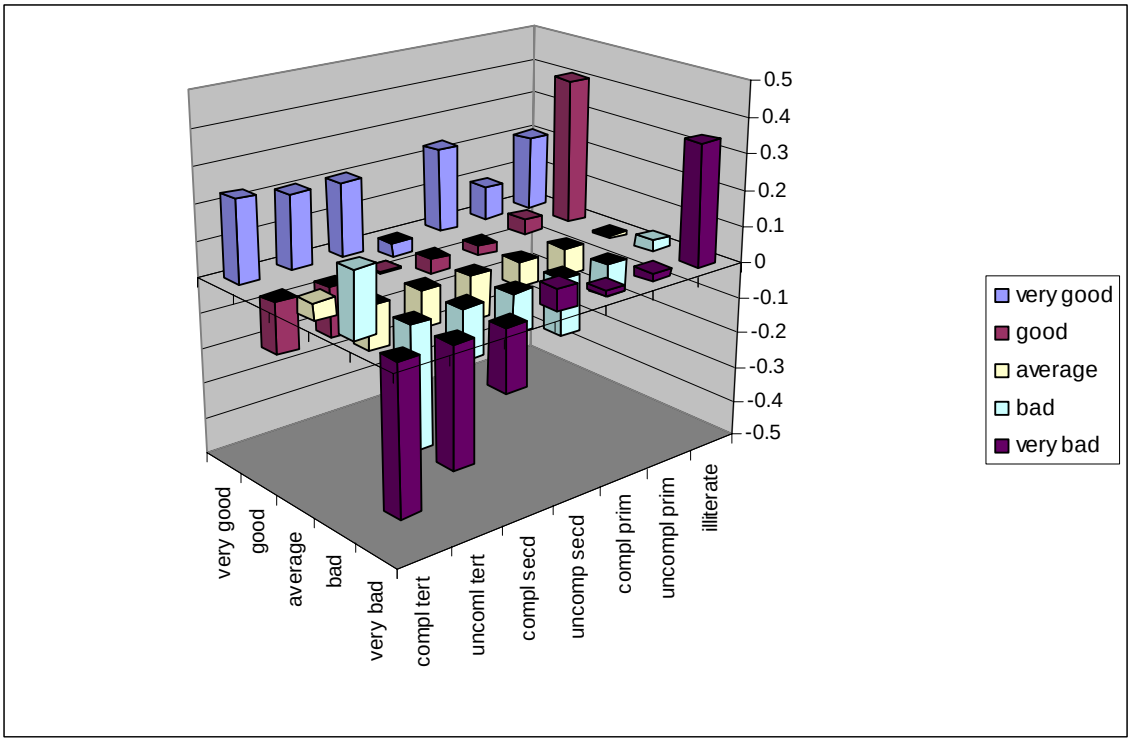
Model 1: ols argentina
Model 2: ols Bolivia
Model 3: ols Brazil
Model 4: ols Colombia
Model 5: ols CostaRica
Model 6: ols Chile
Model 7: ols Ecuador
Model 8: ols ElSalvador
Model 9: ols Venezuela
Model 10: ols Guatemala
Model 11: ols Honduras
Model 12: ols Mexico
Model 13: ols Nicaragua
Model 14: ols Panama
Model 15: ols Paraguay
Model 16: ols Peru
Model 17: ols Uruguay

Model :	1	2	3	4	5	6	7	8
# obs :	1175	1218	975	1152	979	1179	1152	943
Depvar:	attitude	attitude	attitude	attitude	attitude	attitude	attitude	attitude
edyrs	-0.001	0.025	-0.052	-0.061	-0.038	-0.089	-0.021	-0.106**
edyrs2	0.001	-0.002	0.001	0.004	0.002	0.005	0.001	0.006*
segood	0.025	0.313	-0.461*	-0.065	-0.276	-0.623**	-0.083	-0.477*
seavrg	0.109	0.146	-0.703**	-0.072	-0.209	-0.716**	-0.376*	-0.446*
sebad	0.215	0.10	-0.458	-0.361	-0.012	-0.589**	-0.80**	-0.397
sevrba	0.583	0.234	-0.753	0.057	-0.079	-0.288	-1.271**	-0.211
R-sq	0.036	0.062	0.053	0.081	0.051	0.048	0.166	0.058

Model :	9	10	11	12	13	14	15	16	17
# obs :	945	970	1190	992	961	583	1187	1173	1126
Depvar:	attitude	attitude	attitude	attitude	attitude	attitude	attitude	attitude	attitude
edyrs	-0.102**	0.000	-0.049	-0.112**	-0.036	0.129*	-0.053	0.015	0.065
edyrs2	0.004	-0.001	0.002	0.007**	0.003	-0.006	0.002	-0.001	-0.004
segood	-0.182	-0.155	-0.221	-0.151	-0.524**	0.117	-0.263	-0.027	0.072
seavrg	-0.495**	-0.422**	-0.173	0.014	-0.417*	-0.244	-0.421	0.081	0.012
sebad	-0.429	-0.349	-0.424**	-0.071	-0.509*	0.020	-0.424	0.033	0.038
sevrba	-0.126	-0.290	-0.481**	0.288	-0.036	0.221	-0.411	0.271	0.265
R-sq	0.062	0.07	0.04	0.089	0.056	0.107	0.032	0.076	0.036

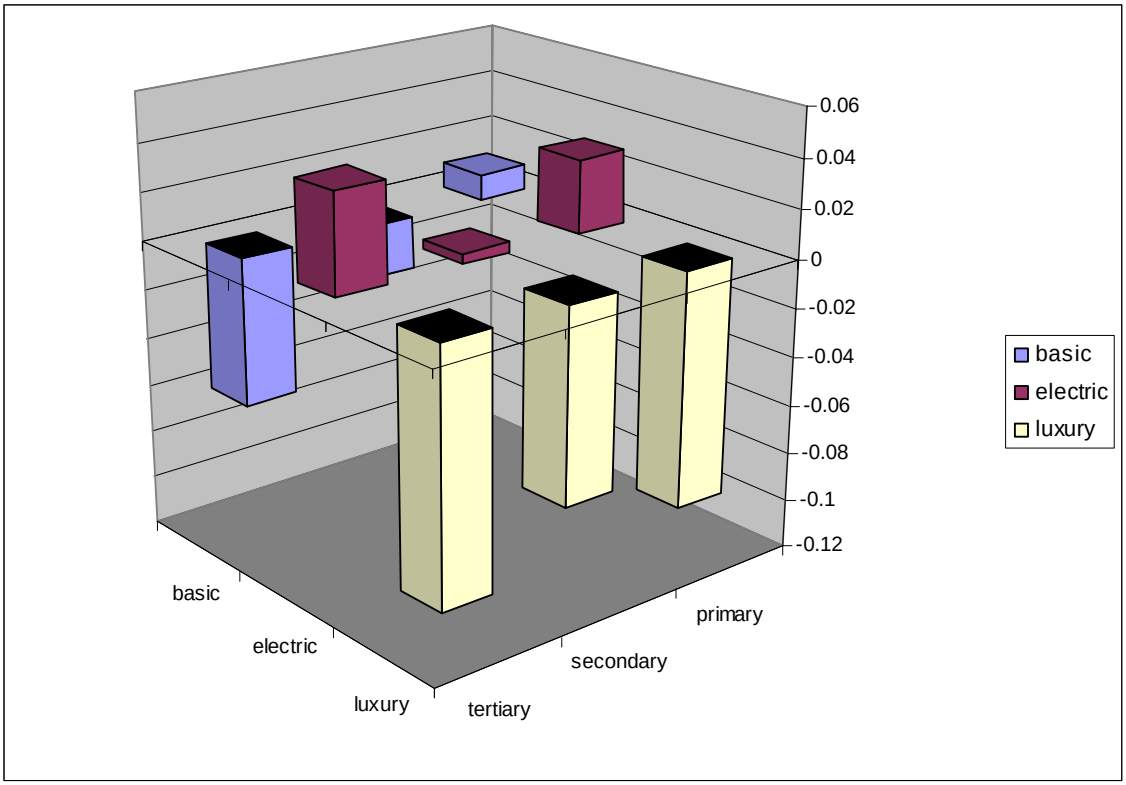
Note: p-value<0.05 = *, p-value<0.01 = **. OLS weighed regression, including gender, age, age², marital status, employment conditions, ethnicity, city size and month of interview.

Figure 1 – Estimates of the impact of education and socio-economic level on support to privatization – Latin America 2002



Note: OLS weighed regression, including gender, age, age², marital status, employment conditions, ethnicity, city size, countries and month of interview.

Figure 2 – Estimates of the impact of education and ownership of durables on support to privatization – Latin America 2002



Note: OLS weighed regression, including gender, age, age², marital status, employment conditions, ethnicity, city size, countries and month of interview.