

Informal Service Access in Pro-Cyclical Welfare States: A Comparison of Electricity Theft in Slums and Regular Residential Areas of Montevideo

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Abstract

It is often thought that incumbents from developing countries abandon the poor during economic crises because of narrow and pro-cyclical welfare policies. In contrast to this view, I argue that informal transfers for those excluded from the welfare state represent an example of “social policy by other means”. Democratic incumbents in dire economic conditions, who need the support or acquiescence of dislocated groups, expand irregular access to electricity service counter-cyclically. Moreover, data from slums and residential areas of Montevideo allow testing the use of electricity losses as both insurance and redistribution.

Keywords: informal social policy; economic cycles; electricity theft; partisan politics, comparative politics.

Field: Comparative policy analytic studies.

Method: Mixed methods; time series analysis and qualitative case study.

Short title: Informal Service Access in Pro-cyclical Welfare States

Introduction

It has been largely documented that welfare states from the OECD have the ability to protect the lower-class against negative income shocks. Decommodification through expanded social policy coverage (Esping-Andersen 1990, Huber and Stephens, 2001) together with the existence of automatic stabilizers and counter-cyclical social spending (Darby and Melitz 2008) are key aspects to secure consumption-smoothing mechanisms in industrialized democracies.

In stark contrast, welfare state spending in the developing world is highly pro-cyclical and targeted to the middle-class. Many believe that incumbents simply abandon the poor during economic crises because these governments are unable to compensate against negative shocks through traditional forms of social protection (Kaufman and Segura-Ubierno 2001, Rudra 2002, Wibbels 2006). Moreover, alternative policy tools to stimulate the demand-side of the economy during the downside of the business cycle are inexistent (Lustig 2000, Talvi and Vegh 2005, Alesina and Campante 2008). Indeed, it is frequent to see democratic governments neglecting the economic interests of the poor (Ross 2006).

The standard demand-side political argument sustains that members from the lower-class, who largely belong to the informal sector, face large collective action problems and cannot express demands to influence policy making (Rudra 2002, Kurtz 2004, Perry et al. 2007).¹ Citizens' failure to support programmatic parties undermine class-based politics and give rise to populist candidates, who in turn defect from redistributive policy platforms when pressured by an adverse economic context (Stokes, 2001).

Against this view, I claim that incumbents from developing countries are sensible to the support or acquiescence of the poor, for both political survival and programmatic preferences. But they face the challenge to find strategies to protect the disadvantaged, which

¹ See, however, Hummel (2017).

in highly volatile economies involves the ability of targeting counter-cyclical transfers. This can be an almost impossible task for many developing country governments (Wibbels 2006). Such context contributes to the emergence of “social policy by other means”.² I show that casting dislocated and poor voters with deliberate non-enforcement of legal access to basic services may be a cost-efficient and politically viable strategy of decommodification during negative income shocks. While research on “forbearance” (Holland 2014, 2016) provides evidence of the existence of this kind of incumbent behavior, less is known about the dynamics of political permissiveness and the partisan politics of informal transfers around basic services.

I argue that forbearance may be a cyclical phenomenon. State flexibility enables governments in dire financial conditions to target a large amount of benefits to the poor when they most need it. Theoretically, I first show that the demand for irregular access to basic services is counter-cyclical, and that politicians can expand the amount of informal transfers to provide insurance. Second, partisan politics can affect the progressivity of enforcement when the government also cares about redistribution toward groups always excluded from the welfare state.

I illustrate how deliberate non-enforcement has been politically used to target transfers to residential areas and informal settlements in the city of Montevideo (Uruguay), before and after a large economic crisis in 2002-2003. The empirical approach exploits monthly data on “non-technical electricity losses” (NTL) in different areas of the city. I find that theft is highly counter-cyclical in both areas, supporting the argument that informal transfers respond to unmet demands for insurance. In addition, differences in the evolution of NTL between regular and slum areas after the left takes power in 2005 are likely to respond to redistributive preferences and partisan politics. The case selection has important advantages because

² See Seelkopf and Starke (forthcoming) in the introduction to this special issue.

ensures conditions of high state capacity, pro-cyclical spending, and political control of the state-owned electricity company with the monopoly of service provision.

Important research has linked electricity theft to corruption, accountability, institutional performance, regulation, and privatization of public utilities (Smith, 2004, Jamasb 2006, Dal Bó and Rossi 2007, Gassner et al. 2008, Joseph 2010, Wren-Lewis 2015, Balza et al. 2013, Jamil and Ahmad 2013). Despite these important insights, the analysis of electricity theft as informal provision of insurance and redistribution has been neglected.³ Analogously, the analysis of social protection in developing countries has been biased toward the Western style of social policy (Kaufman and Segura-Ubiergo 2001; Rudra and Haggard 2005). Yet, protection for the informal sector often emerges as “social policy by other means” (Seelkopf and Stark, *forthcoming*). I show that factors driving unconventional forms of protection, such as economic cycles and partisanship, are remarkably similar to explanations of social policy in advanced democracies. In that sense my work is closer to contributions by Min and Golden (2014), Min (2015), Murillo (2009), and López-Cariboni (2017), who emphasize electoral and partisan politics around electric utilities and service provision.

Traditional social policy and pro-cyclical welfare states

Weak political representation, labor informality, and lack of macro-economic automatic stabilizers, are all factors preventing the lower-class from developing countries to access to a Western style of consumption smoothing transfers. Low mobilization capacity of informal and poor workers may explain welfare state underdevelopment outside of the OECD (Kaufman and Segura-Ubiergo 2001, Rudra 2002, Kurtz 2004, Rudra and Haggard 2005, Wibbels 2006).

³ See, for exceptions, Min (2015); Min and Golden (2014).

A persistent feature of social insurance in developing countries is its inability to protect those in the informal sector. Contributory social protection has been traditionally targeted to a narrow, urban, political clientele of formal workers (McGuire 1999; Huber et al. 2006, Wibbels and Ahlquist 2011) with often regressive effects for the distribution of income (De Ferranti et al. 2003, Lindert et al. 2005, Huber et al. 2006, Goñi et al. 2011). Equally problematic is the fact that spending categories that do reach the poor, such as education, are also the most pro-cyclical components of social spending (Wibbels, 2006). In addition, developing country governments generally lack of policy alternative tools suitable to stimulate the demand-side of the economy during the downside of the cycle (Lustig 2000, Talvi and Vegh 2005, Wibbels 2006, Alesina and Campante 2008). Hence, traditional forms of social policy in developing countries cannot protect a large pool of citizens against income volatility.

Narrowness and cyclicity of social protection are two distinct but related features, here worth emphasizing. First, contributory social policy implies that a poor segment of the population remains always excluded from its benefits (permanent exclusion). Second, transitions from formal toward informal employment and unemployment are more likely during economic downturns (Loayza and Rigolini, 2011). Hence, economic shocks reducing the number of available formal jobs affect access to welfare benefits for those who were previously protected (counter-cyclical exclusion). I argue that “counter-cyclical” and “permanent” forms of exclusion generate corresponding different unmet demands for insurance and redistribution.

These failures of social insurance foster political and social incentives to find alternative forms of delivering transfers. For example, clientelism is one of the major and largely analyzed political economy problems in Latin America (Calvo and Murillo, 2004; Kitschelt and Wilkinson, 2007; Nichter, 2008). While protection affects income through taxes and

transfers (such as CCTs), or via public goods provision, they require genuine budgetary funding. This is also the case of most of clientelistic exchanges. Genuine resources, however, are precisely scarce during economic crises. An entirely distinct logic emerges in the case of large programs of informal social protection. Informal transfers such as irregular electricity are not only economically more important than many of the legal state actions,⁴ they are also available tools for the incumbent to provide both insurance and redistribution at any point over the business cycle.

The demand for electricity theft

Electricity theft creates several inefficiencies in energy distribution and consumption (Jamil, 2013, Lewis, 2015). Substantial losses often induce utility companies and regulation agencies to increase electricity tariffs in order to secure supply (Jamil, 2013). Higher electricity prices for legal customers represent considerable redistribution with a strong pro-poor bias. This is because affordability is the most important reason for electricity theft. Those who cannot bear the cost of this basic service (both the initial connection investment and the consumption fees) are more likely to secure their access through irregular ways, namely, illegal consumption or theft (Smith 2004, Depuru et al. 2011, Winkler et al. 2011). Other factors such as house ownership status and precarious house constructions also play an important role in the propensity toward electricity theft (Mimmi 2014). Despite the general agreement on the necessity of enforcement, inspections and sanctions alone are not entirely effective to reduce losses. Moreover, enforcement itself is a very politically contentious issue (Golden and Min 2012, Holland 2014, 2016) since irregular electricity consumption is a manifestation of a complex phenomenon of social exclusion.

⁴ For example, electricity losses in India reached 1.5 of the GDP in 2004 (Bhatia and Gulati, 2004).

Electricity represents a considerable share of household income for the lower-class. In Uruguay around 2005-2006, the highest income decile allocated 2.6 percent of consumption expenditure to electricity, the fifth decile allocated the 5.9 percent, and the lowest income decile allocated 11.8 percent.⁵ For a low income family with two children in Uruguay, not paying for consumed electricity would represent monthly savings that can easily duplicate the benefits received by that family from the national conditional cash-transfer program Family Allowances (AFAM).⁶

Given the risks of irregular electricity, theft becomes increasingly more attractive as household income is lower. On the political dimension, recent research suggests that poor individuals have a coherent material interest in “forbearance” toward property laws they tend to violate (Holland, 2014). There is also experimental survey evidence showing that large segments of society (i.e., not only the poor) support politicians signaling non-enforcement as insurance against income volatility (López-Cariboni, 2017). Because informal welfare benefits are provided through state inaction, politicians can send more credible electoral cues of their affinity with poor and dislocated voters through forbearance than through traditional social policy promises. Thus, politicians may strategically avoid enforcement of regulations when they possess the capacity to do so (Holland, 2014, 2016). Indeed, existing research provides support for the claim that electricity service can be politically manipulated (Min 2015, Min and Golden 2014, Nagavarapu and Sekhri 2014), especially when there is limited capacity to affect fiscal and monetary policy (Min and Golden 2014). Here, I advance a logic by which politicians can expand counter-cyclical fluctuations in the demand of electricity theft as a means of targeting social transfers to the lower-class when they most need it.

⁵ Data from the National Statistics Institute (INE), 2006, Uruguay.

⁶ For the value of cash-transfers benefits per child see the Social Security Institute, <http://www.bps.gub.uy/5470/asnacion-familiar.html>.

Argument

I start by opening the possibility that incumbents are sensible to the political support or the acquiescence of the poor to survive politically. Lower-class members are a large group in developing countries and therefore an attractive electoral constituency. Because they lack of significant decommodification and cannot smooth consumption, they give a large weight to sociotropic reasons when making political judgments. In other words, those unprotected by the welfare state are comparatively more likely to behave as pure economic voters (Singer 2013, Marx 2014). While delivering economic growth is key for political survival (Hellwig and Samuels 2007), developing countries suffer profound business cycles (Wibbels 2006) and income growth is something that many—even competent—governments fail to achieve. Deliberate state flexibility in face of irregular access to basic services, I argue, may be a viable strategy of informal redistribution to provide counter-cyclical transfers for dislocated and lower income groups. From an economic voting perspective, counter-cyclical informal transfers should help the government to avoid the blame for bad economic performance. In addition, citizens may also attribute forbearance to political choices if the government claims the credit by signaling its enforcement policy.

Yet, vulnerable social groups may also be protected with recent social policy innovations such as non-contributory cash-transfers programs. But while these programs have indeed reduced severe poverty, beneficiaries remain mostly poor or vulnerable, with extremely low levels of schooling and unstable labor market outcomes (Stampini and Tornarolli, 2012). Moreover, the expansion of these programs has been facilitated by a period of economic growth, suggesting they have not yet worked as a consumption smoothing tool in a context of deep economic crisis. Research on political economy of policy adoption emphasizes that

transfers for the poor require fiscal capacity, coalitions and political mobilization, and specific labor market conditions (Mares and Carnes 2009, Carnes and Mares 2014, Garay 2016, López-Cariboni and Menéndez 2017). The minimal benefits typical of CCTs and the so called “conditionalities” are often seen as policy features that reduce the political opposition from tax payers (Fiszbein et al. 2009, Brooks 2015, Zucco Jr. et al. 2016). In sum, when CCTs have low coverage and minimal benefits, the bulk of social protection remains being contributory, therefore narrow and pro-cyclical. This challenges politicians to find alternative means for allocating resources to low-income groups during bad economic times.

The fact that large programs of informal social transfers have been running for long is often overlooked. These are governmental revocable decisions of allocating hidden transfers to a social group (Holland 2016). Such transfers are politically feasible given the concentrated benefits and diffuse costs (Wilson 1980). In the case of electricity service, irregular energy consumption can be translated into the electricity bill of regular clients, or alternatively, into revenue losses for the transmission and distribution electricity company. Casting the poor with free access to a commercialized basic service may be a cost-efficient and politically viable strategy to deliver counter-cyclical benefits.

Low-income individuals often find in illegal behavior a way out to overcome deprivation. For those who face income dislocations or permanent exclusion from social protection, electricity may represent a substantial share of their household budget. Yet, irregular access is not necessarily preferred because of potential severe costs. First, the enforcement level determines one of the costs of theft, which can be expressed as the probability of being caught times the economic value of the sanction. Second, irregular consumers only access to a low quality service. Third, precarious electrical connections involve high risks for human life and risk of large material losses. Given the associated costs, the propensity to steal electricity is highly sensible to income.

I now turn to looking at the effects of business cycles on irregular electricity consumption and the political demand for enforcement. Economic cycles involve large changes in the level of informality, the unemployment rate, and real wages, which create important dislocations for middle- and low-income households. Volatility in developing countries affects a first group protected formal workers who, after transitions toward unemployment and informality, lose access to welfare protection and face a higher risk of poverty. For them, informal transfers are consistent with their unmet demands for insurance.⁷ For a second group of always-poor individuals who face permanent exclusion from contributory social protection, informal transfers during a negative income shock respond to demands for both insurance and redistribution. Hence for the two groups, incentives to consume free but irregular electricity increase with negative income shocks. Therefore, the amount of NTL is expected to increase during economic downturns and decrease during periods of recovery.

Note that this mechanism only affects the level of compliance. Yet, a second effect of business cycles is political: low income and dislocated groups may demand the government to lower the costs of electricity theft, which involves more deliberate non-enforcement from the part of the political incumbent. This mechanism affects the political costs of sanctions for the government, and ultimately creates incentives to lower the level of enforcement.

Different interesting dynamics of electricity theft and business cycles can emerge from the previous discussion. I make use of a policy supply and demand framework to illustrate them. The immediate consequence of economic fluctuations is shifting the demand for free energy (compliance curve). This demand-side effect is shown in the left panel of Figure 1, where the cyclicality of electricity theft is defined by variations between $E_{i.e.}$ and $E_{i.e.}^{shock}$. The

compliance curve has a negative slope as long as violations (quantity) decrease with the number of sanctions (price). The supply curve of *institutional enforcement* has the standard

⁷ I do not deny redistribution motives may be present, but I emphasize insurance considerations of this group.

positive slope: the rate increases the number of sanctions as the number of violations also rises.⁸ Hence, the first empirical implication is that macroeconomic fluctuations should be correlated with changes in the amount electricity theft.

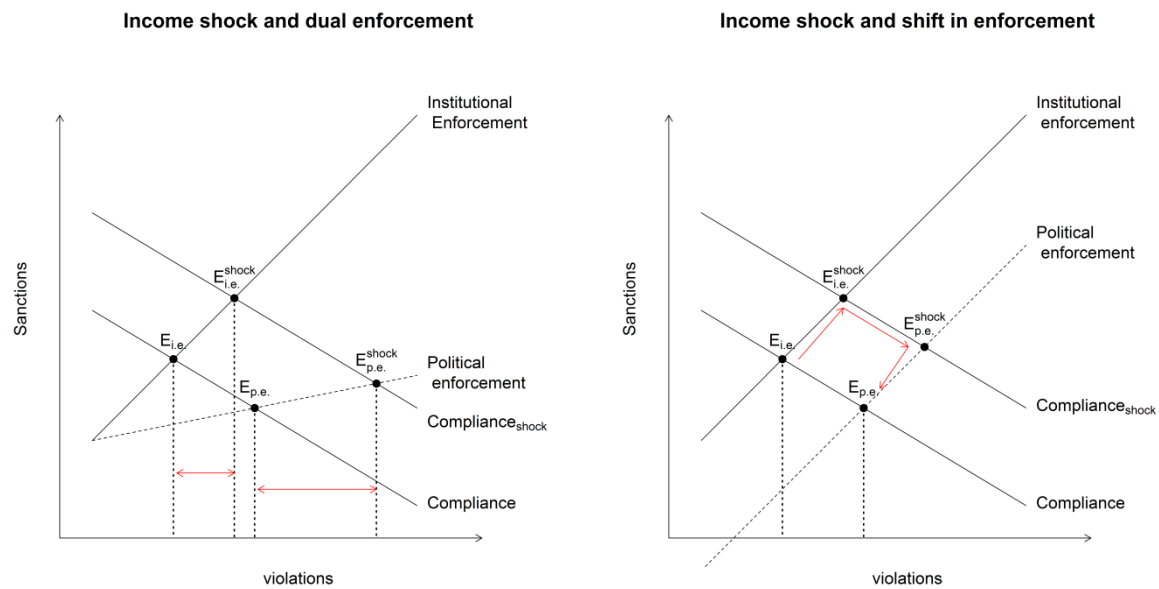


Figure 1: Effects of negative income shock and political enforcement on electricity theft.

Interestingly, incumbents can boost the size of informal counter-cyclical transfers by adapting the enforcement policy. Analysis of the supply-side of policy helps to understand how governments can target informal transfers through dual enforcement strategies. The government (or a public utility company) implements a given *institutional enforcement* for the general public together with a targeted *political enforcement* effort. The dual enforcement strategy translates into different relationships between the level of violations (this is, the amount of electricity theft) and sanctions for different social groups. Since economic crises increase the number of individuals willing to bear the costs of illegal access to electricity, the flatter political enforcement is a way of allocating even more resources to those who lose, or

⁸ This framework closely matches the logic in Holland (2016).

are already excluded from, social protection when they most need it. This is illustrated with a supply curve of political enforcement that has a smaller slope in the left panel of Figure 1.

The resulting counter-cyclical variation in electricity theft is now represented by the change between $E_{i.e.}^{shock}$ and $E_{p.e.}^{shock}$. It is easy to see that incumbents can exploit these shifts in the demand-side of informal access to basic services to target counter-cyclical insurance.

I have shown that for an opportunistic government expanding the number of violations with the business cycle helps to build support among those negatively affected by the crisis. Yet, incumbents may react with a different logic if enforcement choices are dominated by redistribution concerns (rather than insurance). In this regard, an argument about partisan politics leads to additional different predictions. Left governments care about winning office but are also concerned about inequality and redistribution (Ha 2012, Huber and Stephens 2001, 2012, Pribble 2013), as well as protecting outsiders (Garay 2016). Moreover, left parties may be more likely to see electricity access as a basic need for which access should be guaranteed by the state. But when the financial and operational costs of regularizing informal settlements are too large or controversial, left parties should prefer a progressive no-enforcement policy that ensures access to energy to the poor. Center-right parties, to the contrary, may face electoral costs if their voters oppose redistribution toward the poor. On the demand-side of policy, the always excluded poor view informal transfers as redistribution (not only insurance), and therefore are likely to reward incumbents that lower enforcement. Consistently, Holland (2016) finds evidence suggesting that poor citizens reward politicians that signal forbearance. I show below that sanctions in slum areas of Montevideo can quickly become politically costly for the incumbent, and in turn, the electricity company signals flexibility. Whether a government responds to the demands of the permanently excluded from welfare protection (e.g., maintaining informal transfers after an economic crisis has passed), is likely to depend on partisan distributive strategies.

Being a purely ideological top-down process, or in combination with catering social demands, the implication is that the Left should increase informal transfers in poorest areas, targeting the always excluded from formal employment and welfare protection. As in the right panel of Figure 1, a shift in the enforcement curve would lead to maintain state flexibility even after the economy recovers. The variation of electricity theft across the business cycle is determined by a sequence: $E_{i.e.} \rightarrow E_{i.e.}^{shock} \rightarrow E_{p.e.}^{shock} \rightarrow E_{p.e.}$. Note that electricity losses reach a new higher level after the negative cycle.

Research design and empirical evidence

In this section, I look at different empirical dynamics of NTL by comparing slums and regular residential areas from the city of Montevideo between 1998 and 2011.

I begin by providing contextual information. Within the period under analysis, Uruguay suffered the deepest economic crisis in its history, with a peak in 2002-2003. Government spending, in turn, has been highly pro-cyclical. Human capital and social spending are particularly known to be vulnerable against income volatility (Azar and Fleitas 2012).

Moreover, between 2000 and 2009, the Uruguayan fiscal policy was among the most pro-cyclical of the world (Frankel et al. 2013: 35). Social spending dramatically decreased during 2002-2003, and recovered to the pre-crisis level only by 2007-2008 (see Figure 1A in the Online Appendix to this article).

In 2005 a strongly programmatic and highly disciplined left-wing party (Broad Front) takes power with a qualified majority in the legislative power. The most important pro-poor social insurance policy of the government has been the adoption conditional cash-transfers, such the first National Assistance Plan of Social Emergency (PANES) and the AFAM program. These programs represented a modest amount of 0.41 percent of the GDP between 2005 and 2007 and only after 2009 reached to the 0.9 percent. Between 2005 and 2007 the PANES targeted

only a 20 percent of the poor households in the country, which indicates narrow coverage. Since beneficiaries were far below the poverty line, these programs have reduced extreme poverty but their effect in reducing poverty was almost negligible (Amarante and Vigorito, 2012). Hence, despite new non-contributory social policies, conditions of permanent exclusion from social protection remain true for a considerable share of the population in the informal sector.⁹

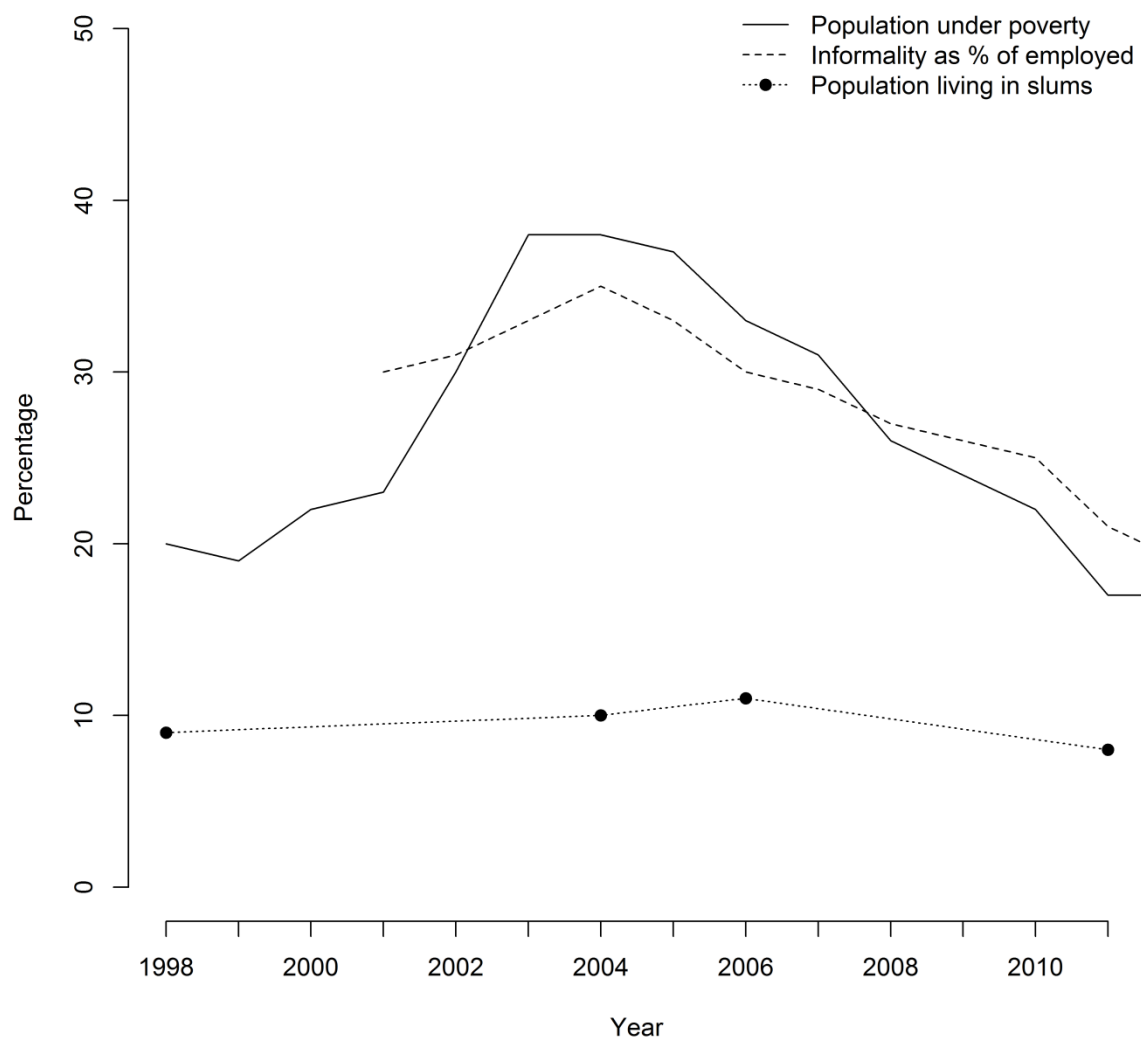
It is precisely in slums where households are more likely to be always excluded from contributory welfare state protection. In regular areas, to the contrary, an important share of the households has cyclical access to traditional welfare state protection. This is, they are protected before the crisis until they lose formal employment and their risk of poverty increases. Figure 2 helps to see this more clearly. While slums represent a relatively stable population group,¹⁰ the poverty rate in Montevideo is higher than the population living in slums. More importantly, the informality rate and the share of poor population exhibit dramatic over-time variation according to the evolution of the business cycle. After job displacement, dislocated formal workers eventually lose access to contributory health and unemployment insurance, as well as benefits from employment protection rules. Economic research shows that losing formal employment is a major reason of poverty in Uruguay.¹¹ Crucially, these individuals are likely to belong to lower income households in residential areas of the city, not slum areas where the linkage to formal employment is inexistent and exclusion from meaningful welfare protection is permanent. Hence, while negative income shocks severely affect both areas, informality varies more in regular ones, where social protection is consequentially cyclical.

⁹ The decline in inequality mostly responds to economic growth, formalization and centralized wage bargaining.

¹⁰ Slums, increased during the 1980s and especially 1990s (Álvarez-Rivadulla, 2017; Amarante and Ferrando, 2011).

¹¹ For studies in Uruguay on the income effects of job loss and informality during the the crisis see: Amarante, Arim, and Dean (2014), and Amarante, Arim, and Yapor (2016).

The differences between slum and non-slum areas of Montevideo represent an interesting opportunity to test the implications from the theoretical section. In the two areas informal transfers can certainly build political support during the crisis, but the insurance-redistribution balance in the reasons for forbearance is markedly different.



Note: See Online Appendix for data sources.

Figure 2: Poverty, informality, and population living in slums in Montevideo.

An important alternative explanation to forbearance is state capacity. The Uruguayan state owns the monopoly of electricity distribution. It also has the ability to detect and prevent any form of electricity theft across all the national territory, including slum areas. Despite illegal access to electricity is very high in informal settlements, the Uruguayan state is probably the strongest one in Latin America (Soifer, 2015). This makes the case study especially attractive for analyzing the politics of non-compliance. The state has complete control of provision and consumption of basic services in informal settlements. Moreover, the public utility company (U.T.E.) has geographically located knowledge of electricity losses which allows locating theft. In addition, the company has around 6,500 employees and other 3,500 workers are employed via outsourced services. An important share works in the so-called “cuadrillas”, teams of technicians that surveillance the city doing supervision to prevent electricity theft, as well as regular maintenance work. Altogether, it is unlikely that irregular electricity consumption in Uruguay responds to a problem of state capacity. The main obstacle, instead, are the social and political costs of sanctions, insofar as strict enforcement would prevent the poor from access to electricity.

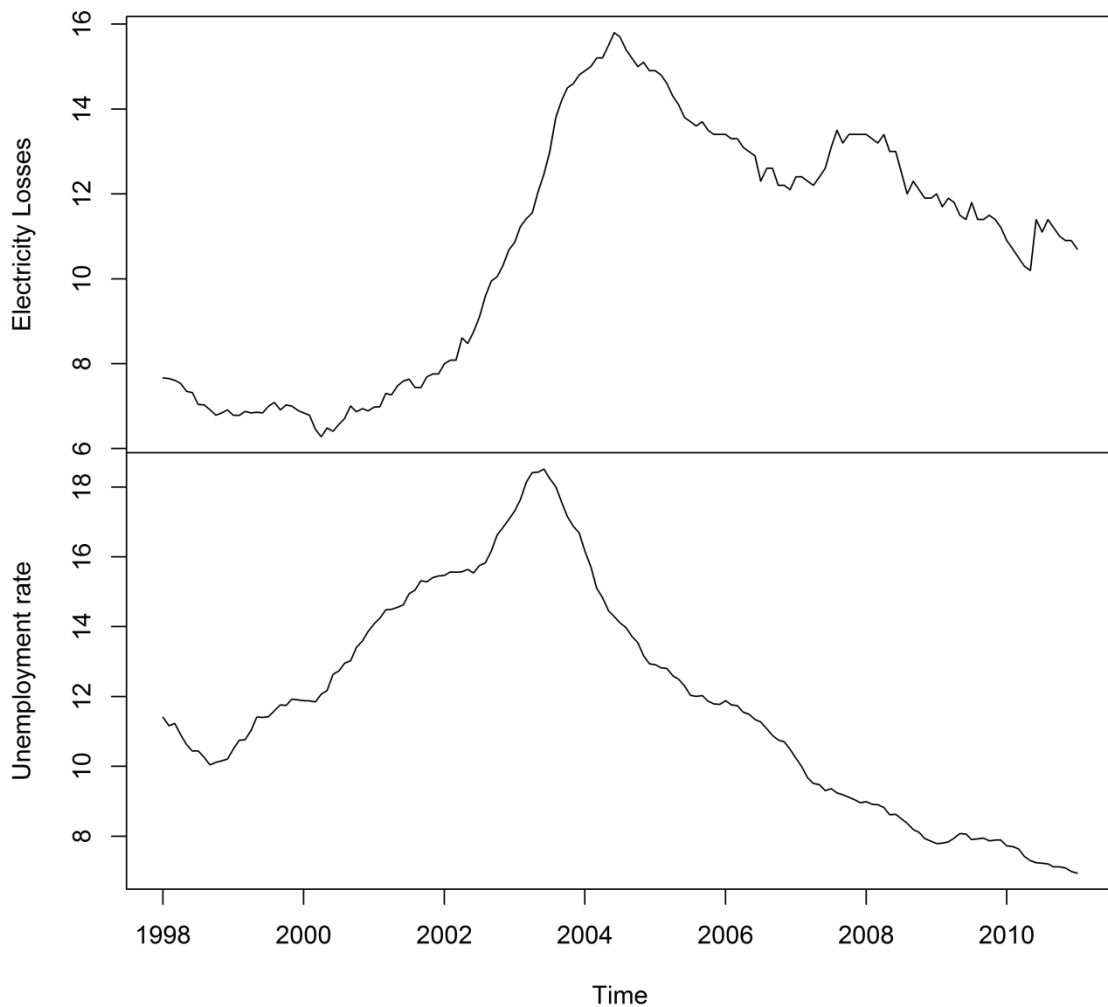
Another important aspect is the actual political control of the state-owned electricity utility. Privatization of public utilities in presidential systems has been found to reduce political discretion over basic service provision (Murillo 2009) and help to reduce electricity losses (Balza et al. 2013). The U.T.E. is in public hands since its creation in 1912 and has the monopoly of electricity transmission and distribution and is subject of a tremendous amount of political control by the executive power. By constitutional dispositions, the company belongs to the executive branch and is governed by a board of five members. The elected country president appoints a majority of three members that represent the government, one of them being the president of the company board (a person of political and personal trust of the elected president). The opposition with parliamentary representation has two seats in the

company board, but they have only a basic role of political control. The company board is ratified by a legislative special majority. In practice, the political opposition may not participate in the executive board, as this was the case between 1995 and 2010 (see: Table 1A in the Online Appendix). More importantly, the president can remove the company president and its board members at any time. The political control over the public utility also involves the budgetary process and all mayor investment decisions by the company through the decision power of the Ministry of Economy. In addition, sensible decisions such as enforcement of the law against electricity theft are not controlled by company bureaucrats. When not hidden, these politically salient decisions are often justified in the press by the utility company president, and therefore they must be in agreement with the political directions of the party in power. In sum, it becomes quite clear from the institutional design that the utility company follows the political incentives of the party in government, which is also a remarkable feature of this case study.

While counter-cyclical electricity theft may be an indication of the existence of political choices, I acknowledge that deliberate non-enforcement cannot be solely identified by a higher number of illegal connections. It should also be the case that the enforcement policy (sanctions) is modified. Indeed, the scarce data on enforcement reflects the fact that this is a very political issue. However, some important evidence gives support to the idea that forbearance on electricity theft is a counter-cyclical phenomenon. Information on the number of inspections available in the press allows estimating that, during the years of crisis 2002-2003, the U.T.E. conducted an annual average of 9,050 inspections per point of NTL. After the economic recovery, this is between 2008 and 2010, this number increased to an annual average of 14,622. Moreover, the correlation between enforcement and unemployment is clearly negative as seen in Figure 2A from the Online Appendix.

Qualitative evidence also suggests that politicians tend to deliberately avoid enforcement of legal access to electricity. When asked about the high levels of theft in poor areas of Montevideo, a left-wing former board member director of the U.T.E. (2005-2012) explained that “this is matter of social sensitivity that cannot be treated from a commercial point of view”.¹² After the financial crisis of 2002 the amount of transmission and distribution losses increased up to 20.2% of the total electricity loaded to the power grid. Within that amount, 11.2% were NTL or theft. After the economic recovery the figure has decreased to 7.7% in 2010. In Montevideo, the evolution of non-technical losses has been quite similar to the national pattern. As shown in Figure 3, the amount of energy theft seems to follow a close relationship with the level of unemployment. Yet it is interesting to note that the decay in NTL after crisis is much smaller than the reduction in unemployment after 2004. Moreover, while unemployment reaches the same pre-crisis level in 2008, total electricity theft in Montevideo never returns to the levels observed between 2000 and 2002. As I will show later, a closer look to the data suggests that partisan choices are correlated with the different dynamics in illegal access to energy among different social groups.

¹² Personal interview. December, 2015.



Note: Plots are twelve-month rolling totals of unemployment rate and electricity losses.

Figure 3: Unemployment and electricity losses in Montevideo.

During times of economic prosperity, the left government increased the level of enforcement for residential areas, as different interviews with government officials and press evidence suggest.¹³ However, the opposite seems to be happening when it comes to the poorest areas

¹³ See: “Control, inspection and regularization”, 2010 press release by the Presidency of the Republic at <http://archivo.presidencia.gub.uy/sci/noticias/2010/04/2010042101.htm>.

of the city. While the government has notably lowered the costs of formalization,¹⁴ the current level of enforcement seems to be as low as in the aftermath of the economic crisis. Despite some slum neighborhoods were fully regularized—which involves enormous financial costs per new legal consumer of electricity—, it was only until 2010 when the U.T.E. launched an ambitious program with the goal to reduce illegal electricity consumption in neighborhoods of high social vulnerability.¹⁵ This program is implemented together with the Ministry of Social Development and the Municipality of Montevideo. In targeted low-income areas, U.T.E. provides free formal connection to the electricity network, debt cancellations, and discounted energy tariffs. Interestingly, while the program involves positive incentives to formalization, it does not include more enforcement. In a press release in 2010, the electricity company explained that the number of inspections planned for 2010-2011 in “problematic areas” (this is, slums and other socially vulnerable areas) is zero.¹⁶ Forbearance in slum areas is likely to respond to both the ideological policy presences of the left government and the organizational capacity of such communities. Actors in informal settlements normally mobilize against power cuts and get quickly reported in the national media. Recent research confirms political mobilization to secure irregular service access in slums of Montevideo (Álvarez-Rivadulla, 2017). For example, the U.T.E. signals forbearance when streets demonstrations after overloading and power outages due to excessive theft, the company restores and strengthens the network without imposing sanctions to irregular consumers in the area. Moreover, press reports show that board members of the U.T.E. even

¹⁴ The Ministry of Social Development (MIDES) has two programs that reduce the cost of formalization and electricity consumption. The “social discounts card” is targeted to poor households with a similar method than the national conditional cash transfers program “Asignaciones Familiares”. A second program is a “services basket” transfer, which is geographically targeted. Hence, individuals may get financed connection fees through a social card (“Tarjeta Uruguay Social”), a services basket benefit (“Canasta de Servicios”), or the qualification of “precarious housing” (UTE - “Vivienda modesta”). Connection fees are paid in installments over a year period. The installments are part of the electricity bill. Also, the U.T.E. launched a program with goal to reduce illegal electricity consumption in neighborhoods of high social vulnerability, “Plan to Halt the Irregular Consumption of Electric Power in Areas of Socioeconomic Vulnerability”.

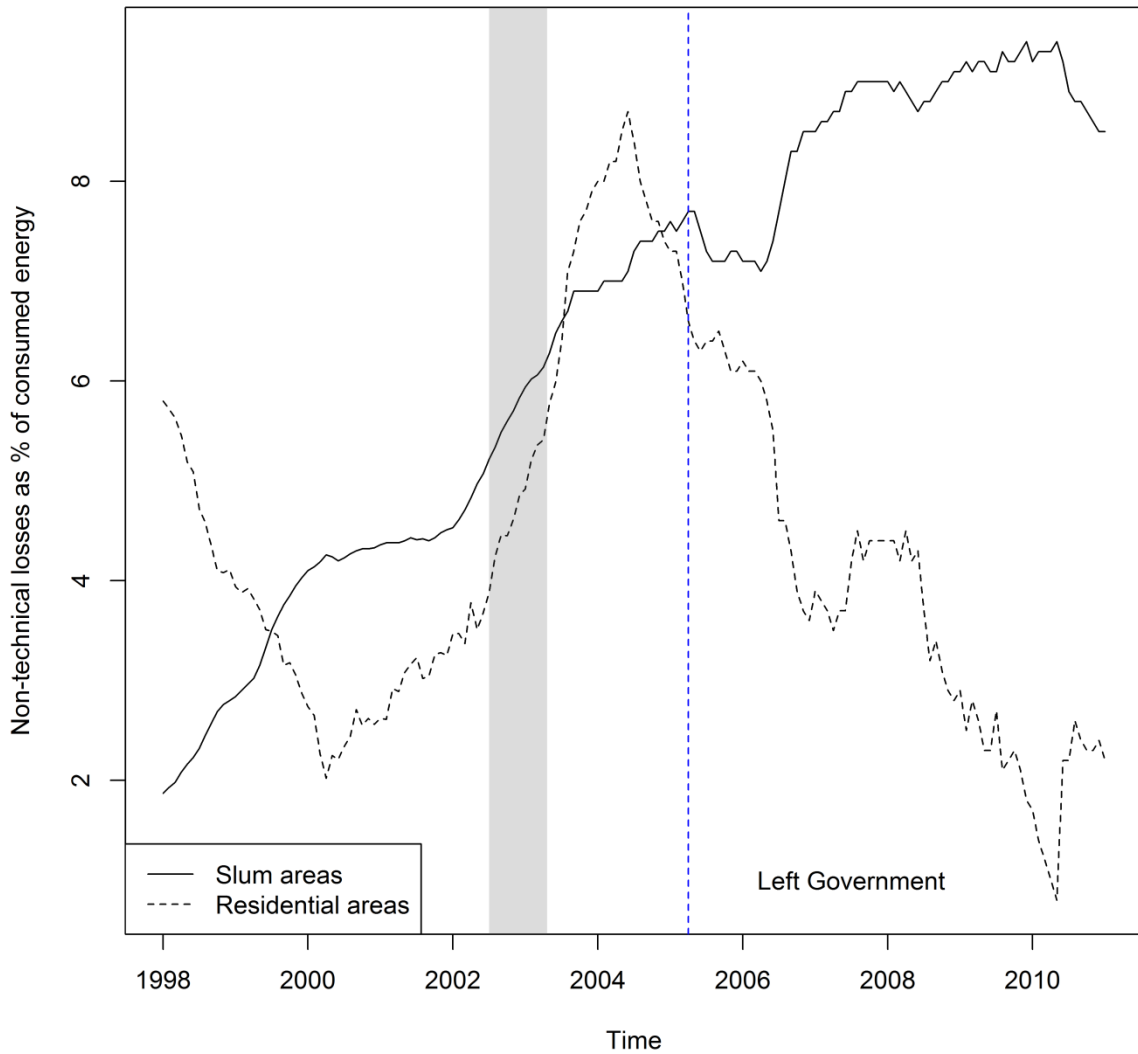
¹⁵ “Plan to Halt the Irregular Consumption of Electric Power in Areas of Socioeconomic Vulnerability”.

¹⁶ See http://www.ute.com.uy/sispubnoticias/pubadjuntos/6802_PERDIDAS/. Accessed in August 2016.

make themselves present in affected areas to personally explain to neighbors (many of them irregular consumers) that power transmission will be soon restored.¹⁷ Such demands are politically salient and especially relevant for left incumbents. Such episodes, a decade after the crisis, resemble the aforementioned theoretical shift in the enforcement effort distinguishing forbearance as redistribution from insurance. This helps to see why after an income shock takes place electricity theft may not revert to its original level in if the government increases informal transfers to poorest communities.

Quantitative evidence in Figure 4 discriminates NTL of electricity as a percentage of consumed energy in the city between “socio-economically vulnerable areas” (as defined by U.T.E. these are mostly slums) and the electricity losses in the rest of the city. Given the smaller population size in slums, residents in these areas consume much more irregular electricity than those in regular areas (Amarante and Ferrando, 2011). The striking conclusion from this comparison is that the evolution of theft in slums diverges from the counter-cyclical path in regular areas after the left takes power in 2005.

¹⁷ This is an example from Villa García in 2015, an area with several slums in which irregular connections outnumber the regular clients. <http://subrayado.com.uy/Site/noticia/46614/volvieron-cortes-de-luz-y-de-transito-ute-finaliza-reparacion-definitiva>. Anecdotal evidence in main national the media is abundant.



Note: Grey shaded area indicates the peak of the financial crisis (June 2002 – April 2003). The blue dashed line indicates the beginning of left governments in Uruguay (March 2005).

Figure 4: Electricity losses by socio-economic areas.

Whether forbearance is counter-cyclical and how is distributed are both empirical questions. I analyze monthly time series of NTL as a percentage of total consumed electricity in Montevideo between January 1998 and January 2012. The data were published by the

U.T.E.^{18 19} The dependent variables are total NTL in Montevideo, NTL in slum areas, and NTL losses in residential areas. All measures are taken as a percentage of total consumed electricity in the city. The main independent variable is the unemployment level. Seasonality of the series is controlled with dummies per month of the year.²⁰ I also include other two political variables. The first one is a dummy variable capturing the months previous to a national election (January-September of 1999, 2004, and 2009) that capture if there is signals of a political business cycle in the amount of electricity theft. Most importantly, I add a dummy for left government since March 2005, when the left takes control of the national government.

In order to estimate the cyclicity of electricity theft I run a simple time series analysis. The specification is an error correction model for co-integrated time series (Greene, 2003; De Boef and Keele, 2008) with the following form:

$$\Delta y_t = \phi y_t + x_{t-1} \beta_1 + \Delta x_t \beta_2 + m_t + \varepsilon_t$$

The three models from Table 1 suggest that positive changes in unemployment are correlated with more electricity theft. Yet important differences between areas exist. First, the positive effect of unemployment on electricity losses among regular residential areas is strong and highly significant. For a point increase in unemployment, non-technical losses are expected to increase 0.93 point in the long run.²¹ In poor areas this effect is only significant after controlling for election year and left government. Moreover, the long-run effect of

¹⁸ See: http://www.ute.com.uy/php/detalle_prensa.php?id=6802. Accessed in August 2016.

¹⁹ Non-technical losses are the energy lost due to electricity theft, this is, energy that was never paid for but effectively consumed by households.

²⁰ Decomposing the time series and estimating models with seasonally adjusted data renders the same results.

²¹ Long-run effect for an ECM model can be calculated by dividing the coefficient of interest by minus the coefficient of the lag dependent variable, $\frac{\beta}{(-\phi)}$.

unemployment on electricity theft in poor areas is 0.64, which is substantially smaller but still economically important. The key conclusion is that both areas receive counter-cyclical informal transfers, suggesting the existence of an insurance mechanism as shown in the left panel of Figure 1.

Partisan politics also play an important role. In slum areas, Left government has a positive and significant effect on losses, with a long run multiplier of 5.5 points. This would indicate that in absence of a leftist administration, losses in slums may have followed the evolution of non-slum areas. Moreover, since there is no significant partisan effect in regular areas, there is evidence supporting that the progressivity of non-enforcement has increased with the Left government.

	Non-technical losses		Slum areas		Regular areas	
	β (s.e.)	β (s.e.)	β (s.e.)	β (s.e.)	β (s.e.)	β (s.e.)
LDV	-0.01 (0.01)	-0.02 (0.01)**	-0.01 (0.00)*	-0.02 (0.01)***	-0.05 (0.02)***	-0.05 (0.02)***
Δ LDV	0.06 (0.08)	0.01 (0.08)	0.36 (0.08)***	0.28 (0.08)***	0.07 (0.08)	0.05 (0.08)
Unemployment t-1	0.03 (0.01)***	0.06 (0.01)***	0.00 (0.00)	0.01 (0.00)***	0.04 (0.01)***	0.05 (0.01)***
Δ Unemployment	-0.05 (0.12)	-0.09 (0.12)	-0.01 (0.04)	-0.02 (0.04)	-0.25 (0.13)**	-0.21 (0.13)
Left government		0.23 (0.07)***		0.11 (0.04)***		0.08 (0.07)
Election year		0.03 (0.05)		0.04 (0.02)**		-0.00 (0.05)
(Intercept)	-0.25 (0.11)**	-0.53 (0.16)***	0.00 (0.05)	-0.08 (0.06)	-0.22 (0.10)**	-0.38 (0.17)**
Adj. R ²	0.17	0.17	0.18	0.23	0.11	0.10
Num. obs.	155	155	155	155	155	155

***p<0.01, **p<0.05, *p<0.1.

Table 1: Cyclical non-technical losses different areas of Montevideo, 1998-2011.

Despite this is suggestive evidence, a note of caution is important given potential unknown confounders typical in time series analysis with a single unit. Hence, more research is certainly needed to confirm the partisan politics of non-enforcement. The important implication from this analysis is that income volatility in narrow and cyclical welfare states may contribute to lower enforcement and long-run informality, which in turn is affected by partisan strategies.

Conclusions

In this article I analyze the politics of informal access to electricity. I argue that informal transfers are likely to emerge in narrow and cyclical regimes of formal social protection. Comparison of electricity losses between informal settlements and regular areas in the city of Montevideo suggests that informal transfers provide insurance in both areas. In slum areas, where exclusion from welfare policy is permanent, the presence of a Left government is significantly correlated with higher electricity losses. Partisan preferences for redistribution and local demands for lower enforcement are likely to affect the progressivity of informal transfers.

Future research should be able to identify policy action more directly. Admittedly, one limitation of this study is the lack of high quality enforcement data. Even so, the presented evidence is very suggestive regarding the existence of counter-cyclical enforcement and the partisan strategies to protect different social groups.

Electricity theft as a consumption smoothing policy should warn about vicious traps and perverse consequences. The notion that informality provides outside options to smooth consumption is not new (Rosenzweig 1988). The case of electricity theft involves a lower quality service for those who do not pay the bill, and undermines the value of establishing formal contracts with the state, not to mention the risks for human life. In short, this type of “social policy by other means” is highly problematic because despite being economically progressive, it also promotes dualization between the formal and the informal sector.

References

- Alesina, A. and Campante, F., 2008, Why is fiscal policy often procyclical? *Journal of the European Economic Association*, 6(5), pp. 1006-1036.
- Álvarez-Rivadulla, M. J., 2017, *Squatters and the Politics of Marginality in Uruguay*. Palgrave Macmillan.
- Amarante, V., Arim, R., and Dean, A., 2014, The Effects of Being Out of the Labor Market on Subsequent Wages: Evidence for Uruguay. *Journal of Labor Research*, 35(1), 39–62.
- Amarante, V., Arim, R., and Yapor, M., 2016, Decomposing inequality changes in Uruguay: the role of formalization in the labor market. *IZA Journal of Labor and Development*, 5(1), 13.
- Amarante, V., and Ferrando, M., 2011, *Consumption of Energy and Water Services in the Uruguayan Population* (IECON, Working paper series, 5–11).
- Amarante, V., and Vigorito, A., 2012, *The Expansion of Non-Contributory Transfers in Uruguay in Recent Years* (Policy Research Brief No. 29).
- Azar, P., and Fleitas, S., 2012, Gasto Público Total y Social: El Caso De Uruguay En El Siglo XX. *Revista de Historia Económica*, 30(1), 125–156.
- Balza, L., Jimenez, R., and Mercado, J., 2013, Privatization, institutional reform, and performance in the Latin American Electric Sector. *Inter-American Development Bank Technical Notes*, IDB-TN-599(December), pp. 1–42.
- Bhatia, B., and Gulati, M., 2004, Reforming the Power Sector. Controlling Electricity Theft and Improving Revenue. *Public Policy for the Private Sector*, number 272. The World Bank.

- Brooks, S. M., 2015, Social Protection for the Poorest: The Adoption of Antipoverty Cash Transfer Programs in the Global South. *Politics and Society*, 43(4), pp. 551–582.
- Calvo, E. and Murillo, M. V., 2004, Who Delivers? Partisan Clients in the Argentine Electoral Market. *American Journal of Political Science*, 48(4), pp. 742–757.
- Carnes, M. E. and Mares, I., 2014, Coalitional realignment and the adoption of non-contributory social insurance programmes in Latin America. *Socio-Economic Review*, 12(4), pp. 695–722.
- Dal Bó, E. and Rossi, M. A., 2007, Corruption and inefficiency: Theory and evidence from electric utilities. *Journal of Public Economics*, 91(5-6), pp. 939–962.
- Darby, J. and Melitz, J., 2008, Social spending and automatic stabilizers in the OECD. *Economic Policy*.
- De Boef, S. and Keele, L., 2008, Taking Time Seriously. *American Journal of Political Science*, 52(1), pp. 184–200.
- De Ferranti, D. M., Perry, G. E., Ferreira, F. H. G., and Others, 2003, *Inequality in Latin America and the Caribbean: Breaking with History?* The World Bank Washington.
- Depuru, S. S. S. R., Wang, L., and Devabhaktuni, V., 2011, Electricity theft: Overview, issues, prevention and a smart meter based approach to control theft. *Energy Policy*, 39(2), pp. 1007–1015.
- Esping-Andersen, Gosta., 1990, *The Three Worlds of Welfare Capitalism*. NJ: Princeton University Press.
- Fiszbein, A., Schady, N. R., and Ferreira, F. H. G., 2009, *Conditional cash transfers: reducing present and future poverty*. World Bank Publications.
- Frankel, J. A., Vegh, C. A., and Vuletin, G., 2013, On graduation from fiscal procyclicality. *Journal of Development Economics*, 100(1), 32–47.

- Garay, C., 2016, *Social Policy Expansion in Latin America*. Cambridge: Cambridge University Press.
- Gassner, K., Popov, A., and Pushak, N., 2008, *Does Private Sector Participation Improve Performance in Electricity and Water Distribution?* Number 6. The World Bank.
- Min, B., and Golden, M., 2014, “Electoral Cycles in Electricity Losses in India.” *Energy Policy* 65 (February).
- Goñi, E., López, J. H., and Servén, L., 2011, Fiscal Redistribution and Income Inequality in Latin America. *World Development*, 39(9), pp. 558–1569.
- Greene, W. H., 2003, *Econometric Analysis*. Prentice Hall, NJ, Upper Saddle River, 5th edition.
- Ha, E., 2012, Globalization, Government Ideology, and Income Inequality in Developing Countries. *The Journal of Politics*, 74(2), 541–557.
- Hellwig, T. and Samuels, D., 2007, Voting in Open Economies. *Comparative Political Studies*, 40(3), pp. 283–306.
- Holland, A. C., 2014, The Distributive Politics of Enforcement. *American Journal of Political Science*, 59(2), pp. 357-371.
- Holland, A. C., 2016, Forbearance. *American Political Science Review*, 110(02), pp. 232–246.
- Huber, E., Nielsen, F., Pribble, J., and Stephens, J. D., 2006, Politics and inequality in Latin America and the Caribbean. *American Sociological Review*, 71(6), pp. 943.
- Huber, E. and Stephens, J. D., 2001, *Development and Crisis of the Welfare State: Parties and Policies in Global Markets*. University of Chicago Press, Selections, Chicago.
- Huber, E., and Stephens, J. D., 2012, *Democracy and the Left: Social Policy and Inequality in Latin America*. Chicago and London: The University of Chicago Press.

- Hummel, C., 2017, Disobedient Markets. *Comparative Political Studies*, 50(11), pp. 1524-1555.
- Jamasb, T., 2006, Between the state and market: Electricity sector reform in developing countries. *Utilities Policy*, 14(1), pp. 14–30.
- Jamil, F., 2013, On the electricity shortage, price and electricity theft nexus. *Energy Policy*, 54:267–272.
- Jamil, F. and Ahmad, E., 2013, An economic investigation of corruption and electricity theft. *PIDE Working Papers*, 1(92), pp. 1–19.
- Joseph, K. L., 2010, The politics of power: Electricity reform in India. *Energy Policy*, 38(1), pp. 503–511.
- Kaufman, R. R. and Segura-Ubiergo, A., 2001, Globalization, domestic politics, and social spending in Latin America. *World Politics*, 53(4), pp. 553–587.
- Kitschelt, H. and Wilkinson, S., 2007, *Patrons, Clients and Policies: Patterns of Democratic Accountability and Political Competition*. Cambridge University Press.
- Kurtz, M. J., 2004, The dilemmas of democracy in the open economy: Lessons from Latin America. *World Politics*, 56:262–302.
- Lewis, F. B., 2015, Costly 'Throw-Ups': Electricity Theft and Power Disruptions. *Electricity Journal*, 28(7), pp. 118–135.
- Lindert, K., Skoufias, E., and Shapiro, J., 2005, Redistributing Income to the Poor and the Rich: Public Transfers in Latin America and the Caribbean. Discussion Paper 0605., Washington, DC. World Bank.
- Loayza, N., and Rigolini, J., 2011, Informal Employment: Safety Net or Growth Engine? *World Development*, 39(9), pp. 1503-1515.

- López-Cariboni, Santiago. 2017. Political Foundations of Electricity Losses and Theft: Evidence from Survey Experiments and Time-Series Cross-Section Data in Latin America. Unpublished manuscript.
- López-Cariboni, Santiago, and Menéndez, Irene, 2017, The Politics of Non-Contributory Social Policy: Labor Market Institutions and Left Strategies in the Developing World. Unpublished manuscript.
- Lustig, N., 2000, Crises and the poor: Socially responsible macroeconomics. Working Paper, n. 108, *Inter-American Development Bank, Sustainable Development Department*
- Mares, I. and Carnes, M. E., 2009, Social Policy in Developing Countries. *Annual Review of Political Science*, 12:93–113.
- Marx, P., 2014, The insider-outsider divide and economic voting: Testing a new theory with German electoral data, *Socio-Economic Review*, 14(1), 97-118..
- McGuire, J. W., 1999, Labor Union Strength and Human Development in East Asia and Latin America. *Studies in Comparative International Development (SCID)*, 33(4), pp. 3–34.
- Mimmi, L. M., 2014, From informal to authorized electricity service in urban slums: Findings from a household level survey in Mumbai. *Energy for Sustainable Development*, 21:66–80.
- Min, B., 2015, *Power and the Vote: Elections and Electricity in the Developing World*. Cambridge University Press.
- Min, B. and Golden, M., 2014, Electoral cycles in electricity losses in India. *Energy Policy*, 65:619–625.
- Murillo, M. V., 2009, *Political Competition, Partisanship, and Policy Making in Latin American Public Utilities*. Cambridge University Press.

- Nichter, S., 2008, Vote Buying or Turnout Buying? Machine Politics and the Secret Ballot. *American Political Science Review*, 102(01), pp. 19–31.
- Perry, G., Maloney, W., Arias, O., Fajnzylber, P., Mason, A., and Saavedra, J., 2007, *Informality: Exit and Exclusion, World Bank Latin America and Caribbean Studies*. The World Bank.
- Pribble, J., 2013, *Welfare and Party Politics in Latin America. Welfare and Party Politics in Latin America*. Cambridge University Press.
- Rosenzweig, M. R., 1988, Labor markets in low-income countries. *Handbook of development economics*, 1:713–762.
- Ross, M., 2006, Is Democracy Good for the Poor? *American Journal of Political Science*, 50(4), pp. 860–874.
- Rudra, N., 2002, Globalization and the decline of the welfare state in less-developed countries. *International Organization*, 56(02), pp. 411–445.
- Rudra, N. and Haggard, S., 2005, Globalization, Democracy, and Effective Welfare Spending in the Developing World. *Comparative Political Studies*, 38(9), pp. 1015–1049.
- Seelkopf, L. and Starke, P., *Forthcoming*, Social policy by other means: Theorizing unconventional forms of welfare production. *Journal of Comparative Policy Analysis*.
- Singer, M. M., 2013, What goes around comes around: Perceived vulnerable employment and economic voting in developing countries. *European Journal of Political Research*, 52(2), pp. 143–163.
- Smith, T. B., 2004, Electricity theft: A comparative analysis. *Energy Policy*, 32(18), pp. 2067–2076.
- Stampini, M., and Tornarolli, L., 2012, The Growth of Conditional Cash Transfers in Latin America and the Caribbean: Did They Go Too Far? *IDB Policy Brief, IDB-PB-185*(November).

- Stokes, S. C., 2001, *Mandates and Democracies: Neoliberalism by Surprise in Latin America*. Cambridge University Press.
- Soifer, H. D., 2015, *State Building in Latin America*. Cambridge University Press.
- Talvi, E. and Vegh, C., 2005, Tax base variability and procyclical fiscal policy in developing countries. *Journal of Development economics*, 78(1), pp. 156-190.
- Wibbels, E., 2006, Dependency Revisited: International Markets, Business Cycles, and Social Spending in the Developing World. *International Organization*, 60(02), pp. 433–468.
- Wibbels, E. and Ahlquist, J. S., 2011, Development, Trade, and Social Insurance. *International Studies Quarterly*, 55(1), pp. 125–149.
- Wilson, J., 1980, The politics of regulation. *New York: Basic Books*.
- Winkler, H., Simões, A. F., and Rovere, E. L. L., 2011, Access and affordability of electricity in developing countries. *World Development*, 39(6), pp. 1037-1050.
- Wren-Lewis, L., 2015, Do infrastructure reforms reduce the effect of corruption? Theory and Evidence from Latin America and the Caribbean. *World Bank Economic Review*, 29(2), pp. 353–384.
- Zucco Jr., C., Luna, J. P., and Baykal, G. O., 2016, Do Conditionalities Increase Support for Government Transfers? Unpublished.