Electoral Risk and Vote Buying, Introducing Prospect Theory in the Experimental Study of Clientelism

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January 5, 2022

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Authors are listed in alphabetical order. We thank Jack Levy for his detailed comments and helpful revisions. We also thank Barbara Vis, Janne Tukiainen, Lauri Saaksvuori and Salomo Hirvonen for their suggestions. We thank O'Higgins University for funding this project, and the participants of the colloquium at the Centre for Experimental Social Sciences (CESS) at Universidad de Santiago (Chile), the participants of the "DPINVEST & INVESThub Workshop on Interventions, Evaluations and Field Experiments" (Turku, Finland) and the participants of the Political Science and Economics seminars at Turku University, Finland. Javiera Tobar, Cristopher Reyes and Bastián Garrido provided excellent research assistance.

Abstract

Most traditional theories of clientelism assert that parties in need of securing electoral support invest in vote buying. We consider this framework limited because it assumes that losses and gains affect a party's decision-making process in a comparable way, and because it assumes that the decision-making process of clientelist political parties focuses only on absolute levels of utility while overlooking changes in outcomes with respect to a reference point. We hypothesize that parties are risk-averse in the domain of gains and risk-seeking in the domain of losses—i.e., losing an election hurts more than winning an election pleases. Unlike traditional theories of clientelism, we argue that vote buying is most likely when parties are probable winners or have experienced important losses in the past. After formalizing a theory of vote buying, we tested it by designing an economic experiment. Exploiting these novel experimental data, we show that prospect theory bridges important unexplained gaps in the literature.

Abstract length: 155 words.

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Keywords— vote-buying; clientelism; experimental methods; expected utility theory; prospect theory

I. Parties With a Gambling Problem: Vote Buying as a Risky Yet Persistent Strategy

Vote buying is a very risky strategy.[1] First, it is illegal.[2] Buying votes requires extra care to avoid reputational, electoral, and legal costs. For instance, due to the stigma associated with vote buying, clientelist political parties might risk electoral support from the wealthy (Weitz-Shapiro 2012) or from society in general (González-Ocantos, Kiewiet de Jonge, and Nickerson 2014). Second, vote choices are secret, thus preventing parties from conducting effective monitoring and enforcement (Nichter 2008). Even in developing contexts such as Africa (Wantchekon 2003; Vicente 2014), the Philippines (Hicken, Leider, et al. 2015; Hicken, Leider, et al. 2018) and Latin America (Hidalgo and Nichter 2015; Oliveros 2019; V. Murillo, Oliveros, and Zarazaga 2021), voters might accept the private benefit but then secretly vote for another party (Stokes 2005; Nichter 2008; Szwarcberg 2013; González-Ocantos, Kiewiet de Jonge, and Nickerson 2014; Vicente 2014), rendering the risks taken by the clientelist party worthless.[3]

If vote buying is risky (Szwarcberg 2013, p. 43), expensive (Zarazaga 2014, p. 35), and uncertain (Rueda 2017), how do clientelist political parties allocate scarce resources efficiently? In this paper, we address two related but more specific questions about strategic vote buying related to the role of political contestation and sunk costs. First, *How risk-tolerant are parties when facing contested elections?* Second, *Do clientelist political parties consider "yesterday's" spending levels when buying votes "today"?* These are important questions, as they directly speak about a party's decision-making process when faced with risk. Unfortunately, we find that the literature provides conflicting or inconclusive answers to these questions. This paper posits that these gaps in the literature originate in a misunderstanding about a party's decision-making processes under risk.[4]

Traditional theories of clientelism assert that vote buying is more likely when parties are probable electoral losers, while ignoring prior spending levels on vote buying. We consider this framework is limited in a number of ways. First, it assumes that losses and gains affect party's decision-making process in a comparable way—i.e., winning elections feels good as losing one hurts. Second, it

[1] Vote buying is defined as the distribution of rewards during elections in contingent exchange for vote choices (Nichter 2014, p. 316).

[2] Bahamonde (2020) explains that in the United States, vote buying was illegal as early as the 1700s.

[3] In fact, since clientelism may also work even with low levels of enforcement and monitoring (Hicken and Nathan 2020), investments in clientelism are always done in contexts of very high risk.

[4] For the purposes of this paper, we focus exclusively on quantitative research. To name just a few important qualitative contributions, see Scott (1972), Auyero (2000) and Szwarcberg (2013).

assumes that the decision-making process of clientelist political parties focuses only on absolute levels of utility while overlooking changes in outcomes with respect to a reference point. In this paper we contest these assumptions.

By introducing prospect theory (Kahneman and Tversky 1979) in the study of clientelism, our argument is twofold. First, clientelist political parties buy more votes when they are probable winners because decision-makers in the domain of gains usually underweight, or "play down," the probability of electoral success, making risky strategies such as vote buying more attractive (risk-aversion). Second, clientelist political parties buy more votes when their levels of sunk costs are high because decision-makers in the domain of losses usually overweight, or "exaggerate," the probability of electoral losses, making risky strategies such as vote buying more attractive (risk-seeking). In these cases, "gambling" more money on vote buying will seem more attractive because clientelist political parties will feel the need to aggressively compensate for prior losses. Thus, in several respects we stand opposite to traditional explanations of vote buying that argue vote buying should be more common when parties are probable losers. However, in other respects our findings complement past research, but for different reasons: incumbents do not "gamble" more on vote buying because of resource availability only, but also because they feel the need to "break even."

Building on traditional theories of clientelism, we formalized a basic theory of vote buying, and then we tested it by designing an economic experiment. The voting experiment was carefully designed to capture different domains of gains and losses as well as varying reference points. Exploiting these novel experimental data, we show that prospect theory sheds light on several inconsistencies present in the literature. As the statistical analyses suggest, because of risk-aversion in the domain of gains and risk-seeking in the domain of losses, experimental subjects adopt the riskier alternative of buying votes in a way that is unpredicted by standard expected-value calculations.

We contribute to the literature in three ways. First, while prospect theory has been influential in political science only among international relations scholars, the theory has not received much attention among political economists nor comparative politics scholars (Mercer 2005, p. 2, Vis 2011, pp. 338–339). We believe this is a serious issue that should be corrected. We intend to bridge this gap by offering an alternative theory of the political economy of vote buying taking prospect theory as a starting point. Second, in this paper we follow Levy (1992b, p. 297) as we carefully try to not only show that the observed behavior of political agents is consistent with prospect theory but that prospect theory provides a better explanation of vote buying than do traditional descriptions of

vote buying. Third, and from a methodological standpoint, we follow Aldrich and Lupia (2011) and McDermott (2002) in that there is a need for implementing experiments aimed to test formal models, and such, we believe that political scientists might benefit from this process to establish empirical validation of formal models (McDermott 2002, p. 45). Since the formal model follows traditional theories of clientelism, it is particularly relevant to test the model in an experimental setting. Finally, our paper is especially relevant to the study of democracy and development, where experiments have been described as "a promising research tool" (De La O and Wantchekon 2011).

This paper proceeds as follows. First, we present several gaps present in the vote-buying literature. Second, we explain the basic concepts behind prospect theory, while providing more details about the direct implications for the clientelism and vote-buying literature. Third, following the basic intuitions of traditional voting games, we offer a basic formal model of vote buying. Fourth, we present our experimental design which is based on the formal model. Fifth, we analyze the experimental data. Sixth, we conclude by readdressing our results and discussing possible avenues for future research.

II. Traditional Theories of Clientelism

Neumann and Morgenstern (1947) introduced one of the first theories of decision making under risk (McDermott 1998, p. 15). Since then, a specific set of behavioral assumptions have dominated political science (McDermott 2004, p. 289, Levy 1997, p. 87), and traditional accounts of vote buying have been no exception. Just to name a few examples, Nichter (2008) used game-theoretical techniques to introduce the concept of "turnout buying," suggesting that parties deliver private benefits even when monitoring is absent. Gans-Morse, Mazzuca, and Nichter (2013) offer a formal model to explain that clientelist parties utilize a mix of four clientelist strategies during elections (vote buying, turnout buying, abstention buying, and double persuasion), while Rueda (2015, p. 428) presents a game-theoretical model of vote buying in which a broker sustains bribed voters' compliance by conditioning future bribes. Similarly, Gallego (2014, p. 401) develops a formal model of political clientelism in which a candidate disciplines a majority of voters through the promise of a future flow of benefit.

We contest this traditional approach focused on absolute gains by shifting the attention to losses and context-dependent decision-making processes. It needs to be clarified, however, that the root of the problem is *not* methodological (i.e., the use of game theory) but analytical. In particular,

we contest the assumed decision-making process under risk embedded in most traditional accounts of vote buying. We find it limiting that most research focuses on absolute levels of wealth, while assuming that whether decision-makers are in a domain of gains or losses should not affect their attitudes toward risk. We believe that a shift in focus is a valuable exercise because strategic behavior under risk has usually been modeled according to assumptions about expected-value calculations that are "unrealistic" (Aldrich and Lupia 2011, p. 124). Since these assumptions have also been integrated in most traditional vote-buying theories, our paper hopefully clarifies some empirical deviations present in the literature.

A large body of experimental research finds that many behavioral expectations under risk do not comport with the assumptions present in game-theoretical descriptions of some political behaviors (Battalio, Kagel, and Jiranyakul 1990, p. 25, Mercer 2005, p. 1). As a matter of fact, Bernoulli—the forefather of the expected utility theory (Fishburn 1977)—was the first to notice that people would not always behave on the basis of the expected value of a game (McDermott 1998, pp. 15–16). From a decision-making standpoint, many find that the assumptions underlying the classical theory of risky choice are "systematically violated" (Quattrone and Tversky 1988, p. 719) and that both variance and semivariance ideas of risk have been shown to be "inconsistent" with von Neumann axioms (March and Shapira 1987, p. 1405). Furthermore, there seems to be a strong consensus that standard assumptions about strategic behavior under risk "continually failed empirically" (Vis 2011, p. 335), while others find that experiments have shown that "actual behavior and decisions frequently deviate from the neoclassical predictions" (Fatas, Neugebauer, and Tamborero 2007, p. 167).

The empirical literature consistently finds that "people systematically violate the predictions of expected utility theory" (Barberis 2013, p. 173). In fact, Levy (1997, p. 87) finds it "ironic" that just as rational choice has become the most influential paradigm in political science, the theory has come under heavy attack by experimental *and* empirical evidence. The problem is that these assumptions have also been embedded in most of the vote-buying literature. Thus, while much progress has been made in the understanding of clientelism and vote buying (see Hicken 2011 for an excellent review), there are several inconsistencies that authors tend to ignore or treat as unimportant empirical deviations. We believe these inconsistencies originate in the wrong understanding of decision-making under risk. Consequently, rather than neglecting traditional theories of clientelism, our paper seeks to complement such progress by bridging several gaps in the literature. In this paper, we address two important inconsistencies relevant to the understanding of vote buying. We concentrate on

these two aspects because both speak directly to the party's decision-making process under risk.

Political Contestation The first inconsistency that causes confusion in the clientelism literature is the role political contestation plays in vote-buying. On the one hand, some explain that the more contested an election, and hence the more risks of losing the election, the more incentives to resort to vote buying (Scott 1972; Shefter 1977; Kitschelt and Wilkinson 2006; Diaz-Cayeros 2008; Keefer and Vlaicu 2017; Corstange 2018). Yet, there are recent contributions that report very large levels of vote buying in contexts of *low* political contestation. For instance, González-Ocantos, Jonge, et al. (2012, pp. 205–206), who fielded a list experiment in Nicaragua for the 2008 elections, find that while the incumbent party enjoyed 40% of the electoral support, 24% of registered voters were offered a clientelist gift in an election that "[was] not heavily contested." Why would a party buy such a *massive* number of votes in a safe and uncontested election? Are parties wasting their resources?[5]

On the other hand, some have argued that vote buying should be higher in contexts of *low* political contestation. For instance, Medina and Stokes (2002) explain that political parties that hold an electoral monopoly tend to offer clientelist goods to deter the entry of political challengers. Similarly, Magaloni (2008) explains that hegemonic autocracies such as the PRI in Mexico have survived thanks to successful deterrence strategies and clientelism (see also Hagene 2015, p. 146). Unfortunately, these explanations seem at odds with normative theories in the risk-management and insurance-buying literature in economics. If we think of vote-buying as an insurance against political losses, then utility-maximizer parties should "buy insurance" only in risky scenarios, that is, in cases when there is a high probability that the expected electoral outcome is a loss. As Arrow (1996, p. 111) explains, "those most at risk will buy more insurance than the others," a behavior that he describes as "adverse selection."

Whether parties target their resources when they are likely winners or losers is a fundamental question, yet the literature is quite inconclusive about the role of political contestation on vote buying. In fact, Weitz-Shapiro (2012, p. 570) suggests that "there is no consensus about the relationship between high levels of political competition and the phenomenon of clientelism." We believe that part of this lack of consensus is due in part to a misunderstanding of a party's decision-making under risk.

[5]In fact, other rather more extreme examples include cases where political participation is effectively banned, like in Russia (Saikkonen 2021). However, due to space concerns we leave both authoritarian clientelism (Miscoiu and Kakdeu 2021) and competitive authoritarian clientelist cases for future research.

Sunk Costs In other respects, our argument somewhat conforms with past research, but for different reasons. Our explanation is different because it considers that decision-makers weigh their options with respect to a reference point, which in turn explains higher levels of vote buying. Traditional vote-buying theories usually explain that incumbents enjoy important comparative advantages relative to political challengers. Since incumbents are in office while campaigning, they are usually able to divert public resources to vote buying (Cox and McCubbins 1986; Dixit and Londregan 1996; Daglberg and Johansson 2002; Hicken 2007; Grzymala-Busse 2008). While incumbents' relatively higher levels of clientelist spending may be explained by their disposable public resources, we believe this is a necessary but insufficient condition to explain vote buying.

Building on Szwarcberg (2013, p. 33), we posit that having the *capacity* to buy votes is a necessary but insufficient condition to explain the *use* of clientelism. Thus, while incumbents might have more available resources, they will not necessarily engage more aggressively in vote buying. Taking this important insight as a starting point, we consider an additional scope condition under which clientelist political parties spend more on vote buying. In particular, we argue that incumbents not only need to have the capacity to deliver—as traditional accounts of vote buying assert—but also have a history of large prior investments; the larger prior spending levels are, the larger the spendings will be. The argument does not rely on some deterministic treat of the incumbent but about the need to compensate for prior losses or "sunk costs."

Incumbents are usually portrayed as if they were always in the domain of gains, as the "incumbency *advantage*" concept implies. However, we tend to disagree with this view. First, the material, coordination, and political costs of maintaining a large-scale vote-buying operation is very high (Scott 1969; Auyero 2000; Szwarcberg 2013). Party machines need to have the capacity to grant public jobs to their clients (Calvo and M. V. Murillo 2004), but also to organize rallies (Szwarcberg 2012), deliver benefits (Brusco, Nazareno, and Stokes 2004), and "*acarrear*," (Hilgers 2011, p. 577) and monitor clients at the best of the machine's abilities (Stokes 2005, p. 317). Second, incumbents face a number of uncertainties. Party machines cannot effectively monitor their clients (Hicken 2011) and struggle obtaining resources to be delivered in a clientelist manner (Auyero 2000; Zarazaga 2014). If vote buying is expensive and uncertain, *what motivates clientelist political parties to buy such massive numbers of votes, as the Nicaraguan example above suggested?* In this context of uncertainty and risk, we argue that clientelist political parties will "gamble" more money and resources to compensate for prior losses. For every additional unit incumbents spend on vote buying,

they will feel the need to spend even more to "break even" to try to compensate for prior losses or clientelist investments.

In sum, the way in which the literature assesses the role of political contestation and sunk costs on vote buying leaves many unaddressed gaps. First, the literature seems to suggest that clientelist political parties waste valuable resources when buying votes in uncontested elections. Second, the literature explains higher levels of clientelist spending by focusing only on current available resources while overlooking the role of prior losses or investments (i.e., sunk costs) on vote buying. We interpret this apparent "misbehavior" (Thaler 2015) as an analytical problem, particularly, a misunderstanding of how political parties make decisions under risk. To bridge these gaps, the next section introduces prospect theory (Kahneman and Tversky 1979) to the study of vote buying. Importantly, this section sheds light on why parties buy votes in low-risk contexts and why sunk costs might explain massive spendings on vote buying.

III. Prospect Theory and Its Implications for Clientelism: When Losses Loom Larger than Gains

Prospect theory is a theory of decision making under conditions of risk (McDermott 1998, p. 15), and it was developed by Kahneman and Tversky (1979) as a way to incorporate empirically observed violations of expected utility (Levy 1992a, p. 179, McDermott 2004, p. 290). Since its development, prospect theory has emerged as a "leading alternative" (Levy 1992a, p. 171), "best available description," (Barberis 2013, p. 173) and "empirically correct theory" (Vis 2011, p. 334) about how people evaluate risk (Ackert et al. 2006, p. 5), particularly excelling in providing a model that offers "descriptively accurate formulations" of the human decision-making process (McDermott 2004, p. 292).

While the theory has been most influential among international relations scholars, it has unfortunately had "limited" influence on political science as a whole (Mercer 2005, p. 2). Still, there are several contributions in comparative politics that take prospect theory as a framework. For instance, Weyland (2002) studies levels of loss aversion of dictatorships when they perform radical economic reforms. Vis (2009) and Vis (2010) study welfare state reform showing that political gains are the necessary condition for not-unpopular reforms, while deteriorating socio-economic situations or political losses are necessary for unpopular reforms. Additionally, Steinacker (2006) studies issue

salience, Schumacher et al. (2015) focuses on party platform change, while Carreras (2019) argues that "citizens who were in the domain of economic losses were more likely to take a risk and vote in favor of Brexit."

Since others have already provided very comprehensive overviews of prospect theory (Levy 1992a; Levy 1992b; Levy 1997; McDermott 1998; McDermott 2004; Mercer 2005; Mercer 2005; Vis 2011; Barberis 2013; Linde and Vis 2017; Vieider and Vis 2019), we will limit this section to describing its main components. The theory is based on two empirically derived concepts (Vieider and Vis 2019, p. 334). First, utilities are defined over changes in outcomes with respect to a reference point ("reference dependence"). Note the sharp contrast with expected value theories, where the focus is on absolute levels of wealth (Ackert et al. 2006, pp. 5–6). Second, individuals distort values of possible outcomes in an asymmetrical, non-linear, S-shaped way when making risky decisions ("value-function dependence"). Note also another important difference with expected value theories, where agents are assumed to treat expected utility values linearly, "even with training and effort" (McDermott 2004, p. 293). As McDermott (1998, p. 18) clearly summarize it, "prospect theory predicts that individuals tend to be risk averse in a domain of gains [i.e., when things are going well], and relatively risk seeking in a domain of losses [i.e., in the midst of a crisis]." This distinction also separates prospect theory from expected value theory, where the latter assume that whether decision-makers are in a domain of gain or loss should not affect their attitude toward risk (Mercer 2005, p. 1).

Reference dependence is the central idea in prospect theory (Barberis 2013, p. 178, McDermott 1998, p. 40). This aspect of the theory allows people's preferences to depend on the circumstances they face (McDermott 2004, p. 293, Fatas, Neugebauer, and Tamborero 2007, p. 168, March and Shapira 1987, p. 1412, McDermott 2004, p. 294), which is usually (Vis 2011, p. 335), but not always (Levy 1992a, p. 174), the *status quo*,[6] and how it shifts over time (McDermott 1998, p. 28, McDermott 2004, p. 301).[7] As Kahneman and Tversky (1979, p. 273) put it more clearly, "the carriers of value or utility are changes of wealth, rather than final asset positions." Simply put, prospect theory pays considerable attention to losses.[8] In fact, Levy (1992a, p. 171) explains that individuals "give

[6]The location of the reference point emerges as a critical factor in the analysis of decisions (Kahneman and Tversky 1979, p. 288). Levy (1992a, p. 174) explains that the reference point could also be an "aspiration level." In a similar way, Koszegi and Rabin (2006, p. 1135) develop the idea of a reference point that consists of "expectations rather than the status quo." We owe this point to Salomo Hirvonen.

[7]While we do not focus on the role of emotions, others have found that "sad people will take more risk when trying to avoid a certain loss" (Campos-Vazquez and Cuilty 2014, p. 6).

[8]Losses have also been the focus in other areas of political science (McDermott 2004, p. 298). For instance, Lau

more weight to losses than to comparable gains," which translates into the famous statement *losses loom larger than gains*. An important consequence is that, contrary to the assumption of invariance (Barberis 2013, p. 186), a shift in the reference point should also lead to reversals of preferences (Quattrone and Tversky 1988, p. 719, Thaler and Johnson 1990, p. 643, Levy 2003, p. 218).

Value-function dependence is another central idea in prospect theory. Importantly, the shape of the value function is non-linear. From an analytical point of view, we consider this to be *the* feature that trumps the normative expectations contained in standard expected-value theories. Formally, the asymmetrical curvature of the value-function explains why individuals exhibit risk-averse behaviors in choices among gains but risk-acceptant behaviors in choices among losses (Levy 1997, p. 87). In the domain of gains, the concavity of the value function encourages risk aversion by undervaluing the probability of success of a gamble relative to a certain outcome (underweighting). However, in the domain of losses, the convexity of the value function encourages risk-seeking behaviors by exaggerating the probabilities of rare but catastrophic losses (overweighting) (Levy 1992a, pp. 183–184). Typical examples are individuals who tend to underweight likely events such as a heart attack (not changing diet) but overweight rare events such as a plane crash (praying before landing). Unlike theories based on expected-value calculations, Kahneman (2012) explains that the process of underweighting of likely events contributes to risk aversion, while very unlikely events are overweighted "quite grossly or neglected altogether" (see also McDermott 1998, p. 32).

In prospect theory, both reference dependence and the shape of the value function lead to a more accurate description of decision-making under risk. In fact, experimental evidence consistently finds evidence of decision-makers distorting probabilities in a non-linear way (Levy 1997, p. 87). In particular, the evidence suggests that in the domain of losses, risk-seeking decision-makers take disproportionate risks to avoid certain losses, while in the domain of gains, risk-averse decision-makers are excessively eager to secure gains (Levy 1992b, pp. 297, 299–300). This is explained because decision-makers "have difficulty with probability at extreme ranges" (McDermott 1998, p. 30). Finally, it is important to note that while attitudes toward risk are usually portrayed as aspects of personality (March and Shapira 1987, p. 1406), prospect theory is *not* a personality theory; that is, it is not necessary to know about the individual personality traits of decision-makers in order to predict behavior (McDermott 2004, p. 293, Vis 2011, p. 335)

The implications for vote buying are considerable. In sharp contrast to traditional vote-buying

(1985, p. 132) explains that "negative information is more influential than comparable positive information."

theories, prospect theory posits that clientelist parties will likely buy votes when they are probable winners or have experienced important losses in the past

Clientelist parties will likely buy more votes when they are probable winners because decision-makers will exaggerate the small probability of losing the election. We expect vote buying to be an attractive strategy in favorable electoral scenarios due to the absolute aversion and intolerance to the (small) probability of losing the election. The mechanics of such a decision-making process should then make clear that there is no "wasting" when when buying votes while in the domain of gains. This expectation is consistent with prospect theory. In fact, empirical studies confirm that "actors perceive themselves to be in the domain of losses more often than we would normally expect," even if they are not (Levy 1992b, p. 291; see also Lau 1985). This implies that loss aversion explains why decision-makers are more concerned with preventing a decline than increasing gains (Levy 1992b, p. 285, see also Levy 1997, p. 89). To sum, when things are going well electorally, clientelist political parties will tend to buy more votes because "future losses hurt more than future gains gratify" (Levy 1992b, p. 285).

Clientelist parties can be expected to buy more votes when they have experienced important losses or when they have had high spendings levels in the past, making risky strategies (such as vote-buying) more attractive by altering the decision-makers' reference points. Altering the reference point downward increases risk-seeking behaviors because of the tendency of individuals in the domain of losses to try to "break-even" (Thaler and Johnson 1990). This implies that clientelist political parties should be expected to buy more votes, not necessarily because they want to win the next election but because they will try to compensate for past losses or sunk costs. We theorize that clientelist parties will buy more votes when their past electoral losses or past levels of clientelist investments have been high. Clientelist parties that have a history of lost elections or that have invested considerable amounts in vote buying in the past are possible examples of this mechanism. Levy (1992b, p. 297) notes that the elasticity of the risk-seeking behavior is quite high because the magnitudes of past losses need not be large in order to induce the behavior. This means that even small losses can be expected to induce risk-seeking behaviors. Consequently, we expect a steeper predicted effect in the data analyses. To sum, past losses are harder to accept, and hence when things have been bad in the past, decision-makers are more likely to make risky choices "today" to recover "yesterday's" losses (McDermott 2004, p. 294).

IV. A Formal Model of Vote-Buying

Formal models can usually help experimentalists to determine which theoretical settings and equilibria are most relevant to a particular causal hypothesis (McDermott 2002, Aldrich and Lupia 2011 and Barberis 2013, p. 174). Thus, we developed a vote-buying game within the Downsian "spatial" paradigms (Downs 1957; Enelow and Hinich 1990; Plott 1991) to test the descriptive accuracy of the game-theory model in the experimental section of this paper (Lupia and McCubbins 1998, Bassi, Morton, and Williams 2011, p. 559, Dickson 2011, Tyszler and Schram 2016, p. 361, Vieider and Vis 2019, p. 1).

Following this tradition, we consider an electorate of n voters. Voters cast votes for a leader to implement a common policy γ from the set $\Gamma = \{1, 2, ..., 100\}$. Each citizen i has an ideal point x_i, which is an *iid* draw from an uniform distribution over Γ. When policy γ is implemented, payoffs of citizen i are given by $u(x_i, \gamma) = D - |x_i - \gamma|$, where D represents the utility of implementing any given policy. This payoff can be incremented by transferences from both parties to voter i.

In this election, there are two candidates. One "left-wing" party and one "right-wing" party. The left-wing (right-wing) candidate represents a policy γ_L (γ_R), which is an *iid* draw from an uniform distribution over $\{1, ..., 50\}$ ($\{51, ..., 100\}$). The location of these policies (γ_L and γ_R) give us the number of voters n_L leaning towards the left-wing candidate, while the number of voters leaning towards the right-wing party is given by $n_L + n_R = n$. While we consider that voters are attached to an ideological continuum, we do so with the sole purpose of modeling preferences—both formally and experimentally.[9]

Both parties negotiate with only one of these n voters. That voter is randomly selected from the total population n. Observe that the higher the n, the lower the representation in the election of this voter. That is, a larger n necessarily implies that every individual electoral choice matters less. However, if n is small, negotiating with this voter may be more attractive to political parties. This is because negotiating with a large number of voters is costly. We assume that each party has a budget (B) that they can use to buy votes. If a party decides not to negotiate with the voter (or the voter does not accept the offer), the party keeps this budget. The profits of party i is given by,

[9] Ultimately, experimental subjects are not told anything about ideology. They only observe that there are a number of "points" associated with the victory of party A or party B. In this sense, voters lean ("ideologically") towards the party that gives them more points.

$$\pi_i(s_i, a_j) = W \cdot e_i + (1 - s_i \cdot a_j) \cdot B \tag{1}$$

where W ($W \geq B$) is a constant that represents how much each party values winning the election, $e_i = 1$ if party i wins the election, 0 otherwise, and s_i is the fraction of B that the party offers to voter j who can accept the offer ($a_j = 1$) or not ($a_j = 0$). We study one version of this party-voter interaction, namely, when both parties make simultaneous offers to the voter, and voters decide whether to accept the offer or not.

The timing of the game is as follows: at the beginning of the game, n voters and two political parties are randomly located on their respective ideal points: voters along Γ, the "left-wing" candidate along $\{1, ..., 50\}$, and the "right-wing" candidate on $\{51, ..., 100\}$. All locations are public information, as well as every party's budget B, the total number of voters (n), and the number of supporters of each party (n_L and n_R). In this game, each party simultaneously decides whether to make a vote-buying offer to the voter. If a party decides to negotiate with the voter, the party privately offers the voter to buy his vote. Then the voter decides whether or not to take the offer, or which one to accept if he receives two offers. If he accepts an offer, he should vote for that candidate.[10]

Equilibrium In this case, both parties can offer certain amounts in exchange for electoral support. Note that parties only have incentive to negotiate with a voter if he is the pivotal voter. That means that $|n_L - n_R| \leq 1$, and that voter i supports the ex-ante winner of the election ($i \in max\{n_L, n_R\}$). The voter prefers the party closer to her ideal point. If both parties are located at the same distance, the voter is indifferent. Denote by $i^* \in \{L, R\}$ the preferred party of the voter, and $-i^*$ the other party.

Note that, naturally, both parties will want to make different offers. If the voter is pivotal, the less preferred party has incentive to offer him a certain amount m_{-i^*}, such that he perceives more utility voting for that party rather than voting for the opposite party, expressed as follows:

$$\begin{aligned} m_{-i^*} &\geq (D - |x_{i^*} - \gamma_{i^*}|) - (D - |x_{i^*} - \gamma_{-i^*}|) \\ &= |x_{i^*} - \gamma_{-i^*}| - |x_{i^*} - \gamma_{i^*}|. \end{aligned} \tag{2}$$

[10] It is important to consider that to simplify the game (and the experiment), accepting the offer necessarily implies compliance. That is, accepting the offer means voting for the party the voter accepted the offer from. We leave for future research the case where the voter may defect.

Parties expect winning the election but have limited budgets. Hence, they want to win the election at a minimum cost. Given that $|x_{i^*} - \gamma_{-i^*}| > |x_{i^*} - \gamma_{i^*}|$, it is more difficult for the opposite party to incentivize the voter to change votes. If the opposite party offers to the voter all its budget $m_{-i^*} = B$, the party i^* may offer him $m_{i^*} = |x_{i^*} - \gamma_{-i^*}| - |x_{i^*} - \gamma_{i^*}| + B$ and the voter will end up indifferent to both parties. Therefore, in equilibrium, the preferred party offers $m_{i^*} = |x_{i^*} - \gamma_{-i^*}| - |x_{i^*} - \gamma_{i^*}| + B$, the opposite party offers $m_{-i^*} = B$, and the voter accepts the offer of party i^*.

V. Experimental Design: Buying Votes in the Lab

Building on our formal model of vote buying, we designed a lab economic experiment. The experiment was conducted in Chile by the *Centre for Experimental Social Sciences (CESS)* administered by the *University of Santiago* and *Oxford University, Nuffield College* between April 20 2021 and May 28 2021. It was programmed in `O-tree`, the online version of `Z-tree` (Fischbacher 2007). Following Harrison (2006) and others, our experimental design minimizes hypothetical bias and "cheap talk" by compensating subjects with real money according to their decisions (Morton and Williams 2010; Dickson 2011). At the beginning of each experimental session all participants were required to successfully complete two practice rounds.[11] Those data were not used in the statistical analyses. In addition, subjects received a show-up payment of $2,000 CLP (≈ €2.1). Payoffs depended on the quality of individual decisions.[12] Figure 1 shows the distribution of payoffs expressed in actual currency, by role. Table A1 shows summary statistics broken down by pre-treatment observables. These covariates were captured by a battery of socio-demographic questions delivered at the end of the study.[13] A total of 102 subjects were recruited. Each subject played the game three times. The total sample size is 306. For every new game, a whole new randomization process took place.[14] Formally, we follow an in-between-subjects design, where different groups of individuals are randomly assigned to various experimental or control conditions (McDermott 2002; Tyszler and Schram 2016;

[11] To make sure participants understood the dynamics of the game, they were shown two examples of the voting game. Participants were required to enter the correct number of points each hypothetical participant would have received in each example. Importantly, all actual participants had to enter the exact number of points to continue playing the game.

[12] Levy (1997, p. 95) notes that in poorer societies (like the Chilean society), conducting research with relatively smaller monetary incentives is still meaningful. However, see Morton and Williams (2010) and Bassi, Morton, and Williams (2011).

[13] The table also details the same information conveyed in Figure 1.

[14] That is, participants received a role, an "ideology," a party endowment and a contestability structure.

Hwang 2021). The basic experimental flow is depicted in Figure 2.

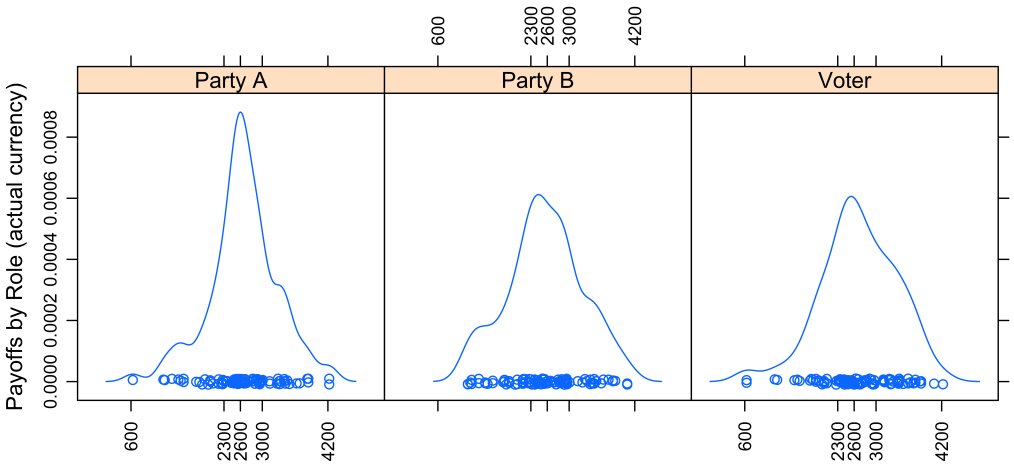

Figure 1: Distribution of Payoffs by Role (actual currency; show-up fee excluded).

Note*: Density plots show the distribution of payoffs expressed in actual currency by experimental condition. Amounts exclude the show-up payment of $2,000 CLP. 0%, 25%, 50%, 75% and 100% quantiles are shown (rounded).*

All transactions were performed exchanging experimental "points." We endeavored to employ neutral terminology to maximize experimental control (Dickson 2011). Thus, throughout all three games, participants bought and sold votes (if any) and accumulated and lost wealth expressed purely in experimental points. Every experimental point was equivalent to $0.42 CLP (≈ €0.00045). Participants learned about the conversion when reading the initial instructions. Final payoffs were converted to actual currency at the end of the study.

At the beginning of every game, participants received a role at random. Following Dickson (2011), roles were presented using neutral terminology to maximize experimental control. The design incorporated the following roles: *party A*, *party B*, or *voter*. Every game was played among three players (one *party A*, one *party B*, and one *voter*).

Voters were assigned an "ideological" position at random. TThat is, voters received at random a

certain number of experimental points depending on whether party A or B won the election. For example, if party A won the election, the voter would receive 2,400 points, whereas if party B won the election, the voter would receive 200 points. Hence, the voter in this example should feel "ideologically" closer to party A. The idea was to model party-voter spatial distances, as considered by traditional voting theories (Downs 1957; Enelow and Hinich 1990). The basic premise of this paradigm is that the set of candidates that are ideologically closer to a voter produce more utility in the form of fiscal policies, either in terms of redistributive or free-market oriented policies (Acemoglu and Robinson 2009; Boix 2003, but importantly, see Haggard and Kaufman 2016). In short, our design mimics an electoral market, where we can observe under which conditions different clientelist dynamics developed. Critically, this piece of information was not presented to participants as "ideology," but as the points either electoral outcome would give. In turn, parties also received an "ideological" position that made them "closer" or "farther way" from the voter.

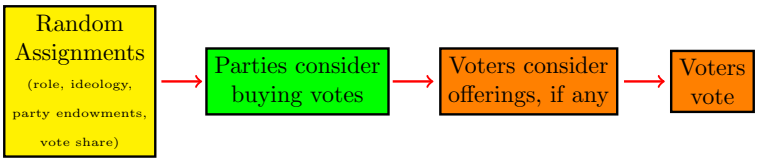

Figure 2: Experimental Flow and Timing of the Voting Game.

Note: *At the beginning of each experimental session, all participants were required to successfully complete two practice rounds. A total of 102 subjects were recruited. Each subject played the game three times, for a total sample size of 306. For every new game, a whole new randomization process took place. Formally, we follow an in-between-subjects design, where different groups of individuals are randomly assigned to various experimental or control conditions.*

Parties received different "endowments" at random as well. The idea was to reflect the fact that some parties are wealthier than others, a factor that might increase the probability of vote buying (Juan Pablo Luna 2014). Note that both parties receive the same endowment. Since our experimental design is an in-between-subjects design, we should be able to observe and exploit the statistical differences (if any) across "parties" with different endowments. Participants acting the "party" role accumulated or lost wealth depending on whether they are elected or not elected. Every time they bought votes at some amount, that amount was discounted from their wealth. For simplicity, voters received zero endowments.[15] In turn, participants acting the "voter" role

[15]This is consistent with the vote-buying literature in that both poor and rich voters are prone to receive clientelist offerings (Bahamonde 2018). See also Szwarcberg (2013).

accumulated or lost wealth depending on whether their party was elected or not elected (as per traditional spatial voting theories) and on whether they decided to sell or not sell their vote. It is important to note that following our formal model and Tyszler and Schram (2016, p. 371), both ideology and party endowments were common knowledge among participants.

In addition, both parties received at random an initial vote share, that is, a *certain* number of (fictional) voters that were going to cast their votes for each party. Overall, this experimental condition mimics the degree to which an election is contested. In particular, this variable accomplishes two goals. First, it puts parties in different electoral contestation environments. In other words, it introduces the element of risk (of losing the election) in the game. Since voters win or lose points when their parties win or lose elections, this risk is also relevant for players acting the "voter" role. Second, it gives (or not) voters a certain amount of electoral leverage. Since Downs (1957)traditional spatial theories of voting have considered that pivotal voters have more weight in an election, and hence, they might have incentive to sell their vote at higher prices. Given that all this information is public, this piece of information is key in our experimental design.

During the second stage, parties decide whether to buy votes and make an offer to the voter. Experimental subjects acting the "party" role that want to buy votes enter a number of points, which ranged from zero to the maximum assigned budget in that round.[16] The design allows for simultaneous offers (i.e., offers from both parties), one offer, or zero offers. In the third stage, voters evaluate offers (if any). If the party(s) decided that it (they) did not want to make an offer at that time, the voter is told that the party(s) did not make an offer. Voters are told that accepting the offer necessarily implies voting for that party.[17]

VI. Statistical Analyses: Risk and Vote Buying

Since the focus of this paper is on vote-buying, we discarded the voter data and analyzed all observations i acting any of the party roles (*party A* and *party B*). In practice, this leaves the data formatted in party-voter dyads. Moving forward, in this paper, we concentrate on one main dependent variable, namely, the amount of the vote-buying offers made by parties (if any). The distribution of such this variable is shown in Figure 3.

[16] Participants acting the "party" role are told that offering a zero amount means that they do not want to buy votes at that time.

[17] For simplicity, we did not include the possibility of defecting. We encourage future designs to include this feature.

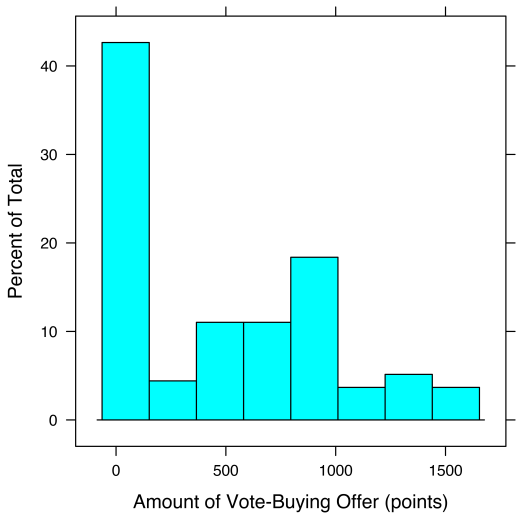

Figure 3: Distribution of the Dependent Variable.

Note: *Since the focus of this paper is on vote buying, we discarded the voter data. The new sample size consisting only of parties is N = 142 (mean = 464, median = 394).*

From an internal validity standpoint, we expect this distribution to vary with the levels of risk the party is dealing with. Accordingly, if the predictions of our formal model (and those of the traditional vote-buying theories) are correct, the amount of the vote-buying offers made by parties should be higher in riskier scenarios (i.e., when facing probable electoral losses). Since vote share, ideological positions, and endowments were public information (as formalized in our game), we believe these theoretical expectations should be consistent with the expectations of the traditional vote-buying literature.

From an external validity standpoint, we believe that voters in real elections can estimate, with some degree of success, actual vote shares (for instance, by looking at electoral polls). Voters can also identify parties' ideological positions. For example, Luna and Zechmeister (2005) identify a number of conditions that are associated with higher levels of elite-mass congruence in Latin America.[18] Voters can also make inferences about a party's endowment, and how those endowments can be redistributed in a clientelist fashion (Auyero 2000). In turn, the literature is consistent in that brokers also provide necessary information about available resources and how to gain access

[18]However, see Visconti (2021).

to them (V. Murillo, Oliveros, and Zarazaga 2021). In sum, we believe this identification strategy appropriately captures the decision-making process of political parties under risk as theorized by traditional vote-buying scholars.

However, based on prospect theory, we have different expectations: parties should buy votes due to risk-aversion in the domain of gains (i.e., when being a likely winner as the idea of losing *sure* electoral support becomes unbearable), and due to risk-seeking in the domain of losses (i.e., when having experienced higher levels of sunk costs). To test these hypotheses we exploit the experimental data described above by fitting the OLS regression model specified in Equation 3,

$$\begin{aligned} \text{Offer}_i = \beta_0 + & \\ & \beta_1 \text{Vote Share}_i + \\ & \beta_2 \Delta\text{Points Accumulated}_i + \\ & \beta_3 \text{Ideological Distance}_i + \\ & \beta_4 \text{Party Budget}_i + \\ & \beta_5 \text{Pivotal Voter}_i + \\ & \alpha_i + \epsilon_i \end{aligned} \tag{3}$$

where *Vote Share* is the percentage of a certain number of (fictional) voters who were going to cast their votes for the party, while Δ*Points Accumulated* captures changes in the accumulated points with respect to the experimental round played in $t-1$. For instance, if a player won 1,200 points at $t-1$ but then lost 500 in the next round, then $\Delta Points\ Accumulated_t = 700$. Importantly, this variable captures sunk costs. The intuition is to determine whether they are *not* considered when evaluating new proposals, as traditional expected-value theories posit. *Party Budget* is the party budget, and α_i is a vector of participant fixed effects.

Following our formal model, we also factor in a parameter Equation 3 β_3 to test the effect of ideological and spatial distances on vote buying. From a substantive point of view, we are interested in testing the core and swing voter hypotheses.[19] The vote-buying literature seems to be quite

[19]Due to space concerns, we do not expand on this debate from a prospect theory standpoint. Additionally, we only consider these two ideal types of voters. There are other types that we do not discuss in this paper for simplicity. For instance, Zarazaga (2016, p. 7) introduces another category—"conditional supporters"—who "will vote for the party machine only as long as unexpected events do not persuade them to do otherwise." In addition to that, we acknowledge that (single-issue) spatial distances might roughly sort core and swing voters in an ideological continuum. Hence, we believe that core voters should be closer to parties while swing voters should be farther away.

divided. In fact, Carlin and Moseley (2015, p. 14) state that "our knowledge of who parties target remains incomplete." On the one hand, Cox and McCubbins (1986) and Zarazaga (2016, p. 7) explain that since constituencies are well known to clientelist parties, they allocate resources to core voters. On the other hand, Lindbeck and Weibull (1987), Dixit and Londregan (1996), Daglberg and Johansson (2002), and Stokes (2005) argue that since allocating resources to individuals who *ex ante* vote for the party is a waste, parties target swing voters. Thus, we do not have specific expectations regarding the sign of β_3.

Equation 3 also has a parameter β_4 to test the effect of having large budgets. On the one hand, Szwarcberg (2013) explains that having economic and material resources available does not necessarily cause more vote buying. Similarly, Hagene (2015, p. 147) finds that political clientelism is "perfectly possible without controlling public funds." On the other hand, Bahamonde (2018) explains that parties with larger budgets will engage in more expensive forms of clientelism, even buying votes from the wealthy. Thus, we do not have clear expectations regarding the sign of β_4 either. Finally, β_5 tests whether parties engaged in more aggressive ways of vote buying by spending more resources on pivotal voters. Following the literature, we should expect that $\beta_5 > 0$.

Simply put, if traditional vote-buying theories are correct, then we should expect that the larger the vote share, the less vote buying that occurs (because there are less risks of losing the election), sunk costs should not matter for vote buying, and pivotal voters produce more expensive vote-buying offers. The closer a party is to the voter is either positive for vote buying (core voter hypothesis) or negative (swing voter hypothesis). The bigger the budget of a party, the more (less) vote buying. However, if the expectations conform with prospect theory, we should expect $\beta_1 > 0$ and $\beta_2 < 0$.

Substantive results are shown in Figure 4 (regression table is shown in Table A2). Overall, results clearly depart from the theoretical expectations of traditional vote-buying theories and widely support prospect theory. Parties do not buy votes when they are losing the election but do when they are winning the election (panel 1 in Figure 4). As prospect theory predicts, decision-makers in the domain of gains will exaggerate the unlikely scenario of losing the election and will become more risk-averse, making the strategy of vote-buying more attractive. Second, unlike traditional expectations, parties will consider sunk costs in their calculations and will buy votes when experiencing prior losses (panel 2 in Figure 4). That is, when parties are in the domain of losses (parties that have spent or lost a considerable amount of resources in the past), they will be more risk-seeking and gamble more money on vote buying.

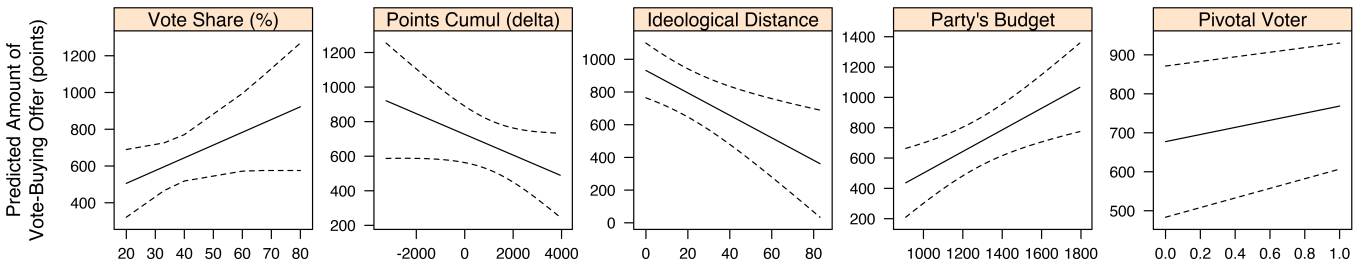

Figure 4: Predicted Values of Vote-Buying Offer.

Note: *Based on the OLS estimates in Table A2, the figure shows the predicted values of the offer made by the party expressed in experimental points. Confidence intervals were constructed using robust standard errors (as shown in Table A2). Substantively, the figure shows that experimental subjects avoid losses by over-securing electoral support even in favorable contexts (panel 1) and that they do consider sunk costs and try to recover losses in the short run by spending more on vote buying (panel 2). Panel 3 indicates that parties spend more on vote buying for voters closer to their ideological preferences. Panel 4 shows that larger party budgets incentivize more spending on vote buying, and that parties do not necessarily consider whether the voter is pivotal or not (panel 5).*

In panel 3 of Figure 4 we find strong support for the core vote hypothesis: political parties buy votes more frequently from voters that are ideologically closer to them. However, we also find that political parties buy these votes at relatively *higher prices* (counter to traditional core voter expectations). In panel 4, results show that parties with larger budgets buy votes at higher prices, while in panel 5 we find no support for the pivotal voter argument.

VII. Discussion

This paper began by identifying that the vote-buying literature has relied almost exclusively on expected-value assumptions at the cost of overlooking several empirical inconsistencies. We have identified two in particular, namely political contestation and the role of sunk costs. To clarify these empirical departures, we have applied basic concepts of prospect theory into the study of vote

buying. After formalizing a voting game within the expected-value framework, we designed and implemented an economic experiment. Results widely conform with prospect theory. In particular, we concentrated our efforts on two findings. First, clientelist political parties buy more votes when they are probable winners because decision-makers in the domain of gains usually underweight ("play down") the probability of electoral success, making risky strategies such as vote buying more attractive (risk-aversion). Second, clientelist political parties buy more votes when they have experienced larger sunk costs in the past because decision-makers in the domain of losses usually exaggerate the probability of unlikely electoral losses, making risky strategies such as vote buying more attractive (risk-seeking). Importantly, in these scenarios, parties that have gambled considerable amounts of resources in the past will tend to engage in more aggressive and expensive instances of vote buying to break even.

We encourage future research, particularly scholars in comparative politics, development, behavioral, and electoral studies, to consider prospect theory as a valid alternative to explain decision-making under risk. In our experiment, we had to sacrifice a number of important aspects, such as the probability of defection and the income distribution among voters. We intend to implement such considerations in future research.

References

Acemoglu, Daron and James Robinson (2009). *Economic Origins of Dictatorship and Democracy*. Cambridge University Press.

Ackert, Lucy et al. (Apr. 2006). "An Experimental Examination of the House Money Effect in a Multi-Period Setting." In: *Experimental Economics* 9.1, pp. 5–16.

Aldrich, John and Arthur Lupia (2011). *Experiments and Game Theory's Value to Political Science*. Ed. by James Druckman et al. Cambridge University Press. Chap. 7.

Arrow, Kenneth (May 1996). "The Theory of Risk-Bearing: Small and Great Risks." In: *Journal of Risk and Uncertainty* 12.2-3, pp. 103–111.

Auyero, Javier (2000). "The Logic of Clientelism in Argentina: An Ethnographic Account." In: *Latin American Research Review* 35.3, pp. 55–81.

Bahamonde, Hector (2018). "Aiming Right at You: Group versus Individual Clientelistic Targeting in Brazil." In: *Journal of Politics in Latin America* 10.2, pp. 41–76.

Bahamonde, Hector (2020). "Still for Sale: The Micro-Dynamics of Vote Selling in the United States, Evidence from a List Experiment." In: *Acta Politica*.

Barberis, Nicholas (Feb. 2013). "Thirty Years of Prospect Theory in Economics: A Review and Assessment." In: *Journal of Economic Perspectives* 27.1, pp. 173–196.

Bassi, Anna, Rebecca Morton, and Kenneth Williams (Apr. 2011). "The Effects of Identities, Incentives, and Information on Voting." In: *The Journal of Politics* 73.2, pp. 558–571.

Battalio, Raymond, John Kagel, and Komain Jiranyakul (Mar. 1990). "Testing Between Alternative Models of Choice Under Uncertainty: Some Initial Results." In: *Journal of Risk and Uncertainty* 3.1, pp. 161–164.

Boix, Carles (2003). *Democracy and Redistribution*. Cambridge University Press.

Brusco, Valeria, Marcelo Nazareno, and Susan Stokes (2004). "Vote Buying in Argentina." In: *Latin American Research Review* 39.2, pp. 66–88.

Calvo, Ernesto and María Victoria Murillo (Oct. 2004). "Who Delivers? Partisan Clients in the Argentine Electoral Market." In: *American Journal of Political Science* 48.4, pp. 742–757.

Campos-Vazquez, Raymundo and Emilio Cuilty (2014). "The Role of Emotions on Risk Aversion: A Prospect Theory Experiment." In: *Journal of Behavioral and Experimental Economics* 50, pp. 1–9.

Carlin, Ryan and Mason Moseley (2015). "Good Democrats, Bad Targets: Democratic Values and Clientelistic Vote Buying." In: *The Journal of Politics* 1.77, pp. 14–26.

Carreras, Miguel (Dec. 2019). "What Do We Have to Lose?: Local Economic Decline, Prospect Theory, and Support for Brexit." In: *Electoral Studies* 62.October.

Corstange, Daniel (Jan. 2018). "Clientelism in Competitive and Uncompetitive Elections." In: *Comparative Political Studies* 51.1, pp. 76–104.

Cox, Gary and Mathew McCubbins (1986). "Electoral Politics as a Redistributive Game." In: *The Journal of Politics* 48.2, pp. 370–389.

Daglberg, Matz and Eva Johansson (Mar. 2002). "On the Vote-Purchasing Behavior of Incumbent Governments." In: *American Political Science Review* 96.1, pp. 27–40.

De La O, Ana and Leonard Wantchekon (2011). *Experimental Research on Democracy and Development*. Ed. by James Druckman et al. Cambridge University Press. Chap. 27.

Diaz-Cayeros, Alberto (June 2008). "Electoral Risk and Redistributive Politics in Mexico and the United States." In: *Studies in Comparative International Development* 43.2, pp. 129–150.

Dickson, Eric (2011). *Economics versus Psychology Experiments Stylization, Incentives, and Deception*. Ed. by James Druckman et al. Cambridge University Press. Chap. 5.

Dixit, Avinash and John Londregan (1996). "The Determinants of Success of Special Interests in Redistributive Politics." In: *The Journal of Politics* 58.4, pp. 1132–1155.

Downs, Anthony (1957). *An Economic Theory of Democracy*. Addison-Wesley.

Enelow, James and Melving Hinich (1990). *Advances in the Spatial Theory of Voting*. Ed. by James Enelow and Melving Hinich. Cambridge University Press.

Fatas, Enrique, Tibor Neugebauer, and Pilar Tamborero (Oct. 2007). "How Politicians Make Decisions: A Political Choice Experiment." In: *Journal of Economics* 92.2, pp. 167–196.

Fischbacher, Urs (June 2007). "Z-Tree: Zurich Toolbox for Ready-Made Economic Experiments." In: *Experimental Economics* 10.2, pp. 171–178.

Fishburn, Peter Clingerman (1977). "Expected Utility Theories: A Review Note." In: ed. by Rudolf Henn and Otto Moeschlin. Vol. 141. Lecture Notes in Economics and Mathematical Systems. Springer.

Gallego, Jorge (May 2014). "Self-Enforcing Clientelism." In: *Journal of Theoretical Politics* May.

Gans-Morse, Jordan, Sebastián Mazzuca, and Simeon Nichter (2013). "Varieties of Clientelism: Machine Politics during Elections." In: *American Journal of Political Science* 58.2, pp. 415–432.

González-Ocantos, Ezequiel, Chad de Jonge, et al. (Jan. 2012). "Vote Buying and Social Desirability Bias: Experimental Evidence from Nicaragua." In: *American Journal of Political Science* 56.1, pp. 202–217.

González-Ocantos, Ezequiel, Chad Kiewiet de Jonge, and David Nickerson (Jan. 2014). "The Conditionality of Vote-Buying Norms: Experimental Evidence from Latin America." In: *American Journal of Political Science* 58.1, pp. 197–211.

Grzymala-Busse, Anna (Apr. 2008). "Beyond Clientelism, Incumbent State Capture and State Formation." In: *Comparative Political Studies* 41.4-5, pp. 638–673.

Hagene, Turid (Jan. 2015). "Political Clientelism in Mexico: Bridging the Gap between Citizens and the State." In: *Latin American Politics and Society* 57.1, pp. 139–162.

Haggard, Stephan and Robert Kaufman (2016). *Dictators and Democrats: Masses, Elites, and Regime Change*. Princeton University Press.

Harrison, Glenn (May 2006). "Experimental Evidence on Alternative Environmental Valuation Methods." In: *Environmental and Resource Economics* 34.1, pp. 125–162.

Hicken, Allen (2007). "How Do Rules and Institutions Encourage Vote Buying?" In: *Elections for Sale: The Causes and Consequences of Vote Buying*. Ed. by Frederic Schaffer. 1st ed. Boulder, Colorado: Lynne Rienner Pub. Chap. 4, pp. 47–60.

Hicken, Allen (2011). "Clientelism." In: *Annual Review of Political Science* 14.1, pp. 289–310.

Hicken, Allen, Stephen Leider, et al. (May 2015). "Measuring Vote-Selling: Field Evidence from the Philippines." In: *American Economic Review* 105.5, pp. 352–356.

Hicken, Allen, Stephen Leider, et al. (Mar. 2018). "Temptation in Vote-Selling: Evidence from a Field Experiment in the Philippines." In: *Journal of Development Economics* 131, pp. 1–14.

Hicken, Allen and Noah Nathan (May 2020). "Clientelism's Red Herrings: Dead Ends and New Directions in the Study of Nonprogrammatic Politics." In: *Annual Review of Political Science* 23.1, pp. 277–294.

Hidalgo, Daniel and Simeon Nichter (Aug. 2015). "Voter Buying: Shaping the Electorate through Clientelism." In: *American Journal of Political Science* 00.00, n/a–n/a.

Hilgers, Tina (Sept. 2011). "Clientelism and Conceptual Stretching: Differentiating Among Concepts and Among Analytical Levels." In: *Theory and Society* 40.5, pp. 567–588.

Hwang, In Do (Sept. 2021). "Prospect Theory and Insurance Demand: Empirical Evidence on the Role of Loss Aversion." In: *Journal of Behavioral and Experimental Economics*, p. 101764.

Juan Pablo Luna (2014). *Segmented Representation: Political Party Strategies in Unequal Democracies*. Oxford University Press.

Kahneman, Daniel (2012). *Thinking, Fast and Slow*. Penguin.

Kahneman, Daniel and Amos Tversky (Mar. 1979). "Prospect Theory: An Analysis of Decision under Risk." In: *Econometrica* 47.2, p. 263.

Keefer, Philip and Razvan Vlaicu (Dec. 2017). "Vote buying and campaign promises." In: *Journal of Comparative Economics* 45.4, pp. 773–792.

Kitschelt, Herbert and Steven Wilkinson, eds. (2006). *Patrons, Clients and Policies: Patterns of Democratic Accountability and Political Competition*. Cambridge University Press, p. 392.

Koszegi, Botond and Matthew Rabin (Nov. 2006). "A Model of Reference-Dependent Preferences." In: *The Quarterly Journal of Economics* 121.4, pp. 1133–1165.

Lau, Richard (Feb. 1985). "Two Explanations for Negativity Effects in Political Behavior." In: *American Journal of Political Science* 29.1, pp. 119–138.

Levy, Jack (1992a). "An Introduction to Prospect Theory." In: 13.2, pp. 171–186.

Levy, Jack (June 1992b). "Prospect Theory and International Relations: Theoretical Applications and Analytical Problems." In: *Political Psychology* 13.2, p. 283.

Levy, Jack (Mar. 1997). "Prospect Theory, Rational Choice, and International Relations." In: *International Studies Quarterly* 41.1, pp. 87–112.

Levy, Jack (May 2003). "Applications of Prospect Theory to Political Science." In: *Synthese* 135.2, pp. 215–241.

Lindbeck, Assar and Jorgen Weibull (1987). "Balanced-Budget Redistribution as the Outcome of Political Competition." In: *Public Choice* 52.3, pp. 273–297.

Linde, Jona and Barbara Vis (Feb. 2017). "Do Politicians Take Risks Like the Rest of Us? An Experimental Test of Prospect Theory Under MPs." In: *Political Psychology* 38.1, pp. 101–117.

Luna, Juan Pablo and Elizabeth Zechmeister (May 2005). "Political Representation in Latin America: A Study of Elite-Mass Congruence in Nine Countries." In: *Comparative Political Studies* 38.4, pp. 388–416.

Lupia, Arthur and Mathew McCubbins (1998). *The Democratic Dilemma Can Citizens Learn What They Need to Know?* Cambridge University Press.

Magaloni, Beatriz (2008). *Voting for Autocracy: Hegemonic Party Survival and its Demise in Mexico*. Cambridge University Press.

March, James and Zur Shapira (Nov. 1987). "Managerial Perspectives on Risk and Risk Taking." In: *Management Science* 33.11, pp. 1404–1418.

McDermott, Rose (1998). *Risk-Taking in International Politics: Prospect Theory in American Foreign Policy.* Ann Arbor: University of Michigan Press, p. 771.

McDermott, Rose (June 2002). "Experimental Methods in Political Science." In: *Annual Review of Political Science* 5.1, pp. 31–61.

McDermott, Rose (Apr. 2004). "Prospect Theory in Political Science: Gains and Losses From the First Decade." In: *Political Psychology* 25.2, pp. 289–312.

Medina, Luis Fernando and Susan Stokes (2002). "Clientelism as Political Monopoly." In: *Annual Meetings of the American Political Science Association*, pp. 1–27.

Mercer, Jonathan (June 2005). "Prospect Theory and Political Science." In: *Annual Review of Political Science* 8.1, pp. 1–21.

Miscoiu, Sergiu and Louis-Marie Kakdeu (Oct. 2021). "Authoritarian Clientelism: The Case of the President's 'Creatures' in Cameroon." In: *Acta Politica* 56.4, pp. 639–657.

Morton, Rebecca and Kenneth Williams (2010). *Experimental Political Science and the Study of Causality: From Nature to the Lab.* Cambridge University Press.

Murillo, Victoria, Virginia Oliveros, and Rodrigo Zarazaga (Sept. 2021). "The Most Vulnerable Poor: Clientelism Among Slum Dwellers." In: *Studies in Comparative International Development* 56.3, pp. 343–363.

Neumann, John von and Oskar Morgenstern (1947). "Theory of Games and Economic Behavior." In: Princeton University Press.

Nichter, Simeon (Feb. 2008). "Vote Buying or Turnout Buying? Machine Politics and the Secret Ballot." In: *American Political Science Review* 102.01, pp. 19–31.

Nichter, Simeon (Sept. 2014). "Conceptualizing Vote Buying." In: *Electoral Studies* 35, pp. 315–327.

Oliveros, Virginia (2019). "Perceptions of Ballot Integrity and Clientelism." In: *Campaigns and Voters in Developing Democracies: Argentina in Comparative Perspective.* Ed. by Luis Schiumerini Noam Lupu, Virginia Oliveros. Ann Arbor: University of Michigan Press. Chap. 10, pp. 213–238.

Plott, Charles (1991). "Laboratory Research in Political Economy." In: ed. by Thomas Palfrey. The University of Michigan Press. Chap. A Comparative Analysis of Direct Democracy, Two-Candidate Elections, and Three-Candidate Elections in an Experimental Environment.

Quattrone, George and Amos Tversky (Sept. 1988). "Contrasting Rational and Psychological Analyses of Political Choice." In: *American Political Science Review* 82.3, pp. 719–736.

Rueda, Miguel (July 2015). "Buying votes with imperfect local knowledge and a secret ballot." In: *Journal of Theoretical Politics* 27.3, pp. 428–456.

Rueda, Miguel (Jan. 2017). "Small Aggregates, Big Manipulation: Vote Buying Enforcement and Collective Monitoring." In: *American Journal of Political Science* 61.1, pp. 163–177.

Saikkonen, Inga (Oct. 2021). "Coordinating the Machine: Subnational Political Context and the Effectiveness of Machine Politics." In: *Acta Politica* 56.4, pp. 658–676.

Schumacher, Gijs et al. (Oct. 2015). "How Aspiration to Office Conditions the Impact of Government Participation on Party Platform Change." In: *American Journal of Political Science* 59.4, pp. 1040–1054.

Scott, James (Dec. 1969). "Corruption, Machine Politics, and Political Change." In: *The American Political Science Review* 63.4, p. 1142.

Scott, James (1972). "Patron-Client Politics and Political Change in Southeast Asia." In: *The American Political Science Review* 66.1, pp. 91–113.

Shefter, Martin (Dec. 1977). "Party and Patronage: Germany, England, and Italy." In: *Politics & Society* 7.4, pp. 403–451.

Steinacker, Annette (Sept. 2006). "Externalities, Prospect Theory, and Social Construction: When Will Government Act, What Will Government Do?*." In: *Social Science Quarterly* 87.3, pp. 459–476.

Stokes, Susan (Sept. 2005). "Perverse Accountability: A Formal Model of Machine Politics with Evidence from Argentina." In: *American Political Science Review* 99.3, pp. 315–325.

Szwarcberg, Mariela (Oct. 2012). "Uncertainty, Political Clientelism, and Voter Turnout in Latin America: Why Parties Conduct Rallies in Argentina." In: *Comparative Politics* 45.1, pp. 88–106.

Szwarcberg, Mariela (2013). "The Microfundations of Political Clientelism. Lessons from the Argentine Case." In: *Latin American Research Review* 48.2, pp. 32–54.

Thaler, Richard (2015). *Misbehaving: The Making of Behavioral Economics*. W. W. Norton and Company.

Thaler, Richard and Eric Johnson (June 1990). "Gambling with the House Money and Trying to Break Even: The Effects of Prior Outcomes on Risky Choice." In: *Management Science* 36.6, pp. 643–660.

Tyszler, Marcelo and Arthur Schram (June 2016). "Information and Strategic Voting." In: *Experimental Economics* 19.2, pp. 360–381.

Vicente, Pedro (Feb. 2014). "Is Vote Buying Effective? Evidence from a Field Experiment in West Africa." In: *The Economic Journal* 124.574, F356–F387.

Vieider, Ferdinand and Barbara Vis (June 2019). "Prospect Theory and Political Decision Making." In: *Oxford Research Encyclopedia of Politics*. Vol. 9. 3. Oxford University Press, pp. 334–343.

Vis, Barbara (Dec. 2009). "The Importance of Socio-Economic and Political Losses and Gains in Welfare State Reform." In: *Journal of European Social Policy* 19.5, pp. 395–407.

Vis, Barbara (2010). "Politics of Risk-Taking: Welfare State Reform in Advanced Democracies." In: Amsterdam University Press.

Vis, Barbara (Sept. 2011). "Prospect Theory and Political Decision Making." In: *Political Studies Review* 9.3, pp. 334–343.

Visconti, Giancarlo (May 2021). "Reevaluating the Role of Ideology in Chile." In: *Latin American Politics and Society* 63.2, pp. 1–25.

Wantchekon, Leonard (2003). "Clientelism and Voting Behavior: Evidence from a Field Experiment in Benin." In: *World Politics* 55.April, pp. 399–422.

Weitz-Shapiro, Rebecca (2012). "What Wins Votes: Why Some Politicians Opt Out of Clientelism." In: *American Journal of Political Science* 56.3, pp. 568–583.

Weyland, Kurt (2002). "A New Explanation of Adjustment Politics." In: *The Politics of Market Reform in Fragile Democracies: Argentina, Brazil, Peru, and Venezuela*. Princeton University Press. Chap. 3, pp. 37–67.

Zarazaga, Rodrigo (Jan. 2014). "Brokers Beyond Clientelism: A New Perspective Through the Argentine Case." In: *Latin American Politics and Society* 56.03, pp. 23–45.

Zarazaga, Rodrigo (Oct. 2016). "Party Machines and Voter-Customized Rewards Strategies." In: *Journal of Theoretical Politics* 28.4, pp. 678–701.

Word count: 8,041

VIII. Appendix

	role	variable	n	min	max	median	iqr	mean	sd	se	ci
1	Party A	left.right	66	1	10	3	4	4	2	0	1
2	Party B	left.right	66	1	10	4	3	4	2	0	1
3	Voter	left.right	68	1	10	3	3	4	2	0	1
4	Party A	male	66	0	1	0	1	0	0	0	0
5	Party B	male	66	0	1	0	1	0	0	0	0
6	Voter	male	68	0	1	0	1	0	0	0	0
7	Party A	party.id	66	2	9	9	0	8	2	0	0
8	Party B	party.id	66	1	9	9	0	9	1	0	0
9	Voter	party.id	68	1	9	9	0	8	2	0	0
10	Party A	party.like	66	0	1	0	1	0	0	0	0
11	Party B	party.like	66	0	1	0	0	0	0	0	0
12	Voter	party.like	68	0	1	0	0	0	0	0	0
13	Party A	payoff	73	633	4224	2630	674	2621	670	78	156
14	Party B	payoff	72	1148	4062	2592	710	2607	665	78	156
15	Voter	payoff	75	633	4224	2674	836	2664	697	80	160
16	Party A	salary.enough	66	1	4	2	0	2	1	0	0
17	Party B	salary.enough	66	1	4	2	1	2	1	0	0
18	Voter	salary.enough	68	1	3	2	0	2	1	0	0
19	Party A	vote.last.election	66	0	1	1	0	1	0	0	0
20	Party B	vote.last.election	66	0	1	1	0	1	0	0	0
21	Voter	vote.last.election	68	0	1	1	0	1	0	0	0
22	Party A	vote.next.election	66	0	1	1	0	1	0	0	0
23	Party B	vote.next.election	66	0	1	1	0	1	0	0	0
24	Voter	vote.next.election	68	0	1	1	0	1	0	0	0

Table A1: *Summary Statistics.*

	OLS
	Amount of Vote-Buying Offer
Intercept	−380.54
	(568.66)
Vote Share (%)	6.95
	(5.55)
Points Accumulated (delta)	−0.06
	(0.05)
Ideological Distance	−6.87*
	(3.26)
Party Budget	0.71*
	(0.34)
Pivotal Voter	91.16
	(124.46)
R^2	0.66
Num. obs.	142

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{cdot}p < 0.1$.
Robust standard errors in parentheses.
Fixed effects parameteres omitted in table.

Table A2: *Statistical Model (OLS): Amount of Vote-Buying Offer.*