Buying an Influencer for an Election

Ozlem Tonguc
Binghamton University, SUNY

Erkut Y. Ozbay
University of Maryland*

February 15, 2022

Abstract

We model the bilateral exchange between a politician who is seeking endorsement of an influential member of the society to increase his probability of winning an election in a simple game where particularized benefits are exchanged for verifiable costly action. We theoretically and experimentally study the behavioral mechanisms that may sustain this exchange. Using a framed lab experiment where we vary the gains of the buyer upon success and influencer's power to change the outcome, we find support for the presence of inequity aversion. (JEL C72, C91, D03, D82)

Keywords: Influencers, Elections, Experiment, Inequity Aversion

*We would like to thank Yiqun Gloria Chen, Allan Drazen, Emel Filiz-Ozbay, Jac Heckelman, Basak Horowitz, Ethan Kaplan, Horacio Larreguy, Kenneth Leonard, Yusufcan Masatlioglu, Andreas Pape, Jongho Park, Luminita Stevens, Daniel Vincent, Wei Xiao, participants at the George Mason University 2015 ICES Behavioral and Experimental Economics Conference, Inter-American Development Bank - D.C. Political Economy Seminar, ESA North American Meetings 2017, Southern Economic Association Meetings 2018, and Syracuse University Trade, Development and Political Economy Workshop for their helpful comments." Email: tonguc@binghamton.edu, ozbay@umd.edu

1 Introduction

Politicians forming alliances with various members of influence in the society to win elections is a topic of growing interest in the political science literature. Recent studies include politician alliances with officials elected in local government (Stokes et al., 2013; Szwarcberg, 2015), state employees (Mares and Young, 2018), union members (Larreguy et al., 2017), professional, non-partisan vote brokers (Larreguy et al., 2016), local leaders (Holland and Palmer-Rubin, 2015), and leaders of paramilitary groups (Acemoglu et al., 2013) to influence (or intimidate) the voters to support the politicians at the polls or at campaign rallies. In addition to these vertical relationships, the influence of interpersonal interactions on individuals' voting decision has been documented as early as 1940 U.S. presidential elections in the seminal study of Lazarsfeld et al. (1948). Some members of the society, referred to as *opinion leaders*, were shown to exert "a disproportionately great influence" on the consumption decisions as well as the vote intentions of their fellow voters (Katz and Lazarsfeld (1955); also Jackson and Yariv (2011) for a comprehensive survey). In tandem with the growth of marketing via social media influencers, recent presidential campaigns invited social media influencers to create content about why they support certain candidates (Culliford, 2020).

We introduce a candidate-influencer model and we theoretically and experimentally investigate this model. In the model, endorsement of an influencer may increase the likelihood of the candidate accruing a rent by winning an election. However, this endorsement is costly to the influencer. In order to buy the influencer, the candidate can offer contracts characterized by their different payment types: up-front benefits (such as Michael Bloomberg's presidential campaign inviting social media influencers to create content about their reasons to support him in exchange for $150 (Culliford, 2020)), or promises of future benefits conditional on winning the election (such as the promise of an amnesty deal to right-wing paramilitaries in Colombia for delivering votes (Acemoglu et al., 2013)).

We define *influence buying* as the influencer accepting one of these contracts. Standard theory with risk neutral preferences predicts influence buying to occur if and only if the marginal impact of the influencer is higher than the cost of the endorsement, in which case the candidate offers an up-front payment that is equal to the cost of the endorsement or a promise that is equal to the cost of the endorsement in expectation. On the other hand, we show that a model of inequity aversion favors influence buying with promises in this environment, and that the payment offers as well as the likelihood of their acceptance depend on the size of the candidate's rent. To test these predictions of these models, we conducted a laboratory experiment with undergraduate students. Our experimental results are in line with the predictions of the inequity aversion model: (i) influence buying occurs mainly with the influencers' acceptance of conditional payments; (ii) candidate offers are affected by the size of their rent from winning and (iii) influencers are less likely to accept a fixed conditional payment offer when the candidate's rent from winning is high.

Influence buying is closely related to various strands of the political science literature: campaigns (e.g. Morton and Cameron, 1992; Myerson, 1993; Houser et al., 2011), vote buying (e.g. Dal Bó, 2007; Dekel et al., 2008), lobbying (e.g. Groseclose and Snyder, 1996) and redistributive politics (Dixit and Londregan, 1996). However, different than the mechanisms in these literatures, influence buying gives candidates the prospect of increasing their probability of winning an election by buying the endorsement of a single influencer (e.g. rather than approaching a group of voters or to the pivotal voter). Moreover, unlike campaigns and lobbying activities, the cost of endorsement is shouldered by the influencers, despite not necessarily having a direct benefit from the outcome of the election (e.g. Ashworth, 2006). Furthermore, unlike the vote buying, influencer buying is not illegal and hence the candidate can offer a contract. This makes the authenticity of the influencer's endorsement and the promise of the candidate enforceable. Holland and Palmer-Rubin (2015) document that non-partisan influencers negotiate a price that they will be paid for their persuasion and they "usually, but not always, pass along a portion of this payment as individual or collective goods to mobilize their members for the election. Organization members may not know about the payment to their leaders; they expect the party endorsed by their leaders to provide local public goods or specialized policies after the election if their group shows its collective loyalty.[1]

The rest of the paper is organized as follows: In the next section we present a simple model of the influence buying exchange, provide plausible models of

[1] If the influencers pass along some resources to the voters, this exchange leads to "vote buying," the practice of giving particularized benefits (money, goods or services) to voters in exchange for their vote. This practice is undesired as it is thought to undermine the intent of democratic voting: relaying the preferences, sentiments, and private information of the voters. Moreover, vote buying may hinder accountability in the case of electing representatives. As a result, vote buying is strictly prohibited in many voting environments and secret ballot has been introduced to deter vote buying. Despite the countermeasures, however, vote buying remains prevalent, especially in developing countries (Schaffer, 2002), but recent high profile examples (Isenstadt, 2019; Lemon, 2019) in the U.S. suggest that developed countries may not be immune to this practice.

behavior in this environment with their testable predictions. This is followed by the experimental design and results in sections 3 and 4. Finally, in Section 5 we offer some concluding remarks.

2 A Model of Influence Buying

We consider a one-shot interaction between a buyer ("candidate"), who receives a rent $W > 0$ for winning an election, and the seller ("influencer"). Initially, the probability of winning the election is p (Morton and Cameron, 1992). The influencer may weakly increase the probability of winning from p to p' with her endorsement where $p \in [0, 1]$ and $p' \in [p, 1]$. The endorsement is costly to the influencer, $d > 0$.

The candidate may offer to compensate the influencer with an up-front payment (UFP) or a (winning-)conditional payment (CP). To guarantee fulfillment, the candidate can not make offers larger than the budget he has at the time of payment, which is his initial budget, $B_C > 0$, for up-front payment, and $B_C + W$ for conditional payment. The influencer can accept at most one type of payment in exchange for her endorsement. The parameters of the game, that is, the respective budgets of players, the rent from winning, the cost of endorsing, and the probabilities of winning with and without endorsement are common knowledge. The timing is as follows:

1. Players observe the parameters (p, p').

2. *Offer and endorsement stage*

    - *Offer stage*: The candidate presents the offers $(m_{\text{UFP}}, m_{\text{CP}})$ to the influencer.

    - *Endorsement stage*: Observing the candidate's offers, influencer chooses whether to endorse the candidate and and if so, whether she accepts a type of payment from the candidate. Specifically, she chooses from the options (i) endorse without accepting payment, (ii) endorse in exchange for up-front payment, (iii) endorse in exchange for conditional payment, (iv) do not endorse and do not accept payment. If the influencer accepts up-front payment, m_{UFP} is transferred to the influencer. The cost of endorsing d is deducted from the influencer's account if she chooses either to endorse in exchange of some payment or endorse without accepting payment.

3. The election takes place, payoffs are realized. If the influencer has chosen conditional payment at the endorsement stage and the candidate wins, the candidate receives W, but m_{CP} of it is transferred to the influencer's account.

It is straightforward to see that for risk neutral players that maximize their own material payoffs ("selfish"), the influencer accepts to endorse only if at least one of the payment offers is greater than the cost of endorsing in expectation. If both payment offers are larger than the cost of endorsing, she accepts the payment type that gives her the largest expected payment. Given the influencer's strategy, the candidate makes acceptable offers for both payment types if only if the expected benefit of the endorsement is higher than its cost, i.e. $(p' - p)W - d \geq 0$. Since both players are risk neutral, they are indifferent between different payment types that are equal in expectation, in other words, $m_{\text{UFP}} = d$ or $m_{\text{CP}} = d/p'$ provided that $(p' - p)W - d \geq 0$.

Hypothesis 1: [Risk neutral] Influence buying occurs if and only if the value of influencer's expected contribution exceeds the cost of endorsing, i.e. $(p' - p)W \geq d$. In particular, if $(p' - p)W \geq d$, then $m_{\text{UFP}} = d$ or $m_{\text{CP}} = d/p'$; if $(p' - p)W < d$, then $m_{\text{UFP}} < d$ and $m_{\text{CP}} < d/p'$.

Invoking a standard result from optimal risk sharing literature allows us to generate a straightforward interpretation for the effect of differing risk attitudes between the players. Suppose that the candidate is risk neutral but the influencer is risk averse. Since up-front payment is riskless for the influencer, any up-front payment that is greater than the cost of endorsing is acceptable, while a conditional payment that just covers the cost of endorsing in expectation is no longer acceptable. Since the candidate is risk neutral, he offers non-zero payments as long as the candidate's expected benefit from endorsement is greater than the cost of the influence, $(p' - p)W \geq d$. However, since the influencer is risk averse, if $p' < 1$, then the minimum conditional payment accepted by the influencer is, in expectation, greater than her cost of endorsing. This makes up-front payment cheaper than conditional payment for the candidate. As a result, the candidate optimally offers an up-front payment in the amount of the cost of endorsing and an unacceptable conditional offer, i.e. $m_{\text{UFP}} = d$. Alternatively, if the candidate is risk averse but the influencer is risk neutral, a risk neutral influencer accepts any conditional payment that is higher than in the cost of endorsement in expectation. Since a risk averse prefers the minimum acceptable conditional offer of $m_{\text{CP}} = d/p'$ to the minimum acceptable up-front payment of $m_{\text{UFP}} = d$, in this case, influence buying occurs only with conditional payment.

Hypothesis 2 [Risk Aversion]: If the candidate is risk neutral but the influencer is risk averse, influence buying occurs only with up-front payment where $m_{\text{UFP}} = d$. If the candidate is risk averse but the influencer is risk neutral, influence buying occurs only with conditional payment where $m_{\text{UFP}} = d/p'$.

Next, we extend the preferences to the inequity aversion model of Fehr and Schmidt (1999):

$$u_i(\pi) = \pi_i - \alpha_i \max\{\pi_j - \pi_i, 0\} - \beta_i \max\{\pi_i - \pi_j, 0\}, i, j \in \{C, I\}, i \neq j \qquad (1)$$

where subscripts C, I refer to the candidate and the influencer, π_i denotes player i's material payoff, and the parameters α_i and β_i measure player i's sensitivity to different types of inequality. Specifically, $0 \leq \beta_i \leq \alpha_i < 1$ such that α_i measures player i's sensitivity to disadvantageous inequality (i.e. when $\pi_i < \pi_j$), and β_i measures player i's sensitivity to advantageous inequality (i.e. when $\pi_i > \pi_j$). Assume players are symmetric, i.e. $\alpha_C = \alpha_I = \alpha$, $\beta_C = \beta_I = \beta$ (see e.g. Montero, 2007).

Note that if the influencer is inequity averse and if $p' < 1$, up-front payment is no longer a safe option for her: the candidate will have a different material payoff in each state. In other words, there is always a positive probability of ex-post inequality between the influencer and the candidate. Similarly, with conditional payment, the influencer always bears the risk of paying for the cost of endorsing, but not receiving anything in return. As a result, for each payment type, the minimum accepted amount by the influencer depends on the rent of the candidate from winning, W. Note also that conditional payment fixes the payment to only one state, and due to the larger budget, it allows for the possibility of a larger payment to the influencer. For an inequity averse candidate, these properties make influence buying with conditional payment more desirable.[2]

Hypothesis 3 [Inequity Aversion]: If both players are inequity averse, influence buying occurs with conditional payment only.

It is important to note that both when the agents are selfish (but the candidate is risk averse and the influencer is risk neutral) and when the agents are inequity

[2] We provide the formal analyses in the Appendix.

averse, influence buying occurs only with conditional payment. However, it is possible to distinguish these two models. Firstly, when $(p' - p)W < d$, influence buying never occurs for selfish agents. Secondly, the amount of the candidate's rent, W for winning the election will not have an effect on the conditional payment decision of a risk averse candidate, but an inequity averse candidate's conditional payment increases as W increases. Furthermore, if the conditional payment do not change as W increases, an inequity averse influencer is more likely to reject this offer. Hence, varying W is needed to separate the predictions of the risk aversion and inequity aversion models.

Hypothesis 4 [Selfish vs Inequity Averse]: Ceteris paribus, for selfish agents W do not affect the conditional payment amount offered by a candidate and the acceptance decision of a influencer; however, for inequity averse agents, as W increases the conditional payment increases and a same conditional offer is less likely to be accepted.

3 Experiment Design

We conducted ten sessions of the experiment at the Experimental Economics Laboratory at the University of Maryland (EEL-UMD) with 158 undergraduate students. Our experimental design varies the gains of the candidate upon winning (candidate's rent, W) between subjects: the value of W was fixed to 50 tokens (Low Rent Treatment, 78 subjects) in five sessions and 200 tokens (High Rent Treatment, 80 subjects) in the remaining five. No subject participated in more than one session. Participants were seated in isolated booths. The experiment was programmed in z-Tree (Fischbacher, 2007).

At the beginning of each session, participants were assigned randomly to roles of either a candidate or an influencer (called "voter" in the experiment.) There were an equal number of candidates and influencers. The roles were fixed throughout a session which consisted of 20 rounds of the influence buying game and each candidate was rematched randomly and anonymously to an influencer in each period.

In each period, the candidate and the influencer had the same initial endowment ($B = 20$ tokens) to focus on the effect of the inequality that would be created post-exchange, the cost of endorsement was fixed ($d = 10$ tokens), and each pair was assigned two numbers: the candidate's initial probability of winning (p), and the candidate's probability of winning if the influencer endorses (p').

These numbers were drawn randomly from uniform distributions.[3] After both the candidate and the influencer were informed about the probability pair of that round, the candidate was asked to decide on his offers for the two possible types of payment. After being informed of the candidate's offers, the influencer was asked to choose among the following options: (i) endorse the candidate in exchange for up-front payment (UFP), (ii) endorse the candidate in exchange for conditional payment (CP), (iii) endorse the candidate without payment (EwoP), and (iv) do not endorse the candidate and do not accept payment (DNE). The influencer's decision at this step was relayed to the candidate. If the influencer decided (not) to endorse, the election lottery took place with the candidate's probability of winning being (p) p' and the payoffs were realized.

Sessions lasted for approximately one hour. Earnings in each period depended on whether the influencer endorsed and whether she accepted an offer from the candidate, and the result of the election lottery. Participants were paid their earnings on a randomly chosen round once all of the rounds were completed. The participants earned \$11 on average, which includes a fixed participation fee of \$5. A copy of the instructions are provided in the appendix.

4 Results

We analyze the data with respect to three main questions: (i) whether and how influence buying occurs, (ii) the behavior of candidates at the offer stage, (iii) the behavior of the influencers at the endorsement stage.

4.1 Occurrence and the nature of influence buying

Influence buying, defined as the acceptance of a payment offer by the influencer, occurs in 54% of the observations, which is significantly different than the 66% rate of occurrence predicted under the assumption of equilibrium under selfish risk neutral preferences (RNE), as reported in the third column of Table 1. The rate of influence buying varies with respect to the candidate's rent as well, suggesting that the higher rent may be loosening the participation constraint of the candidate: The values of 47% in the Low Rent Treatment and 60% in the High Rent Treatment are significantly different from each other in a two-sided proportions test ($N_L = 780,\ N_H = 800,\ p < 0.05$).

[3] p was drawn from $U[0,1]$, while p' was drawn from $U[p,1]$.

Table 1: Proportion of Influence Buying (IB)

	Aggregate IB					with CP if IB occurs		
	RNE		Proportions	(p′-p)W			(p′-p)W	
Treatment	**Prediction**	**Actual**	**Test**	$\geq d$	$< d$	**Actual**	$\geq d$	$< d$
All	0.66	0.54	z = 7.19	0.64	0.333	0.82	0.82	0.81
		(.01)	p = 0.000	(.02)	(.02)	(.01)	(.02)	(.03)
Low Rent	0.50	0.47	z = 1.06	0.62	0.328	0.82	0.80	0.85
		(.02)	p = 0.29	(.02)	(.02)	(.02)	(.03)	(.03)
High Rent	0.82	0.60	z = 9.75	0.65	0.347	0.81	0.83	0.70
		(.02)	p = 0.000	(.02)	(.04)	(0.02)	(.02)	(.06)

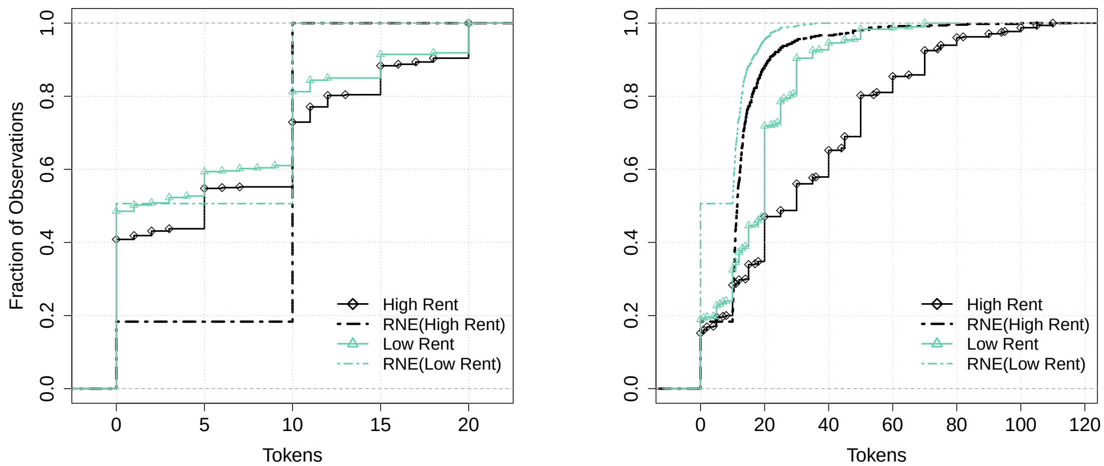
Standard errors in parentheses.

We find that influence buying occurs predominantly via conditional payments (82%). This proportion is significantly different than the 50% that would arise in the case of complete randomization between up-front and conditional payments (Binomial test: $p = 0.000$). Moreover, as shown in columns (6) - (8) of Table 1, the rate of influence buying with conditional payment does not differ across treatments, regardless of whether we consider the overall rate or consider the cases where influence buying is predicted by the RNE or not. Additionally, in contrast to the prediction based on selfish agents, influencer buying occurs even when the expected value of the endorsement is smaller than the cost of endorsement, $(p' - p) * W < d$.

4.2 Candidate Behavior

In Figure 1 we provide the empirical and predicted cumulative distributions of up-front and conditional payment offers. The large discrepancies between the empirical and predicted distributions clearly show that selfish risk neutral preferences do not approximate the behavior in this environment. We also note that while a model of selfish risk averse players where the players have differing risk attitudes cannot explain the shift in the distribution of up-front payment offer, a riskless payment type for both players, as the candidate's rent increases. Independent samples Kolmogorov-Smirnov tests reveal that the empirical CDFs of offers for the matched cases between the two treatments are significantly different from each other for both payment types (UFP: D(960)=0.09, p<0.05, and CP: D(960)=0.35, p<0.01).

Figure 1: Empirical and Predicted Distributions of Offers



(a) Up-front payment (b) Conditional payment

In Table 2, we analyze the determinants of conditional offers and the offer acceptance decision. In columns (1) and (2) of Table 2, we present the results of random effect Tobit regressions of candidates' conditional payment offers. In these regressions, we consider the effect of several variables highlighted in the theory section. The results indicate that in the High Rent Treatment, (W=200), the conditional payment offers are significantly higher than the offers in Low Rent Treatment (W=50). In regression (2), we restrict the sample to consider only the cases where influence buying is predicted by the selfish risk neutral equilibrium ($(p' - p)W \geq d$) to control for the fact that influence buying is rational in a higher percentage of the cases in the High Rent Treatment. However, the significant coefficient of the treatment variable in regression (2) indicates that the increase in the conditional payment offers as a response to an increase in the candidate's rent is robust. This relationship between the conditional payment offers and the candidate's rent is not only in line with the prediction of the inequity aversion model, but it also contrasts the prediction of the selfish preferences model.

4.3 Influencer behavior

In order to understand the determinants of endorsement in exchange for conditional payment, we use random effect probit regression analysis. Column (3) in Table 2 shows that, controlling for the amount of up-front payment and conditional payment offers received by the influencers, the influencers are significantly less

Table 2: Determinants of Offers and Offer Acceptance

	(1) m_{CP}	(2) m_{CP}	(3) Accept CP	(4) Accept CP	(5) Accept CP
p	-35.79***	-19.91***	-0.11	-0.37	-0.09
	(1.83)	(2.28)	(0.22)	(0.23)	(0.27)
p′	20.43***	8.69***	2.18***	2.57***	1.77***
	(2.45)	(2.77)	(0.39)	(0.42)	(0.52)
High Rent	15.88***	15.67***	-0.50***	-0.55***	-0.44**
	(4.26)	(4.46)	(0.17)	(0.15)	(0.22)
Period	-0.03	0.10	0.01	0.01	0.01
	(0.07)	(0.08)	(0.01)	(0.01)	(0.01)
UFP offer			-0.00	0.02***	-0.10***
			(0.01)	(0.00)	(0.01)
CP offer			0.06***	0.06***	0.06***
			(0.01)	(0.01)	(0.01)
Constant	14.88***	18.15***	-3.04***	-3.06***	-0.89**
	(3.46)	(3.74)	(0.37)	(0.37)	(0.44)
Observations	1580	1036	1580	1339	877
Sample restriction	-	$(p' - p)W \geq d$	-	E(CP Offer) $\geq$ UFP Offer	Endorse $= 1$

* p<0.1, ** p<0.05, *** p<0.01; (1), (2): Random effects Tobit regressions with candidate's conditional payment offer as the dependent variable, bounded below at 0 and above at $W + 20$. (3) - (5): Random effects probit regressions with the dummy variable "Accept Conditional Payment" as the dependent variable. Standard errors in parentheses clustered at the session level.

likely to accept conditional payment in exchange for their endorsement in the High Rent Treatment. This relationship is robust to subsamples where the expected conditional payment is higher than the upfront payment, $p'(m_{\text{CP}}) \geq m_{\text{UFP}}$ (shown in column (4)) and the cases in which the influencer endorses the candidate (shown in column (5)). As a result, we conclude that a fixed offer pair (m_{UFP}, m_{CP}) becomes less attractive when the candidate's rent is higher. Thus, our finding of influencers' responsiveness to the candidate's rent favors the inequity aversion model as it is a differentiating prediction of the model over the selfish preferences model.

5 Conclusion

As social media has become a more integrated part of our lives, influencer marketing has become a mainstream strategy for reaching masses. In this paper, we analyze influence buying in an election. An influencer may increase a candidate's probability of winning an election. For example, this might be as simple as a social media influencer encouraging her followers to vote considering, especially considering the relatively low turnout in the elections in the US (e.g. Morton, 2006). Would the influence buying occur via up-front payment or via a promise conditional on winning the election? Would the importance of the election have an effect on the influence buying?

We provide a simple model of the influence buying exchange and analyze equilibrium behavior under different models with selfish and inequity averse players. In a laboratory experiment, by varying the gains of the candidate upon winning an election and the impact of the influencer's endorsement on the candidate's probability of winning, we test the predictions of these models. Our results suggest that inequity aversion plays an important role in the influence buying exchange: we find a significantly lower rate of influence buying compared to the prediction of a model with selfish players, and, as predicted by the model of inequity aversion, influence buying occurs primarily through conditional payments. We also show that the response to changes in the candidate's gain of the candidates' payment offers and influencers' likelihood of accepting payment overlap with the predictions of the inequity aversion model.

References

Acemoglu, D., J. A. Robinson, and R. J. Santos (2013): "The monopoly of violence: Evidence from Colombia," *Journal of the European Economic Association*, 11, 5–44.

Ashworth, S. (2006): "Campaign finance and voter welfare with entrenched incumbents," *American Political science review*, 100, 55–68.

Culliford, E. (2020): "Paid social media influencers dip toes in U.S. 2020 election," *Reuters*, 10 February 2020. Available: https://www.reuters.com/article/us-usa-election-influencers/paid-social-media-influencers-dip-toes-in-u-s-2020-election-idUSKBN2042M2.

Dal Bó, E. (2007): "Bribing voters," *American Journal of Political Science*, 51, 789–803.

Dekel, E., M. O. Jackson, and A. Wolinsky (2008): “Vote Buying: General Elections,” *Journal of Political Economy*, 116, 351–380.

Dixit, A. and J. Londregan (1996): “The determinants of success of special interests in redistributive politics,” *the Journal of Politics*, 58, 1132–1155.

Fehr, E. and K. M. Schmidt (1999): “A Theory Of Fairness, Competition, and Cooperation,” *The Quarterly Journal of Economics*, 114, 817–868.

Fischbacher, U. (2007): “z-Tree: Zurich Toolbox for Ready-made Economic Experiments,” *Experimental Economics*, 10(2), 171–178.

Groseclose, T. and J. M. Snyder (1996): “Buying supermajorities,” *American Political Science Review*, 90, 303–315.

Holland, A. C. and B. Palmer-Rubin (2015): “Beyond the Machine Clientelist Brokers and Interest Organizations in Latin America,” *Comparative Political Studies*, 48, 1186–1223.

Houser, D., R. Morton, and T. Stratmann (2011): “Turned on or turned out? Campaign advertising, information and voting,” *European Journal of Political Economy*, 27, 708–727.

Isenstadt, A. (2019): “Trump lures GOP senators on impeachment with cold cash,” *Politico*, 31 October 2019. Available: https://www.politico.com/news/2019/10/31/trump-impeachment-senators-donor-062084.

Jackson, M. O. and L. Yariv (2011): *Handbook of Social Economics Vol. 1*, North-Holland, chap. Ch. 14 - Diffusion, Strategic Interaction, and Social Structure.

Katz, E. and P. F. Lazarsfeld (1955): *Personal Influence: The Part Played by People in the Flow of Mass Communications*, Free Press.

Larreguy, H., J. Marshall, and P. Querubin (2016): “Parties, brokers, and voter mobilization: How turnout buying depends upon the party’s capacity to monitor brokers,” *American Political Science Review*, 110, 160–179.

Larreguy, H., C. E. Montiel Olea, and P. Querubin (2017): “Political Brokers: Partisans or Agents? Evidence from the Mexican Teachers’ Union,” *American Journal of Political Science*, 61, 877–891.

Lazarsfeld, P. F., B. R. Berelson, and H. Gaudet (1948): *The people’s choice: How the voter makes up his mind in a presidential campaign*, New York: Duell, Sloan & Pierce.

Lemon, J. (2019): “Trump is committing felony bribery by giving cash to GOP senators ahead of impeachment,” *Newsweek*, 31 October 2019. Available:

https://www.newsweek.com/trump-committing-felony-bribery-giving-fundraising-cash-gop-senators-ahead-impeachment-trial-1468946 [Last accessed: 25 February 2020],.

Mares, I. and L. E. Young (2018): "The core voter's curse: Clientelistic threats and promises in Hungarian elections," *Comparative Political Studies*, 51, 1441–1471.

Montero, M. (2007): "Inequity aversion may increase inequity," *The Economic Journal*, 117, C192–C204.

Morton, R. (2006): *Analyzing Elections: New Institutionalism in American Politics*, W.W. Norton & Company.

Morton, R. and C. Cameron (1992): "Elections and the theory of campaign contributions: A survey and critical analysis," *Economics & Politics*, 4, 79–108.

Myerson, R. B. (1993): "Incentives to cultivate favored minorities under alternative electoral systems," *American Political Science Review*, 87, 856–869.

Schaffer, F. C. (2002): "What is Vote Buying? Empirical Evidence," mimeo.

Stokes, S. C., T. Dunning, M. Nazareno, and V. Brusco (2013): *Brokers, voters, and clientelism: The puzzle of distributive politics*, Cambridge University Press.

Szwarcberg, M. (2015): *Mobilizing poor voters: Machine politics, clientelism, and social networks in Argentina*, Cambridge University Press.

A Appendix

A.1 Analysis of the behavior of inequity averse players

Payoffs of Inequity Averse Candidate and Influencer:

Let $(m_{UFP}, m_{CP}) = (x, y)$ be an offer. Influencer's utility from accepting UFP is given by

$$U_i(\text{UFP}, x = z) = \begin{cases} B + (1+2\alpha)z - (1+\alpha)d - \alpha p'W & \text{if } z \in \left[0, \frac{d}{2}\right] \\ B + (1 + 2(\alpha p' - \beta(1-p')))\, z & \\ -\, (1 + \alpha p' - \beta(1-p'))\, d - \alpha p'W & \text{if } z \in \left[\frac{d}{2}, \frac{W+d}{2}\right] \\ B + (1-2\beta)\, z - (1-\beta)\, d + \beta p'W & \text{if } z \geq \frac{W+d}{2} \end{cases} \tag{2}$$

Influencer's utility from accepting CP is given by

$$U_i(\text{CP}, y = z) = \begin{cases} B + p'(1+2\alpha)z - (1+\alpha)d - \alpha p'W & \text{if } z \leq \frac{W+d}{2} \\ B + p'\,(1-2\beta)\, z & \\ -\, (1 + \alpha(1-p') - \beta p')\, d + \beta p'W & \text{if } z \geq \frac{W+d}{2} \end{cases} \tag{3}$$

Candidate's utility from buying endorsement with UFP is given by

$$U_c(\text{UFP}, x = z) = \begin{cases} B + p'(1-\beta)W - (1-2\beta)z - \beta d & \text{if } z \in \left[0, \frac{d}{2}\right] \\ B + p'(1-\beta)W - (1 + 2(\alpha(1-p') - \beta p'))\, z & \\ +\, (\alpha(1-p') - \beta p')\, d & \text{if } z \in \left[\frac{d}{2}, \frac{W+d}{2}\right] \\ B + p'(1+\alpha)W - (1+2\alpha)\, z + \alpha d & \text{if } z \geq \frac{W+d}{2} \end{cases} \tag{4}$$

Candidate's utility from buying endorsement with CP is given by

$$U_c(\text{CP}, y = z) = \begin{cases} B + p'(1-\beta)W - p'(1-2\beta)z - \beta d & \text{if } z \leq \frac{W+d}{2} \\ B + p'(1+\alpha)W - p'\,(1+2\alpha)\, z & \\ +(\alpha p' - \beta(1-p'))d & \text{if } z \geq \frac{W+d}{2} \end{cases} \tag{5}$$

Proposition (Inequity aversion). *Suppose both players are inequity averse and their preferences can be represented by Fehr-Schmidt preferences. Then, if the candidate's rent from winning is sufficiently large* $\left(B < \frac{W+d}{2}\right)$*, influence buying occurs with conditional payment only. Moreover, the minimum payment accepted by the influencer varies* *with the candidate's rent, W.*

Proof. Since the influence buying game is a finite game with complete information, we will proceed with backward induction.

Influencer: Minimum accepted up-front and conditional payments

Let $(m_{UFP}, m_{CP}) = (x, y)$ be the candidate's offer. We will solve for the minimum accepted offer for each payment type for the influencer.

Minimum accepted up-front payment

Let $\underline{x}$ be the influencer's minimum accepted up-front payment. Then

$$U_i(\text{UFP}; z = \underline{x}) = U_i(\text{DNE})$$

Note that, up-front payment less than half of the cost of endorsement, $\frac{d}{2}$ is never acceptable:

$$\begin{aligned} U_i\left(\text{UFP}, z < \frac{d}{2}\right) &= B + (1+2\alpha)z - (1+\alpha)d - \alpha p' W \\ &\leq B + (1+2\alpha)\frac{d}{2} - (1+\alpha)d - \alpha p' W \\ &= B - \alpha p' W - \frac{d}{2} \\ &< B - \alpha p W = U_i(\text{DNE}) \end{aligned}$$

Thus assume first that $\underline{x} \in \left[\frac{d}{2}, \frac{W+d}{2}\right]$. Then, $\underline{x}$ satisfies

$$B + [1 + 2(\alpha p' - \beta(1-p'))]\,\underline{x} - (1 + \alpha p' - \beta(1-p'))\,d - \alpha p' W = B - \alpha p W$$

$$\Rightarrow \underline{x}_1 = \frac{\alpha(p'-p)W + (1 + \alpha p' - \beta(1-p'))\,d}{1 + 2(\alpha p' - \beta(1-p'))} \tag{6}$$

Note that $\underline{x} \geq \frac{d}{2}$ for all p':

$$\begin{aligned} 2\alpha(p'-p)W + 2(1 + \alpha p' - \beta(1-p'))d &\geq (1 + 2(\alpha p' - \beta(1-p')))d \\ \Rightarrow 2\alpha(p'-p)W + d &\geq 0 \end{aligned}$$

However $\underline{x} \leq \frac{W+d}{2}$ for some p':

$$2\alpha(p'-p)W + 2(1+\alpha p' - \beta(1-p'))d \leq (1+2(\alpha p' - \beta(1-p')))\frac{W+d}{2}$$
$$\Rightarrow p' \geq \frac{(2\beta - 2\alpha p - 1)W + d}{2\beta} \tag{7}$$

Next, assume that $\underline{x} \geq \frac{W+d}{2}$. Then

$$B + (1-2\beta)\,\underline{x} - (1-\beta)\,d + \beta p' W = B - \alpha p W$$

$$\Rightarrow \underline{x}_2 = \frac{-(\beta p' + \alpha p)W + (1-\beta)d}{1-2\beta} \tag{8}$$

For $\underline{x} \geq \frac{W+d}{2}$, p' should satisfy

$$-(\beta p' + \alpha p)W + (1-\beta)d \geq (1-2\beta)\frac{W+d}{2}$$
$$\Rightarrow p' \leq \frac{(2\beta - 2\alpha p - 1)W + d}{2\beta} \tag{9}$$

Combining (7) and (9), we get the following minimum accepted up-front payment offers for the influencer, based on the candidate's probability of winning with the endorsement:

$$\underline{x} = \begin{cases} \underline{x}_1 & \text{if } p' \geq \frac{(2\beta-2\alpha p-1)W+d}{2\beta} \\ \underline{x}_2 & \text{if } p' \leq \frac{(2\beta-2\alpha p-1)W+d}{2\beta} \end{cases} \tag{10}$$

Influencer's minimum accepted conditional payment

For finding the minimum accepted conditional payment by the influencer, $\underline{y}$, assume first that $\underline{y} \in \left[0, \frac{W+d}{2}\right]$. Then

$$U_i\left(\text{CP}, z = \underline{y} \leq \frac{W+d}{2}\right) = U_i(\text{DNE})$$
$$B + p'(1+2\alpha)\underline{y} - (1+\alpha)d - \alpha p' W = B - \alpha p W$$

$$\underline{y}_1 = \frac{\alpha(p'-p)W + (1+\alpha)\,d}{p'(1+2\alpha)} \tag{11}$$

However, note that the found $\underset{\sim}{y}$ may not be in the assumed interval, so the following inequality also has to be satisfied

$$\begin{aligned} \underset{\sim}{y}_1 = \frac{\alpha(p'-p)W + (1+\alpha)\,d}{p'(1+2\alpha)} &\leq \frac{W+d}{2} \\ \Rightarrow [2\alpha(p'-p) - p'(1+2\alpha)]\,W + [2(1+\alpha) - p'(1+2\alpha)]\,d \leq 0 \end{aligned} \tag{12}$$

If we assume $\underset{\sim}{y} \in \left[\frac{W+d}{2}, B+W\right]$, then

$$U_i\left(CP, z = \underset{\sim}{y} \geq \frac{W+d}{2}\right) = U_i(DNE)$$
$$B + p'(1-2\beta)\underset{\sim}{y} - (1+\alpha(1-p') - \beta p')d + \beta p' W = B - \alpha p W$$

$$\underset{\sim}{y}_2 = \frac{-(\beta p' + \alpha p)W + (1+\alpha(1-p') - \beta p')d}{p'(1-2\beta)} \tag{13}$$

Again the found $\underset{\sim}{y}_2$ has to be in the assumed interval:

$$\begin{aligned} \underset{\sim}{y}_2 = \frac{-(\beta p' + \alpha p)W + (1+\alpha(1-p') - \beta p')d}{p'(1-2\beta)} &\geq \frac{W+d}{2} \\ \Rightarrow [-2(\beta p' + \alpha p) - p'(1-2\beta)]\,W + [2(1+\alpha(1-p') - \beta p') - p'(1-2\beta)]\,d \geq 0 \end{aligned} \tag{14}$$

Combining (12) and (14) we obtain

$$\underset{\sim}{y} = \begin{cases} \underset{\sim}{y}_1 & \text{if } p' \geq \frac{2[(1+\alpha)d - \alpha p W]}{(2\alpha+1)d + W} \\ \underset{\sim}{y}_2 & \text{if } p' \leq \frac{2[(1+\alpha)d - \alpha p W]}{(2\alpha+1)d + W} \end{cases} \tag{15}$$

Influencer: Relation between up-front and conditional payment

Lemma 1. *Let y_x be the utility equivalent conditional payment to an up-front payment of x for the influencer. Then $y_x \geq x$.*

Proof. If conditional payment of y_x is equivalent to an up-front payment of x then $U_i(\text{CP}, z = y_x) = U_i(\text{UFP}, z = x)$. Note that the slope of $U_i(\text{UFP})$ is greater than or equal to that of $U_i(\text{CP})$ for all $z \in R$ and $p' \in [0, 1]$:

$$\frac{\partial U_i(\text{UFP})}{\partial z} - \frac{\partial U_i(\text{CP})}{\partial z} = \begin{cases} (1+2\alpha)(1-p') & \text{if } z \leq \frac{d}{2} \\ (1-2\beta)(1-p') & \text{if } z \geq \frac{d}{2} \end{cases}$$

Observe also that $U_i(\text{CP}, z = 0) = U_i(\text{UFP}, z = 0) = B - (1+\alpha)d - \alpha p' W$. It follows that $y_x \geq x$. ■

After finding the participation constraint of the influencer for each payment type, we move on to candidate's problem.

Candidate's participation constraint for influence buying with up-front payment

The candidate prefers to buy endorsement with UFP over not buying endorsement if $U_c(z = \underline{x}; \text{UFP}) \geq U_c(.; \text{DNE})$. Assume first that $\underline{x} \in \left[\frac{d}{2}, \frac{W+d}{2}\right]$. Then individual rationality condition is satisfied iff

$$\underbrace{\frac{(1+\alpha-\beta)}{1+2(\alpha p' - \beta(1-p'))}}_{\geq 0} \left[\underbrace{(p'-p)}_{\geq 0} \underbrace{(1 - 2(\beta+\alpha)(1-p'))}_{?} W - d \right] \geq 0$$
$$\Rightarrow p'W - d - pW - 2(p'-p)(\alpha+\beta)(1-p')W \geq 0 \tag{16}$$

Assume next that $\underline{x} \geq \frac{W+d}{2}$. Then the candidate prefers buying endorsement with up-front payment to not buying endorsement if $U_c(z = \underline{x}_2; \text{UFP}) \geq U_c(.; \text{DNE})$

$$B + p'(1+\alpha)W - (1+2\alpha)\left[\frac{-(\beta p' + \alpha p)W + (1-\beta)d}{1-2\beta}\right] + \alpha d \geq B + p(1-\beta)W$$
$$\Rightarrow \frac{1+\alpha-\beta}{1-2\beta}\left[p'W - (1-2(\alpha+\beta))pW - d\right] \geq 0 \tag{17}$$

Combining this with (8), we find that UFP$\geq \frac{W+d}{2}$ is individually rational for the candidate iff

$$p' \in \left[(1-2(\alpha+\beta))p + \frac{d}{W}, \frac{(2\beta - 2\alpha p - 1)W + d}{2\beta}\right] \tag{18}$$

As the final step notice that if $p'W - d < 0$, neither (16) not (17) can be satisfied.

Candidate: Choice between buying endorsement with up-front and conditional payment

Suppose both UFP and CP are rational for the candidate. Then the optimal offer of the candidate depends on the utility difference $U_c(z = \underline{x}; \text{UFP},) - U_c(z = \underline{y}; \text{CP})$. We will consider 3 cases: (1) $\underline{x} = \underline{x}_1$ and $\underline{y} = \underline{y}_1$, where $\underline{x}_1, \underline{y}_1 \leq \frac{W+d}{2}$, (2) $\underline{x} = \underline{x}_1$ and $\underline{y} = \underline{y}_2$, where $\underline{x}_1 \leq \frac{W+d}{2}$ and $\underline{y}_1 \geq \frac{W+d}{2}$, (3) $\underline{x} = \underline{x}_2$ and $\underline{y} =$

$\underline{y}_2$, where $\underline{x}_2, \underline{y}_2 \geq \frac{W+d}{2}$.

Case 1: Suppose first that $\underline{y} = \underline{y}_1 \leq \frac{W+d}{2}$. Then by Lemma 1, $\underline{x} \leq \underline{y} \leq \frac{W+d}{2}$, i.e. $\underline{x} = \underline{x}_1$. By (10) and (15), $p' \geq \max\left\{\frac{2[(1+\alpha)d-\alpha pW]}{(2\alpha+1)d+W}, \frac{(2\beta-2\alpha p-1)W+d}{2\beta}\right\}$. In this case the utility difference $U_c(\text{UFP}) - U_c(\text{CP})$ can be simplified to

$$\frac{2(\alpha+\beta)(1+\alpha-\beta)(p'-1)}{(1+2\alpha)(1+2(\alpha p'-\beta(1-p')))}\left[2\alpha(p'-p)W+d\right] \leq 0 \tag{19}$$

Therefore influence buying with UFP is dominated by influence buying with CP if $\underline{x} = \underline{x}_1$ and $\underline{y} = \underline{y}_1$.

Case 2: Suppose now that $\underline{y} = \underline{y}_2$ and $\underline{x} = \underline{x}_1$. Then by (10) and (15),

$$p' \in \left[\frac{(2\beta-2\alpha p-1)W+d}{2\beta}, \frac{2[(1+\alpha)d-\alpha pW]}{(2\alpha+1)d+W}\right]$$

Then the utility difference of influence buying with UFP over CP can be simplified into

$$K\left[\left[1+2\alpha p-2\beta(1-p')\right]p'W - \left[1-2\beta(1-p')^2+2\alpha(1-p')p'\right]d\right] \tag{20}$$

where

$$K = \frac{-2(\alpha+\beta)(1+\alpha-\beta)}{(1-2\beta)(1+2(\alpha+\beta)p'-2\beta)}$$

Note that W's coefficient is strictly less than zero. This is because $(1+2\alpha p-2\beta(1-p')) \leq 0 \Leftrightarrow p' \leq 1-\frac{1+2\alpha p}{2\beta}$, but p' is less than a number between 0 and 1 only if $\frac{1+2\alpha p}{2\beta} \leq 1$, which implies that $1 \leq 2(\beta-\alpha p)$. For $0 < \beta \leq \alpha$ and $\alpha+\beta < 1$ the previous inequality cannot hold. Thus it must be that $(1+2\alpha p-2\beta(1-p')) > 0$. Hence the utility difference $U_c(\text{UFP}) - U_c(\text{CP})$ decreasing in W. Denote the rent that satisfies $U_c(\text{UFP}) = U_c(\text{CP})$ as $\tilde{W}$. Then for $W < \tilde{W}$, UFP dominates CP and vice versa. From (20), we find $\tilde{W}$ as

$$\tilde{W} = \left(\frac{1-2\beta(1-p')^2+2\alpha(1-p')p'}{1+2\alpha p-2\beta(1-p')}\right)\left(\frac{d}{p'}\right) \tag{21}$$

Now consider the candidate's individual rationality for influence buying with UFP. The utility difference $U_c(\text{UFP}) - U_c(\text{No Offer})$ with $W = \tilde{W}$ can be simplified into

$$\frac{1+\alpha-\beta}{1+2(\alpha p'-\beta(1-p'))}\left[(p'-p)(1-2(\alpha+\beta))(1-p')\tilde{W} - d\right] \tag{22}$$

$1+2(\alpha p'-\beta(1-p'))$ is always non-negative for $\beta \leq \frac{1}{2}$. Thus the sign of this expression depends on the sign of the parenthesis. Combining (21) and (22), we find that $U_c(UFP) - U_c(\text{No Offer}) \leq 0$ at $W = \tilde{W}$. As a result, we show that if influence buying with UFP dominates CP in case 2, it is also the case that influence buying with UFP is not rational for the candidate. Hence influence buying with UFP should not occur in case 2.

Case 3: Suppose now that $\underline{y} = \underline{y}_2$ and $\underline{x} = \underline{x}_2$. Then by (10) and (15),

$$p' \leq \min\left\{\frac{(2\beta - 2\alpha p - 1)W + d}{2\beta}, \frac{2[(1+\alpha)d - \alpha pW]}{(2\alpha+1)d + W}\right\}$$

The utility difference of influence buying with UFP over CP can be simplified into

$$\frac{1+2\alpha}{1-2\beta}(\alpha+\beta)(1-p')d \geq 0 \tag{23}$$

implying that the candidate prefers influence buying with UFP over CP in this case. However if $B < \frac{W+d}{2}$, the candidate will be unable to offer $\underline{x}_2$ to the influencer due to his budget constraint: the largest possible UFP offer is B.

Rationality of UFP in Case 3 if $B > \frac{W+d}{2}$

Note that Case 3 occurs if $p' \leq \min\left\{\frac{(2\beta-2\alpha p-1)W+d}{2\beta}, \frac{2[(1+\alpha)d-\alpha pW]}{(2\alpha+1)d+W}\right\}$. Thus for case 3 to exist, both $\frac{(2\beta-2\alpha p-1)W+d}{2\beta}$ and $\frac{2[(1+\alpha)d-\alpha pW]}{(2\alpha+1)d+W}$ need to be positive. This can occur only if $(2\beta - 2\alpha p - 1)W + d > 0$ and $(1+\alpha)d - \alpha pW > 0$, which implies that

$$\frac{d}{W} > \max\left\{1 + 2\alpha p - 2\beta, \frac{\alpha}{\alpha+1}p\right\} = 1 + 2\alpha p - 2\beta$$

for $\alpha \geq \beta > 0$ and $\alpha + \beta < 1$. Note also that we need $\alpha p < \beta$, since $\frac{d}{W}$ cannot be strictly greater than 1 for $d < W$. Individual rationality condition of the candidate for UFP= $\underline{x}_2$ is satisfied only if

$$p' - p \geq \frac{d}{W} - 2(\alpha+\beta)p$$

Thus the following conditions need to hold for UFP= $\underline{x}_2$ to be rational:

i. $\frac{d}{W} > 1 + 2\alpha p - 2\beta$

ii. $\alpha p < \beta$

iii. $p' \leq \min\left\{\frac{(2\beta-2\alpha p-1)W+d}{2\beta}, \frac{2[(1+\alpha)d-\alpha pW]}{(2\alpha+1)d+W}\right\}$

iv. $p' - p \geq \frac{d}{W} - 2(\alpha+\beta)p$

We find that all of these conditions are satisfied and hence influence buying with UFP= $\underline{x}_2$ is rational for a candidate for whom $\frac{d}{W} > (1-2\beta)\left[1+\frac{2\beta}{W}\right]$. Otherwise UFP= $\underline{x}_2$ is never rational. Note that the number on the right is decreasing in β, i.e. higher inequity aversion is correlated with higher likelihood of the candidate finding UFP= $\underline{x}_2$ rational. Also, the higher the ratio of cost of endorsement to the prize, the more likely that a candidate will find UFP= $\underline{x}_2$ rational.

Candidate: Rationality of influence buying with conditional payment

We finally need to show that there are cases in which the candidate prefers influence buying with conditional payment to not buying endorsement.

Suppose that $\underline{y} = \underline{y}_1 \leq \frac{W+d}{2}$ (which implies $p' \geq \frac{2[(1+\alpha)d-\alpha pW]}{(2\alpha+1)d+W}$). Then buying endorsement with conditional payment is individually rational for the candidate iff

$$\frac{1+\alpha-\beta}{1+2\alpha}\left[(p'-p)W-d\right] \geq 0 \tag{24}$$

Combining the $\underline{y} = \underline{y}_1$ condition on p' and the individual rationality constraint given above we find that if $(p'-p)W-d \geq 0$ and $p \leq \frac{d(W-d)}{W(W+d)}$, influence buying with CP=$\underline{y}_1 \leq \frac{W+d}{2}$ is rational.

Next, suppose that $\underline{y} = \underline{y}_2 \geq \frac{W+d}{2}$ (which occurs if $p' \leq \frac{2[(1+\alpha)d-\alpha pW]}{(2\alpha+1)d+W}$). Then buying endorsement with conditional payment is individually rational for the candidate iff

$$p' \geq \frac{(1-2(\alpha+\beta))pW+(1+2(\alpha+\beta))d}{W+2(\alpha+\beta)d} \tag{25}$$

Note that if $1-2(\alpha+\beta) > 0$, $p'W-d < 0$ is sufficient for nonrationality of CP= $\underline{y}_2$. Thus, for a candidate who has sufficiently strong inequity aversion it might be possible that paying $\underline{y}_2$ is rational. To see if this is indeed the case, we combine the inequalities on p' obtained from the individual rationality constraint and the condition on p' for $\underline{y} = \underline{y}_2$. Thus influence buying with CP= $\underline{y}_2$ is rational if p' satisfies

$$\frac{(1-2(\alpha+\beta))pW+(1+2(\alpha+\beta))d}{W+2(\alpha+\beta)d} \leq p' \leq \frac{2\left[(1+\alpha)d-\alpha pW\right]}{(2\alpha+1)d+W} \tag{26}$$

■

A.2 Instructions

Instructions

General

Welcome and thank you for coming today to participate in this experiment. This is an experiment in decision-making. If you follow the instructions and make good decisions, you can earn a significant amount of money, which will be paid to you at the end of the session. The currency in this experiment is called tokens (10 tokens = 1USD). The experiment consists of 20 identical decision rounds.

During the experiment it is important that you do not talk to any other subjects. Please either turn off your cell phones or put them on silent. If you have a question, please raise your hand, and an experimenter will answer your question. Failure to comply with these instructions means that you will be asked to leave the experiment and all earnings will be forfeited. The experiment will last about 60 minutes.

Roles

At the beginning of the experiment you will be randomly assigned a role. The two possible roles you can be assigned are `**Voter**' and `**Candidate**'. There will be an equal number of voters and candidates. Your roles will stay fixed for all 20 rounds until the end of the experiment. That is, if at the beginning of the experiment you were assigned the role of a candidate (voter), you will keep this role for the entire experiment.

At the beginning of <u>each round</u>, all participants will be randomly paired, with each pair consisting of one voter and one candidate. Since you are most likely to be matched with a different participant in each round, it will be impossible to track your counterpart between rounds. No participant will ever be informed about the identities of the participants they are paired with, neither during nor after the experiment.

In this experiment, at each round, both the voter and the candidate are assigned **20 tokens**. Each round, **the candidate** has the chance to win **200 additional tokens**. Whether the candidate wins the additional tokens is determined randomly by the computer in the following way: The candidate wins the election (and hence the additional 200 tokens)if the computer draws a **WHITE** ball from an urn that contains RED and WHITE balls. The total number of balls contained in the urn is fixed at 100, but the number of white balls in the urn will change from one round to another.

The voter can increase the number of white balls (by exchanging them with red balls) in the urn by voting for the candidate. However, this costs **10 tokens** to the voter.

Payment Types

A payment is what a candidate can offer the voter in exchange for their vote. The payment is in terms of tokens and it can take two possible forms, "Up-front Payment" and "Conditional Payment".

- An up-front payment, if accepted by the voter, is paid to the voter prior to the election.
- A conditional payment, if accepted by the voter, is paid to the voter **if the candidate wins** (i.e. payment is conditioned on the candidate winning the election) and hence paid after the election.

Development of each round

For each group, each of the 20 rounds consists of an election process with the following sequence of events:

1. Both the candidate(C) and the voter (V) are informed about the following:
   - Number of white balls in the urn
   - Number of white balls in the urn if the voter votes for the candidate

2. In each group, the candidate decides on the number of tokens he/she offers for each type of payment. The offer cannot be greater than what the candidate owns at the time of payment.

   Note that this implies that an up-front payment cannot be greater than 20 tokens, and a conditional payment cannot be greater than 220 tokens.

3. Once the candidate submits his/her offers, the voter is informed about these offers. The voter is then asked to choose among the following options: (a) Accept Up-front Payment in exchange for Vote, (b) Accept Conditional Payment in exchange for Vote, (c) Do not accept payment.

4. Both V and C learn about voter's choice over the candidate's offer. If the voter has accepted Up-front Payment, the amount accepted is transferred to the voter's account.

5. Voter decides whether to vote or not. Number of white balls is adjusted corresponding to the voter's choice over voting or not voting for C.

6. The computer draws a ball from the urn, and announces its color. Both V and C are informed about the result of the election.

7. If the voter has accepted Conditional Payment and the candidate has won the election, the candidate decides whether or not to make the agreed payment.

8. Payoffs realize.

Earnings

Earnings depend on whether the voter voted for the candidate, which offer he/she accepted an offerfrom the candidate and the color of the drawn ball. The following tables summarize this information for the voter and the candidate, respectively.

Voter

Earnings		Color of the ball drawn from the urn	
		White	Red
Voter chooses	Up-front payment	20 + Up-front payment – 10	20+ Up-front payment – 10
	Conditional payment	20 + Conditional payment – 10	20–10
	Voting w/o payment	20–10 = 10	20–10
	Not to vote	20	20

Candidate

Earnings		Color of the ball drawn from the urn	
		White	Red
Voter chooses	Up-front payment	20+200 – Up-front payment	20 – Up-front payment
	Conditional payment	20+200 – Conditional payment	20
	Voting w/o payment	20+200 = 220	20
	Not to vote	20+200	20

Final earnings

Once all 20 rounds are finished, the computer will randomly pick **one** round out of the 20 rounds you have played. The earnings you made on that round will be your final earnings of the experiment. We will convert tokens you earned in this round into US dollars by dividing them by 10. In addition, you will receive a participation fee of 5 USD.

Are there any questions?