When do Club Goods Buy Votes? Broker Cooperation in Clientelist Exchanges

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Abstract

In many democratic contexts, politicians prioritize the targeted distribution of resources in order to maintain voter loyalty. However, public goods are largely underprovided. Why does reliance on targeted benefits often coincide with the underprovision of resources? I argue that politicians allocate resources based on the likelihood that they will receive credit from their broker. I use a signaling model in order to isolate the relationship between the national politician and their broker and find that ambitious brokers are more likely to attribute credit to national politicians than unambitious brokers. However, in many contexts, national politicians cannot differentiate between broker types because unambitious brokers will mimic ambitious brokers in order to receive additional benefits. As a result, national politicians will moderate their use of targeted benefits in order to maximize their likelihood of receiving credit for their targeted benefits. I explore the results of this model using the case of Colombia.

1 Introduction

In many low and middle income democracies, politicians depend on the targeted distribution of resources to connect to voters. However, in many of these contexts, large numbers of citizens lack access to basic amenities due to the underprovision of public goods. This continued underprovision is particularly puzzling because the very systems that favor targeted redistribution predict that the people who will access government benefits are the poorest citizens who are most likely to rely on them. At the individual level, both pure clientelist transfers and more programmatic transfers such as conditional cash transfers provide resources to citizens in need (Holland 2015, Lucciasano & Macdonald 2012, Penfold-Becerra 2007, Stokes, Dunning, Nazareno & Brusco 2013, Weitz-Shapiro 2012). Similarly, at the community level, it is easier to enforce clientelist strategies in areas with greater reliance on resources from the national government (Devarajan, Khemani & Shah 2009, Khemani 2010).

Despite this targeting of poorer citizens and regions, goods are still underprovided (Cox & McCubbins 1986, Dixit & Londegan 1996, Finan & Mazzocco 2016, Golden & Min 2013, Lizzeri & Persico 2001, Robinson & Verdier 2013). One explanation for the continued underprovision of goods is that, in winner-take-all political systems, it is easier to target voters using pork-barrel resources than public goods (Lizzeri & Persico 2001). While the decision to focus on targeted goods where politicians can see electoral returns is well documented (Bahamonde 2018, Casas 2018, Khemani 2010, Persico, Pueblita & Silverman 2011, Rosas, Johnston & Hawkins 2014, Rueda 2017, Stokes et al. 2013, Weitz-Shapiro 2012), it cannot fully explain the persistent underprovision of goods when the areas likely to be targeted are also the areas in need. Another explanation is that the decision of where to target goods prioritizes copartisans or coalitions in a way that does not necessarily align with areas of need (Bohlken 2018, Bonilla-Mejía & Higuera-Mendieta 2017, Bowles, Larreguy & Liu 2020, Mazzalay, Nazareno & Cingolani 2017, Schneider 2020). This approach begs the question: How can we explain the simultaneous underprovision of public goods with widespread use of targeted distribution of resources in weakly institutionalized party environments?

I argue that an important reason why the use of clientelism coexists with a marked underprovision of goods is related to credit claiming. When politicians use targeted local goods in order to provide resources, the electoral returns are indirect (Samuels 2002). Instead, they depend on reducing the incentive of local actors to hijack credit from the national actors who are instrumental in providing the resources. This issue has been tackled in a variety of ways, including redirecting resources to non-governmental groups in order to minimize the risk of credit hijacking (Bueno 2017), prioritizing copartisans where both actors can benefit from credit (Feierherd 2020), and recentralizing efforts that increase the clarity of responsibility(Beazer & Reuter 2019). However, issues of credit claiming are still salient: in weakly institutionalized party systems a party brand is less likely to carry benefits from joint credit(Feierherd 2020) because personalistic linkages matter more to voters than party alliances. Moreover, in these contexts local politicians who rely on their personal reputations are likely to use their visibility to claim credit, even when their involvement in projects is limited(Cruz & Schneider 2017).

As a result, national politicians in weakly institutionalized party systems need to determine how to provide benefits in a way that maximizes their likelihood of receiving credit. Receiving credit for a project reduces the risk of providing locally targeted benefits without receiving returns in the form of increased vote shares. One way to do this is by seeking the brokers, or middlemen, who are most likely to reliably attribute credit.

Reliable brokers are the main actors in targeted exchanges and serve as intermediaries between the politician providing benefits and the voters who receive these benefits. Brokers are often assumed to be reliable because they are copartisans who are selected, and monitored, by a well institutionalized party machine (Holland & Palmer-Rubin 2015, Kitschelt & Wilkinson 2007, Mazzalay, Nazareno & Cingolani 2017, Stokes et al. 2013). However, these well institutionalized party machines do not exist in much of the developing world. In the absence of a strong party brand (Lupu & Riedl 2013), politicians seek independent brokers who can sell their services to the politician who offer the most benefits (Camp 2017, Holland

& Palmer-Rubin 2015, Novaes 2018). In order to be effective, these brokers must resist the temptation of credit hijacking for their own benefit, instead attributing credit to the national politicians interested in maximizing their potential voter returns.

Understanding how politicians prioritize credit when determining how to allocate targeted goods is particularly important because it shapes political resource allocation. These decisions determine who receives additional benefits from the national government. In developing contexts, these benefits are the crux of development. In countries where clientelism is more prevalent, these benefits can range from household level benefits, like roofing materials or cisterns, to more community-level benefits like borehole projects (Baldwin 2019, Frey Forthcoming). In both scenarios, these goods are fulfilling a tangible need in a community and are delivered based on location, their party affiliation, or their status as a potential swing voter rather than because these are the people and communities with the highest level of need.

In this article, I develop a new theory for why clientelism coexists with, and contributes to, the underprovision of resources in areas with high levels of need. I argue that national-level politicians are motivated by maximizing their likelihood of receiving credit when determining where to provide targeted local benefits like club goods. I then use a formal signaling model in order to generate predictions about when brokers are most likely to provide credit to a national politician. I focus explicitly on the case where these brokers are local-level elected politicians who have particularly strong motivations to claim credit for their own political benefit (Novaes 2014, Novaes 2018).

The basic model has three stages. Prior to the start of the game, nature determines whether a broker is ambitious or unambitious. I define ambition broadly as the desire to run for higher-level office in the future. This distinction changes the relative benefit that each broker receives from cooperating with the national politician or claiming credit. In the first stage of the game, the broker sends a signal of their investment in building and maintaining political networks. This is a costly signal that is observed by the national

politician. Second, the national politician decides whether to provide a targeted benefit to the municipality where the broker works. Finally, the broker decides whether to attribute credit. Since both ambitious and unambitious brokers can send the network investment signal, politicians are faced with the challenge of trying to determine which brokers are most likely to attribute credit.

I find that when the size of the targeted benefit is sufficiently low, both ambitious and unambitious brokers are likely to attribute credit. However, for moderately sized benefits, ambitious brokers are more likely to attribute credit than unambitious brokers. When the fixed cost of investing in network building is moderate, such as when brokers rely on their own use of patronage to maintain their network, the ambitious broker is more likely to pay the cost of investing in building a voter network than the unambitious broker. Despite these differences in broker behavior, under many conditions, the unambitious broker will still pay the cost of network building in order to increase their likelihood of receiving benefits. Since this propensity to imitate ambitious brokers decreases the national politician's ability to select the broker most likely to attribute credit, the national politician will moderate their use of targeted benefits to reduce the risk of credit hijacking by unambitious brokers.

The fear of credit hijacking provides a meaningful mechanism for why politicians are inclined to underprovide goods. Since providing fewer resources increases the likelihood that national politicians receive credit for their investments, politicians will prefer to provide small benefits, like green spaces, rather than further reaching resources, like water treatment facilities. Moreover, this research suggests that ambitious brokers are more likely to be reliable. When these brokers are local politicians, the most desirable brokers are also the most likely to challenge the national politician's political career in the future. I illustrate the implications of my theory using the case of Colombia, an extensively decentralized country where political parties are weakly institutionalized and clientelist linkages are common.

2   Club Goods and Weakly Institutionalized Political Parties

In many developing democracies, political actors manage their own clientelist networks outside of political party machines. While clientelism is often viewed as a party-wide phenomenon, very few parties have been able to build institutionalized party machines like Mexico's Institutional Revolutionary Party (PRI) or Argentina's Justicialist Party (PJ). Rather, in many developing democracies around the world, there are deinstitutionalized and decentralized political parties that have reduced politicians' reliance on well-established parties(Bowles, Larreguy & Liu 2020, Dargent & Muñoz 2011). In these contexts, the party label does not offer an electoral advantage (Bonilla-Mejía & Higuera-Mendieta 2017).Consequently national politicians are responsible for selecting their own independent brokers and cannot rely on a party to help them select partisan brokers (Holland & Palmer-Rubin 2015).

In cases where deinstitutionalized parties and low levels of party capacity make it difficult to monitor a clientelist machine, politicians may have more limited access to resources to build micro-targeted clientelist networks. Despite this, legislators rely heavily on locally targeted benefits, such as club goods. Club goods, or excludable public goods, can take a variety of forms– including projects ranging from soccer fields to new roads connecting isolated communities to the town centers to new medical clinics serving small villages. Club goods are still used by national politicians because they can be targeted toward particular areas for specific voters (Berenschot 2018, Khemani 2010, Lizzeri & Persico 2001, Mazzalay, Nazareno & Cingolani 2017). When it is not feasible to use micro-level targeting through direct cash transfers or patronage, club goods provide a way for national politicians to reach a broader group of voters in order to minimize the consequences of any singular voter defecting from the clientelist bargain. Moreover, citizens concerned with the normative implications of more direct targeting are less likely to object to club goods.

Like micro-targeted clientelist goods, club goods are more effective when politicians can

work with brokers who are able to help decide how to distribute the club good in order to target the voters most likely to benefit the national politician. In their description of brokers Stokes et al. (2013) focus on the idea of brokers as rent-seekers who will focus their efforts on loyal voters in order to extract larger rents. In this context, a broker will signal the size of their network by mobilizing voters for rallies and, the more important the broker is for victory, the less likely they are to extract goods for themselves. I argue that this model changes in the club goods context since the resource itself can benefit the broker. Rather than focusing on the size of their network, brokers will signal their effort and investment in building a network. This occurs through tangible work maintaining existing voter networks, including using clientelist appeals, or broadening their political coalition with other local political actors. Further, I argue that in a club goods context, brokers are motivated by their personal career goals rather than rent extraction.

While developing this model, I conducted interviews with academics, local experts, and both local an national level bureaucrats in Colombia and Peru. During these interviews, subjects expressed that the municipalities likely to receive additional benefits were those where national politicians were able to maintain relationships with local politicians who act as brokers. However, no subjects could define what features helped local politicians become members of a national politician's network beyond downplaying the importance of political parties. In this article, I propose an explanation for how legislators determine who receives club good benefits in order to understand the continued underprovision of resources. I argue that legislators will moderate their use of benefits in order to minimize the risk of credit hijacking by unreliable brokers. I expect that brokers are more likely to receive additional benefits when they have shown that they expect to stay in the political-system long-term. Brokers will invest in building a network that signals political ambition when the club goods benefits are particularly desirable. I argue that ambitious brokers who need to maintain voter networks and expand their reach are more likely to be central to a national politician's network.

3   A Signaling Model of Brokerage

In order to analyze when brokers will attribute credit to national politicians for club goods in their municipality, I focus on an elite-driven model of the interactions between a national politician and a broker. This model explicitly omits the presence of a political party with its own interests since I am interested in weakly institutionalized party environments where politicians are responsible for building and maintaining their own political network. Consequently, it is possible for national politicians encounter copartisans who are unreliable brokers or successfully build a network across party lines. The intuition of the model stems from each actor's optimal preferences.

National politicians prefer to provide goods efficiently. That is, to minimize waste, national politicians want to provide goods to brokers who have stable blocks of voters that they can mobilize in order to support the national legislator. When the brokers are local politicians, they can use their information about local constituents in order to provide club goods where they are most likely to be effective. However, when there is ambiguity about who provides local goods, a national politician can only benefit from club goods if she receives credit for providing the resource.[1]

As a result, I treat credit as a discrete good. The broker can claim credit, reaping all of the benefits of being affiliated with any local projects and improvements, or he can attribute credit, meaning that the national politician is able to benefit from local improvements. In this model, I do not distinguish between credit attribution and credit sharing, but rather classify any action to assign credit to another official is an act of credit attribution. In doing so, I assert that the national politician needs her broker to reliably signal the politician's role in providing club goods in order for the club goods to have electoral payoffs.

Not all brokers are likely to act as reliable brokers. In this model, I focus on two types of brokers with different preferences that affect the brokers' optimal decision. The "ambi-

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[1]Throughout the article, I use she when referring to a national politician and he when referring to a broker.

tious" broker aspires for higher office and benefits from building a personal network with the national politician. Given his long-term goals, he receives a higher benefit from being in a national politician's network. In contrast, the "unambitious" broker may hope to stay in local-level politics, and thus receives a higher benefit from showing his local constituents how much he himself does for the municipality. For the unambitious broker, attributing credit is costly because it tells his constituents that he is not the politician most responsible for local improvements. The unambitious broker is less likely to prioritize his long-term relationship with other politicians over his short-term relationship with voters.

I model the interactions between the national politician and the broker using a signaling game. First, nature decides whether a broker is the ambitious or unambitious type. A broker is an ambitious type with a probability, p. The broker's type determines the broker's preferences. Then, the broker determines whether to pay to signal his ambition.

I specifically treat the ambition signal as the decision to invest in maintaining a strong political and voter network. For simplicity, I refer to this as the network investment signal. The network investment is costly since in order to maintain a network, a broker needs to exert a considerable amount of effort connecting to both their voters and to other politicians. There are many ways to send this signal, from building local clientelist networks using strategies like patronage (Kemahlioglu 2011), to creating coalitions with brokers in other municipalities to collectively lobby for resources. Conversely, the absence of a signal implies that the broker is not engaged in network maintenance between electoral cycles. These brokers do not signal ambition because they are not using their position, their finances, or their energy in order to maintain voter networks or become central figures in the broader political landscape. These brokers, therefore, are more likely to maintain their reputation with voters based solely on their performance or personal charisma.

The national politician, who prefers to target stable constituencies, will observe the network investment signal. After observing the signal, she decides whether to provide a benefit of exogenously determined size, k.

Finally, a broker determines whether to "attribute credit", or give credit to the national politician for the benefit, or "claim credit" and assert his responsibility in providing the benefit to citizens. When a broker attributes credit, he advertise his relationship with the national politician. This can include performative credit attribution such as inviting politicians to ceremonies for the new good or advertising the good as a joint venture. However, if the broker claims credit, he assumes complete responsibility for the local good either by abstaining from commenting on the new good, visiting the site of the good, or hosting his own ribbon cutting ceremony. When a broker does not advertise a project, the voters are unlikely to update their beliefs about who provides a resource and are, on average, likely to credit the local government. The extensive form of the game can be seen in Figure 1.
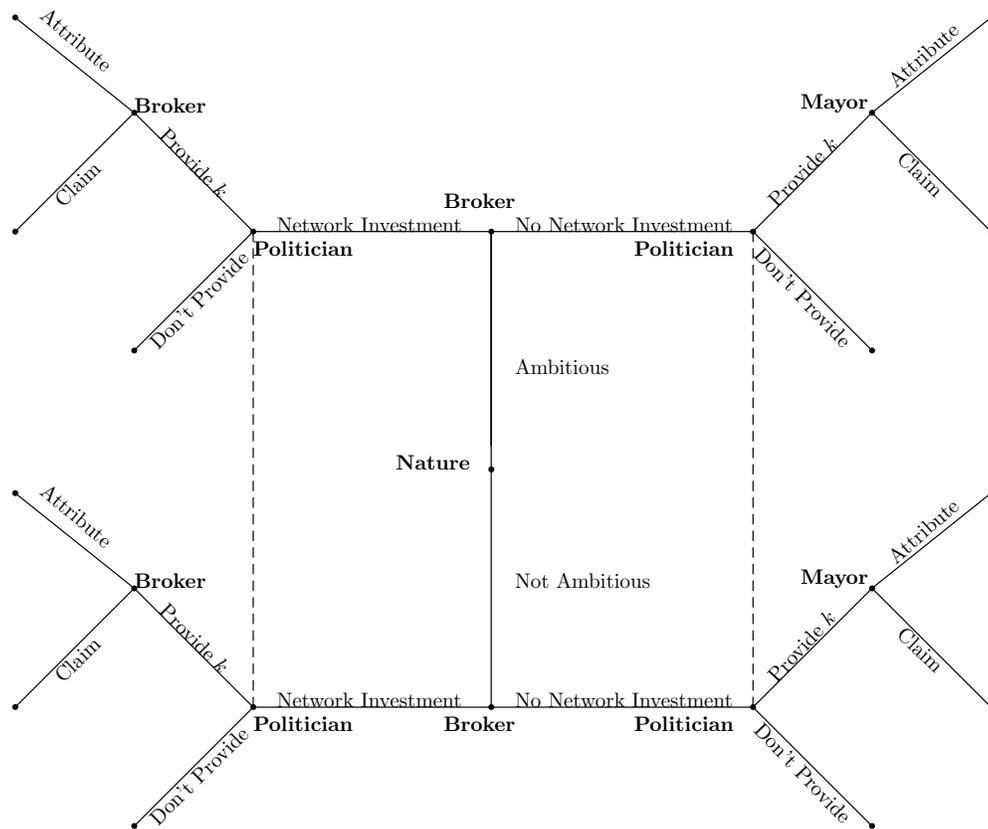

Figure 1: Signaling Game

The utility functions for national politicians and the ambitious and unambitious brokers are a function of the size of a club good benefit, k, a multiplicative benefit, σ, for receiving

Parameter	Definition	Range of Values
k	Size of the benefit provided	$\in [0,1]$
σ	Additional benefit for receiving credit	> 1
α	Base payoff for receiving a benefit	$\in (0,1)$
c	Cost of network investment	> 0
I_c	Indicator for receiving credit	$\{0,1\}$
I_s	Indicator for network investment	$\{0,1\}$
N	Subscript referring to the national politician	
L	Subscript referring to a low value	
H	Subscript referring to a high value	

Table 1: Model Parameters

credit for a club good, and a base benefit, α, that is a proportion of the size of the benefit that the broker receives based on being selected. Table 1 defines each of these parameters and their components.

The national politician's utility is a function of whether or not she receives credit and the size of the club good she provides. The national politician will always pay the cost of providing the benefit. However, if she receives credit, she receives an additional credit reward, σ. This payoff can reflect future electoral gains since local goods can effectively persuade swing voters (Rosas, Johnston & Hawkins 2014). The national politician's utility, therefore, is expressed as $k(I_c\sigma_N - 1)$ where I_c is an indicator function that determines whether the national politician has received credit. When the national politician does not receive credit, her payoff is negative.

The broker's utility functions are a function of a personal benefit for receiving the good and an additional credit claiming reward. The benefit for receiving a good, α, reflects the value the broker places on having the good. If a broker invests in a network, he pays a cost, c. The broker will receive his valuation of the good, as well as any additional benefit for credit claiming. However, the broker will also pay a normalized reputation cost, 1, as a punishment for failing to attribute credit. The broker's utility can be expressed as $k(I_c\sigma + \alpha) - I_c 1 - I_s c$. In this function, I_c is one if the broker claimed credit and zero otherwise while I_s assumes the value of one when the broker sends the network investment signal. A broker who claims

credit receives a larger personal utility, but pays a cost for harming his relationship with the national politician. The reputation cost also captures the loss of future goods from the national politician.

Since the ambitious broker is concerned about his reputation beyond his own municipality, he values receiving a benefit, regardless of credit, more than a broker who is more focused on his local reputation. For this broker, becoming a member of a national politician's network is its own reward, and municipal improvements can signal competence to actors outside his municipality. As a result, the ambitious broker will receive a larger benefit α for all potential benefits, k. The ambitious broker will always receive α_H. The unambitious broker, because he places greater emphasis on how his voters respond to goods, place less value on the good itself and will receive α_L. While both brokers benefit from receiving club goods benefits, the ambitious broker benefits more because he places higher value on being part of the national politician's political network.

Likewise, the unambitious broker receives a higher benefit, σ, when he claims credit. For this broker, maintaining his local reputation is the most important consideration, so he will receive a payoff of σ_H when he claims credit. On the other hand, the ambitious broker will be more concerned about the risks associated with boosting his reputation at the expense of being part of a national politician's network and will place less value on receiving credit from voters. Thus, he will receive a benefit of σ_L when he claims credit. As with receiving benefits, both brokers benefit from claiming credit, but the payoff for the ambitious broker is lower because he needs to build a broader network. The full utility functions can be seen in Table 2

National Politician Strategy	Broker Strategy	National Politician Payoff	Ambitious Broker Payoff	Unambitious Broker Payoff
Don't Provide	-	0	$-I_s c$	$-I_s c$
Provide $k \in (0,1]$	Attribute credit	$k(\sigma_N - 1)$	$k\alpha_H - I_s c$	$k\alpha_L - I_s c$
Provide $k \in (0,1]$	Claim Credit	$-k$	$k(\sigma_L + \alpha_H) - 1 - I_s c$	$k(\sigma_H + \alpha_L) - 1 - I_s c$

Table 2: Payoffs

3.1 Best Responses

3.1.1 Stage 3: Credit Attribution

In the final stage of the game, the broker decides whether to attribute credit of claim credit. The broker will attribute credit only where the utility from attributing credit is greater than the utility from claiming credit for himself.

Lemma 1: *The ambitious broker is more likely to attribute credit than the unambitious broker.*

Proof. For the ambitious broker, the condition is met when $k \leq \frac{1}{\sigma_L}$ while for the unambitious broker, this occurs when $k \leq \frac{1}{\sigma_H}$. $\frac{1}{\sigma_L} > \frac{1}{\sigma_H} \forall \sigma_L < \sigma_H$ $\qquad\qquad\square$

When $k > \frac{1}{\sigma_L}$, neither the ambitious nor the unambitious broker will attribute credit. When $k < \frac{1}{\sigma_H}$ both types of brokers will attribute credit. The third region, where $\frac{1}{\sigma_H} < k \leq \frac{1}{\sigma_L}$, is most interesting because in this range of benefits, k, the two types of brokers will behave differently. In this range, the ambitious broker will attribute credit while the unambitious broker will claim credit for himself.[2]

3.1.2 Stage 2: Deciding Whether to Provide the Benefit

The national politician will always provide the benefit if she knows that she will receive credit. The national politician will always provide the benefit if $k \leq \frac{1}{\sigma_H}$. The national politician will never provide the benefit if she will not receive credit. So, she will never provide the benefit if $k > \frac{1}{\sigma_L}$.

When $k \in (\frac{1}{\sigma_H}, \frac{1}{\sigma_L}]$, whether the national politician provides the benefit is a function of her belief that the broker is ambitious. If the broker sends the signal, the national politician holds a belief, μ_s, that the broker is ambitious while if the broker does not send the signal, the national politician holds a belief, μ, that the broker is ambitious.

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[2]Full proofs of all lemmas and propositions can be found in the appendix

Lemma 2: *The national politician will provide the benefit to the broker who sends the signal if $\mu_s \geq \frac{1}{\sigma_N}$ and will provide the benefit to the broker who does not send the signal if $\mu \geq \frac{1}{\sigma_N}$.*

This lemma shows that the national politician will provide a benefit when their belief that the broker is ambitious is at least as large as the inverse of their benefit for receiving credit.

Stage 1: Deciding to Pay the Network Investment

If the broker will receive a club good regardless of investing in his network, then the broker will always prefer not to pay the investment in order to maximize his own returns and avoid paying the cost, c. However, if the network investment is the only way to receive a benefit, then the two types of brokers will only invest in the network if the fixed cost of doing so is sufficiently low.

When the size of the benefit, k, incentivizes the two types of brokers to behave differently, $k \in (\frac{1}{\sigma_H}, \frac{1}{\sigma_L}]$, then the brokers have different considerations when deciding whether to pay the cost of network investment. Since the ambitious broker will attribute credit, he will pay the cost whenever $c < k\alpha_H$. The unambitious broker, on the other hand, will pay to send the signal when the network investment is less than his benefit for claiming credit: $c < k(\sigma_H + \alpha_L) - 1$.

4   Equilibria

As seen in stage 3, whether a broker is reliable depends solely on the size of the benefit, k. An ambitious broker will be reliable whenever the size of the benefit is less than the inverse of his additional benefit for credit claiming, when $k \leq \frac{1}{\sigma_L}$. The unambitious broker will be reliable whenever the benefit is less than the inverse of his additional benefit for credit claiming, or $k \leq \frac{1}{\sigma_H}$. Thus, the national politician's optimal decision can be determined

based on the size of the benefit, k, that the national politician can use as a club good.

This implies that, whenever the benefit, k is sufficiently small, the national politician will always provide the benefit to brokers. As a result, the broker will never send the signal to avoid paying an additional cost, but the national politician will expect to receive credit. This is the safest strategy for a national politician: While she does not maximize the voters reached when providing these goods, she will always receive credit.

However, when a national politician has the ability to provide a larger benefit, she only has a positive payoff if she receives credit. This means she may provide a benefit, $k \in (\frac{1}{\sigma_H}, \frac{1}{\sigma_L}]$ depending on her beliefs. The national politician will only provide a benefit if she believes that the broker is ambitious with a probability of $\mu > \frac{1}{\sigma_N}$ or $\mu_s > \frac{1}{\sigma_N}$. A rational politician will only provide a benefit when the probability the broker is ambitious is greater than the inverse of her benefit for receiving credit.

In the range of benefits where the two brokers behave differently, it is possible for the national politician to perfectly predict which brokers are ambitious, and therefore likely to attribute credit, under a narrow set of conditions. When the national politician decides to only provide benefits to brokers who pay the cost of network investment, and the cost of network investment is sufficiently high that the unambitious broker will not send the signal $(c > k(\sigma_H + \alpha_L) - 1)$ and sufficiently low that the ambitious broker will send the signal $(c \leq k(\alpha_H))$, then only the ambitious brokers will invest in his network.

Proposition 1: *When the ambitious broker pays the cost of network investment and the non-ambitious broker does not pay the cost of network investment, there exists a separating equilibrium where the national politician can perfectly identify reliable brokers.*

This equilibrium represents an ideal situation for the national politician for two reasons. First, as when the national politician provides smaller goods, it is a safe strategy where the politician will always receive credit for her use of club goods. Second, because the equilibrium is possible for larger goods, the national politician can extract a higher utility.

However, this result is relatively unlikely: when the cost of network investment is suf-

ficiently low ($c \leq k(\sigma_H + \alpha_L) - 1$ and $c \leq k(\alpha_H)$), the unambitious broker will imitate the ambitious broker in order to receive access to club goods resources. In this condition, providing a benefit is a risky strategy where a national politician will not always receive credit.

Proposition 2: *When the cost of network investment is sufficiently low that both brokers will send the signal, there exists a pooling equilibrium where both types of brokers will send the signal and receive the benefit, despite only the ambitious broker attributing credit, when the belief that the broker who does not send the signal is ambitious is $\mu < \frac{1}{\sigma_N}$. This occurs when $\mu_s = p$ and $p \geq \frac{1}{\sigma_N}$.*

Similarly, if the national politician does not condition her decision to provide club goods on observing the network investment, she will never be able to separate ambitious from unambitious brokers. As a result, the national politician is always basing her decision on beliefs and risks a negative payoff for selecting brokers that are unlikely to attribute credit.

4.1 Comparative Statics

Given the national politician's focus on receiving credit, she will prioritize providing benefits to brokers who are more likely to attribute credit. This yields two likely outcomes. First, the national politician will prioritize very small benefits $k < \frac{1}{\sigma_H}$ because it is never rational for brokers to claim credit for these goods. Second, the national politician will condition her decision about whether to provide club goods benefits based on the observed network investment. While observing the network investment does not guarantee credit, it does create a condition where the national politician may be able to distinguish between ambitious and unambitious brokers.

When the national politician relies on an observed investment in a network in order to decide where to target goods, it is possible to observe three different equilibria: a pooling equilibrium where both types of brokers will pay the cost of network investment and receive the good, a pooling equilibrium where neither type of broker will pay the network investment

and will not receive the club goods, and a separating equilibrium where only the ambitious broker pays the cost of network investment and receives the good. The regions can be seen in Figure 2.
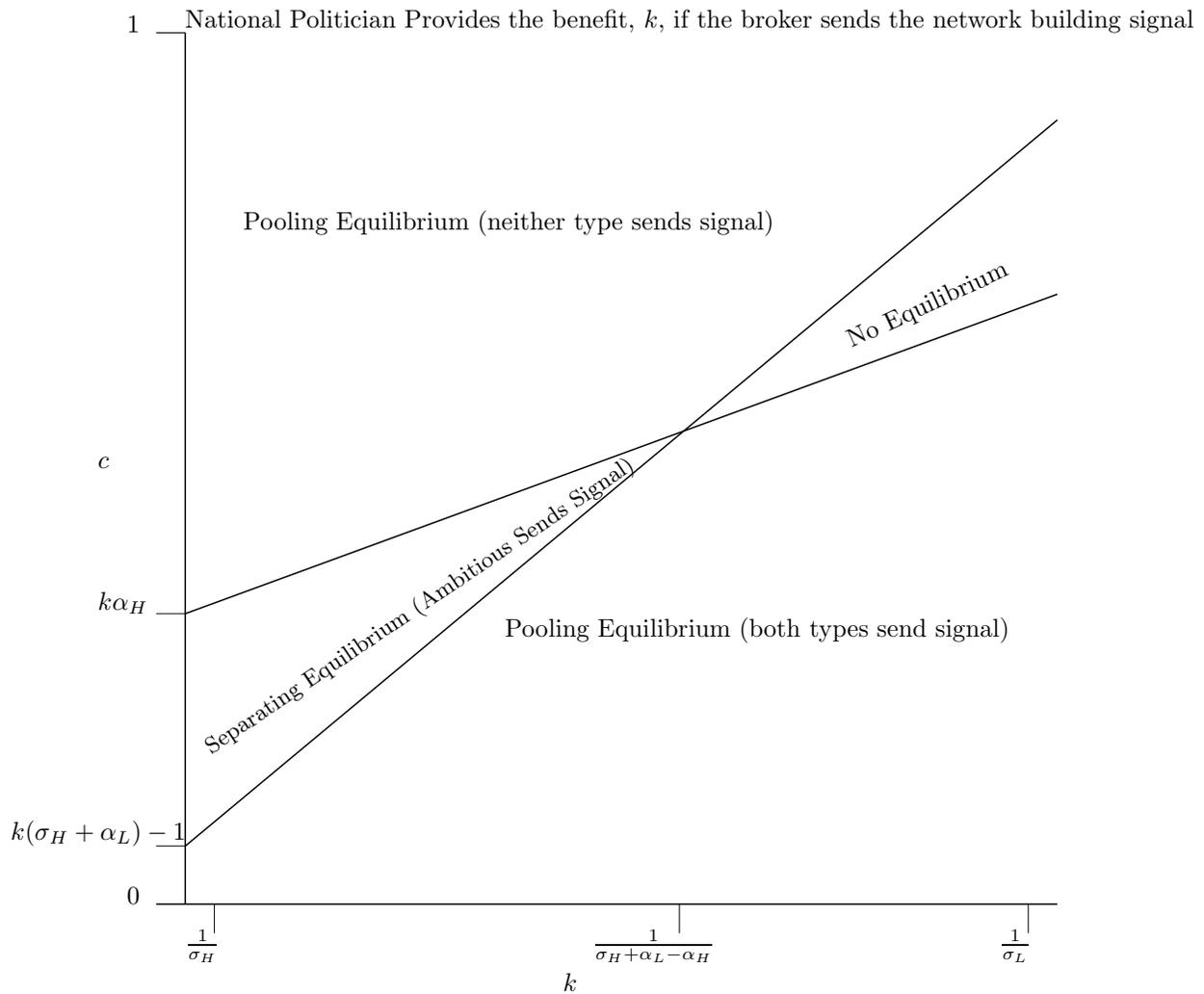

Figure 2: Equilibrium Space

In Figure 2, it is clear that the desired separating equilibrium, where the national politician can perfectly identify which brokers are ambitious, is most common for smaller goods. Thus, while providing larger benefits will always introduce additional risk, this risk is minimized when the national politician provides smaller benefits. Yet again, there is an interest in minimizing which goods are provided in order to maximize the likelihood of receiving credit.

I explore two changes in the parameter space that increase the likelihood of observing a separating equilibrium. First, when considering the cost of the network investment, the separating equilibrium can only occur between the benefit the not-ambitious broker and the ambitious broker have for receiving the benefit: $c \in (k(\sigma_H + \alpha_L) - 1, k\alpha_H)$. In order to increase the likelihood of observing the separating equilibrium, therefore, the difference between $k\alpha_H$ and $k(\sigma_H + \alpha_L) - 1$ must increase. This occurs when $\alpha_H - \alpha_L$, the difference between the baseline benefits of receiving club goods for each broker type, increases or when σ_H, the credit claiming benefit for the unambitious broker, decreases.[3]

Second, when considering the size of the benefit, k, the separating equilibrium can only occur when $k \in (\frac{1}{\sigma_H}, \frac{1}{\sigma_L}]$. The difference between these values is not fixed. Within this range, the desired separating equilibrium is only possible from the smallest possible benefit, $k = \frac{1}{\sigma_H}$ until the expected utilities of the ambitious and unambitious brokers are equal at $k = \frac{1}{\sigma_H + \alpha_L - \alpha_H}$. As in the cost condition, as the difference between α_H and α_L increases, the possibility of observing the separating equilibrium also increases. Likewise, when the value of σ_H increases, the possibility of observing a separating equilibrium decreases.

The symmetry in how the brokers' payoffs influence the possibility of observing the separating equilibrium space allows for some specific takeaways. When a national politician provides a larger benefit, there are two characteristics that reduce the risk of the unambitious broker imitating the ambitious broker. First, when the unambitious broker receives a lower benefit from credit claiming, the national politician is more likely to have the desirable separating equilibrium. Similarly, when the difference between how the ambitious and unambitious brokers value the benefit increases, the likelihood that a national politician observes a separating equilibrium increases.

In practice, this means that a risk averse politician will be most likely to provide club goods when the good available to her is small, like a new green space within a municipality. This occurs because the smaller the benefit, the more likely she will be able to separate the

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[3]See Proof in Appendix
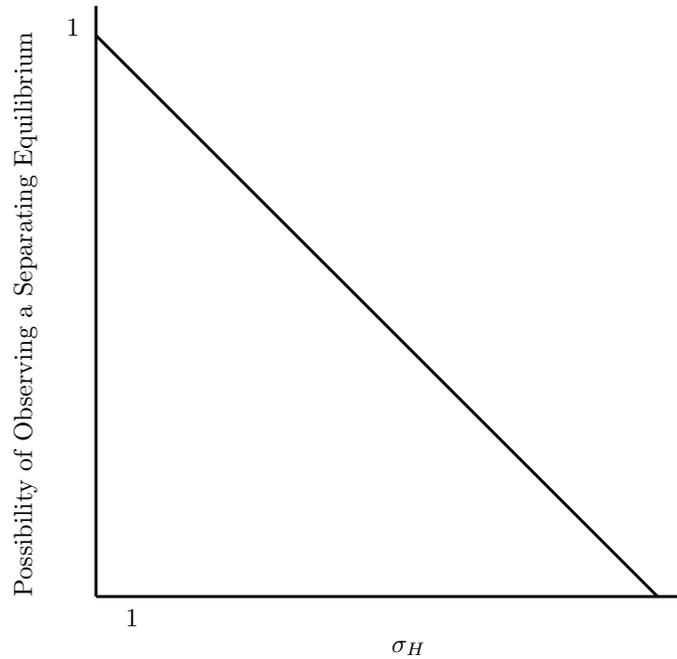
(a) Possibility of Observing a Separating Equilibrium Across the Credit Claiming Benefit for the Unambitious Broker
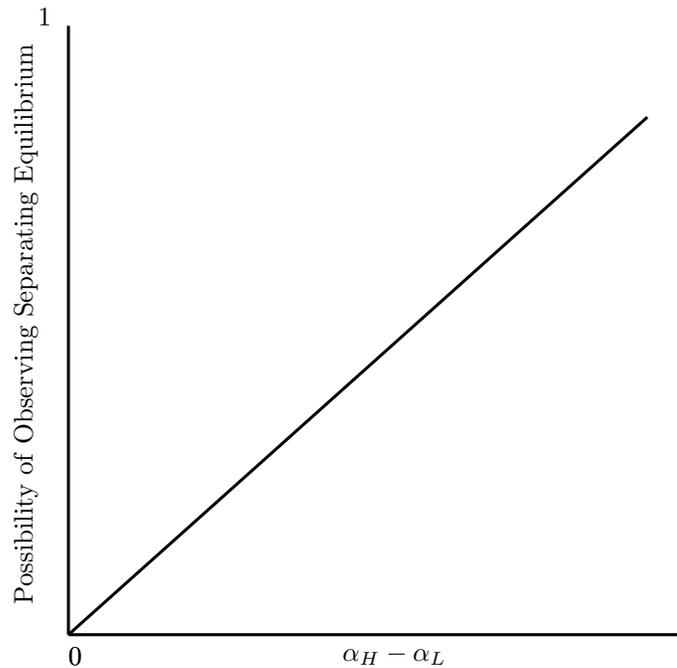
(b) Possibility of Observing a Separating Equilibrium Across the Difference in Baseline Benefits for Ambitious and Unambitious Brokers

Figure 3: Possibility of Observing a Separating Equilibrium

ambitious from the unambitious brokers. Thus, even though her payoff is larger when she receives credit for larger benefits, it is not in her best interest to provide these large benefits. Instead, providing small benefits increases the likelihood she has properly identified ambitious brokers and reduces the loss associated with providing benefits to non-ambitious brokers.

5   Illustrating the Equilibria: The Case of Colombia

Colombia is an excellent case for exploring the implications of the above model. First, the uneven fiscal decentralization in Colombia means that local governments are heavily dependent on transfers from the national government. Due to the structure of decentralization, the smallest and poorest municipalities are given the lowest level of autonomy in controlling their finances and are most shaped by national interests. Nevertheless, there is still a large variation in how well needs are met in rural municipalities. Moreover, many Colombian politicians maintain strong clientelist networks despite a weakly institutionalized party system where the party merely acts as a "name on the list".[4] In the Colombian party system, multiple political parties occupy the same ideological space and citizens are more responsive to individual candidates than party identities. The Colombian case, therefore, has both a weakly institutionalized party system where politicians engage in clientelist politics and an underprovision of public goods.

The most common means to distribute club goods as targeted benefits is through "cupos indicativos", also referred to as "jam". This is a central feature to Colombian clientelism, where many legislators, mayors, and bureaucrats refer to jam as the "grease in the wheels of Colombian politics".[5] The process of receiving jam is direct: a legislator has a particular good that they'd like to provide to a municipality and the ability to secure those funds through the necessary national ministries (La Silla Vacía 2018). For a legislator, providing goods is a strategy for reaching voters. For ministers, providing goods allows the ministry

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[4]Interview conducted in the Valle de Cauca Department in July 2016
[5]Interview conducted July 2018 in Bogota

to show that it has invested in relevant projects. For example, a legislator can hope to build a soccer field with their access to funds from the recreation department or a new wing on a hospital with their access to funds from the health ministry. The legislator contacts a mayor who is central to their network, usually a member of their department, to act as a broker and offers to invest in the project. The mayor agrees and the money is transferred. Very rarely will a mayor decline a project funded through jam. According to mayors interviewed, access to these funds is a crucial form of investment. While many mayors decry the practice as corrupt, they argue that it's a necessary corruption that improves local conditions, improves relationships across levels of government, and helps both actors politically.[6] Newspapers and citizens alike complain that jam needs to be reformed, but they agree that it is a prominent strategy that Colombian legislators use to cultivate votes.

Since implementing projects funded by jam requires the coordination of local governments, national politicians will prioritize local politicians, like mayors, to serve as their brokers. For legislators, jam is an important tool for reelection since it allows them to reach a large range of voters. However, in order to translate funds into new projects that can help them win votes, they need the support of a broker that can help them decide where the project will have the largest impact and make sure that voters know the legislator deserves credit for new projects. The pressure to select brokers who will willingly attribute credit is crucial given that, in decentralized states, citizens have trouble identifying which level of government is responsible for different local projects (Baumann, Ecker & Gross 2020, Gélineau & Remmer 2006, Rodden & Wibbels 2010).

For ambitious mayors, acting as a reliable broker incentivizes cooperation across levels of government (Bohlken 2018), providing extensive benefits. For reliable brokers, access to a national politician's network creates a web of political allies across party lines and improves the likelihood of receiving future transfers. However, for unambitious mayors, this outcome

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[6]The mechanics of this exchange, and attitudes towards the exchange, were explained by mayors in multiple municipalities in different districts, local bureaucrats, department level bureaucrats, and local academics through over 60 interviews.

is less compelling than the chance of receiving immediate credit from their constituents.

Extensive administrative decentralization in Colombia highlights the challenges faced by legislators who need to receive credit for the goods they provide. For example, health and education are funded by the national government, but mayors implement projects. In a nationally representative survey of 2000 citizens throughout Colombia, I asked who deserved credit for a series of local public goods, including road maintenance, water and sewage, schools, hospitals, parks, or electricity. When asked who funded education, only 9.17% correctly identified the legislature while 22.49% believed mayors were responsible. These results map onto voters' expectations for electoral returns. When asked how school improvements would affect the candidates the next time they ran for office, 25.3% of respondents thought a legislator would receive more votes while 82.4% of respondents though the mayor would receive more votes.

The survey results highlight the difficulty that citizens face holding their elected officials accountable: without the ability to readily discern which level of government is responsible for a given project or improvement, citizens cannot practice dual accountability. For local politicians, interacting with a project through site visits or ribbon cutting ceremonies is likely to be viewed as credit claiming (Cruz & Schneider 2017). Due to the local nature of the implementation of club goods, mayors have more opportunities to claim credit using these means. Thus, in order to attribute credit, the mayor must actively invite legislators to attend these visible events. In particular, ribbon cutting ceremonies are a meaningful signal that a legislator deserves credit for the project that can help the legislator overcome the propensity to only reward the mayor for local improvements. Since mayors benefit from the assumption that they are responsible, attributing credit to national legislators is not immediately appealing. Deciding to attribute credit communicates that someone outside the municipality was actually responsible for any development within the municipality. For the mayor looking to maintain their reputation within the municipality,even sharing credit would reduce their benefit from being seen as responsible for local improvements.

5.1 Mayor Behavior Across Types

Throughout interviews, the most common example of jam was a new soccer field. This type of project can be quickly completed and is relatively small. As a result, it increases the likelihood of receiving credit. However, when national politicians provide larger benefits, they will rely on observing a local politician's signal of their ambition. As one legislator from the Valle de Cauca department explained "I don't use [jam] to reach my constituents, but every other legislator has their mayors who they like to work with because they know [the mayor] will work for them".[7]

In order to confirm that these mayors are investing in network maintenance, I conducted interviews with mayors and local-level bureaucrats in the Antioquia and Valle de Cauca departments in Colombia. During these interviews, we discussed the process of receiving additional funds for local-level projects, interactions with officials at additional levels of government, future political aspirations, and maintaining relationships with citizens. We discussed network maintenance broadly, but both ambitious and non-ambitious mayors referenced patronage as something "everyone" participates in. The universal acceptance of patronage as central to Colombian politics supports the idea that a costly network-building signal is a frequent- and important- observation. In interviews, legislators further emphasized the idea that legislators look to mayors as brokers.

The main risk associated with providing larger benefits is that unambitious brokers are likely to pay the cost of network investment in order to imitate ambitious brokers. As a result, the national politician will only receive credit when they provide a club good to an ambitious broker. In Colombia, identifying ambitious mayors is particularly challenging. Any political official must resign and spend a full year out of office before running for a different political post. While 30.47 % of mayors would ultimately seek reelection (contributing to a large number of unambitious mayors), only 4.7% of eligible mayors chose to run for a position in the Colombian House of Representative, the Cámara de Representantes, when they were

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[7]Interview conducted October 2018 in Bogota.

eligible. As a result, national politicians are looking to identify less than 5% of mayors, but most mayors still choose to invest in network building.

In the Valle de Cauca department, one bureaucrat noted the importance of investing in network building through clientelism, even though the mayor would need to spend at least two years out of office before they could run for national office. The bureaucrat explained, "In good politics, you make sure all the temporary positions are filled with your friends, or you make positions for them. Everyone needs to do it." This official emphasized that it made sense to use patronage so that a mayor could maintain his network. Later, when discussing relationships with national-level politicians, the bureaucrat returned to the idea of patronage, saying "The government likes when you provide jobs" and said "They help you more when you show you keep supporters, and that helps you".[8]. The conclusion was clear: the more a mayor did to maintain their network, the better off they were.

Evidence of unambitious brokers sending the network building signal to mimic ambitious brokers were also evident in the Antioquia department. I interviewed several mayors from small municipalities outside of Medellin. These municipalities can all be classified as predominately rural and are heavily dependent on funds from the central government. Moreover, they have relatively low costs for network maintenance because they have small populations and high levels of need. In both contexts, small projects funded through jam would improve the quality of life in the municipalities.

In the first municipality, the former mayor was adamant in their insistence that they would only ever want to serve in municipal-level political office. The mayor was passionate about local issues and improving their municipality's economy, but felt that any step towards department or national government would hurt the mayor's ability focus on giving back to their hometown. This mayor would be classified as an unambitious type. A member of their administration further explained that this mayor ran whenever they were eligible and a personal friend and ally of the mayor ran in the off terms since mayors cannot serve two

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[8]Interview conducted in the Valle de Cauca Department, July 2016

consecutive terms. The three officials had been friends since grade school and the bureaucrat served in both administrations in order to help provide continuity across terms. Despite his local popularity, strong municipal network, and desire to remain in local-level politics, the mayor still invested in network maintenance and played an instrumental role in connecting the mayors of several municipalities to form an alliance. When asked how he discusses new local projects with citizens, the mayor stated that any new project in the municipality was his success. He put work into building the relationships and generating the funds, and he did what needed to be done to encourage investments into the municipality. Even when discussing projects that were joint efforts across several municipalities, the mayor claimed credit, explaining "I put together a group of mayors...".[9] A risk averse national politician would avoid providing larger benefits since this type of mayor would fail to attribute credit.

In the second municipality, another mayor, when asked about receiving fiscal transfers from the central government, lamented just how difficult it was to receive those transfers. The official channels for inter-governmental funds, where the municipalities can apply for specific projects, were "almost impossible" and the only way to get these funds was to focus on building relationships with legislators who would be able to help them. This mayor regularly talked about her desire to run for higher level government because only in department or national government would she have the power to do what they wanted to do. She emphasized that any new project in the municipality came from a relationship with another politician. For her, new investments in the municipality were joint efforts, and there was a clear respect for politicians in national government because they could select their allies and help distribute funds.[10]. A national politician would prefer to work with this mayor, but will be unable to differentiate between them and the unambitious mayor given the investment both actors make in network building.

The above case illustrates that when investing in networks is inexpensive, it is likely that both types of mayors will invest in building networks and the legislator will have trouble sep-

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[9]Interview conducted in the Antioquia Department, October 2018
[10]Interview conducted in the Antioquia Department, October 2018

arating the ambitious and unambitious mayors. As a result, the national politician will want to provide small benefits that maximize their likelihood of receiving credit or, at minimum, increase their likelihood of identifying the small number of ambitious brokers. The clear difficulties separating ambitious and unambitious mayors decreases a national politicians desire to risk providing larger benefits.

6   Discussion

The Colombian case highlights two important scope conditions: the widespread use of clientelist strategies and weakly institutionalized political parties. These two conditions are the most important for the model to help explain the underprovision of resources. Without a widespread use of clientelist strategies, politicians are likely to use other criteria when distributing resources, such as needs-based redistribution programs like Conditional Cash Transfers. Similarly, without weakly institutionalized political parties, reliance on partisan alignments will reduce the need to identify independent brokers.

However, both of these assumptions can be relaxed. This mechanism should still hold for systems that use local public goods rather than club goods. When relaxing this assumption, the only change should be the extent to which the goods will be targeted. The focus on providing smaller local public goods should still be a more reliable means to receiving credit than larger local public goods. In the case of weakly institutionalized parties, decentralized party systems with pyramidal systems (Bowles, Larreguy & Liu 2020), may still have both ambitious and unambitious brokers. In this instance, the national politician may favor copartisans, but they would still need to identify which copartisan broker is most likely to attribute credit.

A limitation of this study is that it does not account for the national politician's ability to claim credit. In many contexts, citizen distrust of the national government will reduce their ability to independently claim credit. However, the effects of independent credit claiming by

national government merits further study in an experimental setting.

7   Conclusion

When a national politician decides how to allocate limited resources, they can use several different strategies. First, in programmatic and clientelist systems alike, these politicians may chose to prioritize areas with high levels of need. Second, and particularly in more clientelist systems, these politicians may chose to prioritize copartisans. However, neither of these explanations fully explains how national politicians determine where to allocate goods in weak party systems. I argue that an important mechanism for determining where to provide targeted benefits is the national politician's ability to receive credit for providing the good from local brokers.

However, determining which brokers are likely to be reliable is particularly challenging. As a result, the risk averse national politician will moderate their use of benefits in order to increase the likelihood that they receive credit for their use of targeted goods. I demonstrate that concerns over receiving credit will cause national politicians to attempt to identify ambitious brokers who are more likely to attribute credit, and I illustrate through comparative statics and interviews in Colombia how rarely national politicians will be able to make the distinction between broker types.

The pressure national politicians feel helps explain the underprovision of goods in contexts where weakly institutionalized parties and a dependence on targeted benefits coexist. In the rare condition where the national politician can distinguish between ambitious and unambitious brokers, the national politician will do so regardless of the level of need in that area. More often, when the national politician cannot distinguish between broker types, they will provide smaller resources, contributing to the continued underprovision of necessary resources.

This model can be extended to allow the cost of network maintenance to change for

different types of brokers. Introducing more variation in the cost of network maintenance will help explain when it is more likely for national politicians to need to moderate their use of resources. Further exploration of how the role of credit affects the underprovision of resources can provide important insights about ongoing territorial inequalities.

References

Bahamonde, Héctor. 2018. "Aiming Right at You: Group versus Individual Clientelist Targeting in Brazil." *Journal of Politics in Latin America* 10(2):41–76.

Baldwin, Kate. 2019. "Elected MPs, Traditional Chiefs, and Local Public Goods: Evidence on the Role of Leaders in Co-Production from Rural Zambia." *Comparative Political Studies* 52(12):1925–1956.

Baumann, Markus, Alejandro Ecker & Martin Gross. 2020. "Party Competition and Dual-Accountability in Multi-Level Systems." *Journal of Elections, Public Opinion, and Parties* .

Beazer, Quintin H. & Ora John Reuter. 2019. "Who is to Blame? Political Centralization and Electoral Punishment under Authoritarianism." *The Journal of Politics* 81(2):648–662.

Berenschot, Ward. 2018. "Informal democratization: brokers, access to public services and democratic accountability in Indonesia and India." *Democratization* 26(2):208–224.

Bohlken, Anjali Thomas. 2018. "Targeting Ordinary Voters or Political Elites? Why Pork is Distributed Along Partisan Lines in India." *American Journal of Political Science* 62(4):796–812.

Bonilla-Mejía, Leonard & Iván Higuera-Mendieta. 2017. "Political Alignment in the Time of Weak Parties: Electoral Advantages and Subnational Transfers in Colombia." *Documentos de Trabajo sobre Economía Regional y Urbana* .

Bowles, Jeremy, Horacio Larreguy & Shelley Liu. 2020. "How Weakly Institutionalized Parties Monitor Broker in Developing Democracies: Evidence from Postconflict Liberia." *American Journal of Political Science* .

Bueno, Natàlia S. 2017. "Bypassing the Enemy: Distributive Politics, Credit Claiming, and Nonstate Organizations in Brazil." *Comparative Political Studies* pp. 1–37.

Camp, Edwin. 2017. "Cultivating Effective Brokers: A Party Leader's Dilemma." *British Journal of Political Science* .

Casas, Agustin. 2018. "Distributive Politics with Vote and Turnout Buying." *American Political Science Review* 112(4):1111–1119.

Cox, Gary & Matthew McCubbins. 1986. "Electoral Politics as a Redistributive Game." *Journal of Politics* 48(2):370–389.

Cruz, Cesi & Christina J. Schneider. 2017. "Foreign Aid and Undeserved Credit Claiming." *American Journal of Political Science* 61(2):396–408.

Dargent, Eduardo & Paula Muñoz. 2011. "Democracy against parties? Party system deinstitutionalization in Colombia." *Journal of Politics in Latin America* 3(2):43–71.

Devarajan, Shanta, Stuti Khemani & Shekar Shah. 2009. *Does Decentralization Enhance Service Delivery and Poverty Reduction.* Edward Elgar Publishing Limited chapter The Politics of Partial Decentralization, pp. 79–101.

Dixit, Avinash & John Londegan. 1996. "The Determinants of Success of Special Interests in Redistributive Politics." *Journal of Politics* 58(4):1132–1155.

Feierherd, Germán. 2020. "How Mayors Hurt Their Presidential Ticket: Party Brands and Incumbency Spillovers in Brazil." *The Journal of Politics* 82(1):195–210.

Finan, Federico & Maurizio Mazzocco. 2016. Electoral Incentives and the Allocation of Public Funds. Working Paper 21859 National Bureau of Economic Research.
  URL: *http://www.nber.org/papers/w21859*

Frey, Anderson. Forthcoming. "Strategic Allocation of Irrevocable and Durable Benefits." *American Jounal of Political Science* .

Gélineau, François & Karen L. Remmer. 2006. "Political Decentralization and Electoral Accountability: The Argentine Experience, 1983-2001." *British Journal of Political Science* 36(1):133–157.

Golden, Miriam & Brian Min. 2013. "Distributive Politics around the World." *Annual Review of Political Science* 16:73–99.

Holland, Alisha. 2015. "The Distributive Politics of Enforcement." *American Journal of Political Science* 59(2):357–371.

Holland, Alisha & Brian Palmer-Rubin. 2015. "Beyond the Machine: Clientelist Brokers and Interest Organizations in Latin America." *Comparative Political Studies* 48(9):1186–1223.

Kemahlioglu, Ozge. 2011. "Jobs in politicians' backyards: party leadership competition and patronage." *Journal of Theoretical Politics* 23(4):480–509.

Khemani, Stuti. 2010. "Political capture of decentralization: Vote-buying through grants-financed local jurisdictions." *World Bank Policy Research Working Paper* .

Kitschelt, Herbert & Steven L Wilkinson. 2007. *Patrons, Clients, and Policies: Patterns of Democratic Accountability and Political Competition.* Cambridge University Press chapter Citizen-Politician Linkages: An Introduction, pp. 1–49.

Lizzeri, Alessandro & Nicola Persico. 2001. "The Provision of Public Goods under Alternative Electoral Incentives." *The American Economic Review* 91(1):225–239.

Lucciasano, Lucy & Laura Macdonald. 2012. "Neo-liberalism, Semi-clientelism, and the Politics of Scale in Mexican Anti-poverty Policies." *World Political Science* 8(1):1–27.

Lupu, Noam & Rachel Beatty Riedl. 2013. "Political parties and uncertainty in developing democracies." *Comparative Political Studies* 46(11):1339–1365.

Mazzalay, Víctor, Marcelo Nazareno & Mónica Cingolani. 2017. "Redes políticas y distribución de recursos públicos a nivel subnacional: Las relaciones provincia-municipios en el caso Córdoba, Argentina." *Latin American Research Review* 52(3):304–318.

Novaes, Lucas M. 2014. "Promiscuous Politicians and the Problem of Party Building: Local Politicians as Party Brokers." APSA 2014 Annual Meeting Paper.

Novaes, Lucas M. 2018. "Disloyal Brokers and Weak Parties." *American Journal of Political Science* 62(1):84–98.

Penfold-Becerra, Michael. 2007. "Clientelism and Social Funds: Evidence from Chávez's Misiones." *Latin American Politics and Society* 49(4):63–84.
URL: *http://dx.doi.org/10.1111/j.1548-2456.2007.tb00392.x*

Persico, Nicola, José C.R. Pueblita & Dan Silverman. 2011. "Factions and Political Competition." *Journal of Political Economy* 119(2):242–288.

Robinson, James A & Thierry Verdier. 2013. "The Political Economy of Clientelism." *The Scandinavian Journal of Economics* 115(2):260–291.

Rodden, Jonathan & Erik Wibbels. 2010. "Dual accountability and the nationalization of party competition: Evidence from four federations." *Party Politics* 17(5):629–653.

Rosas, Guillermo, Noel P Johnston & Kirk Hawkins. 2014. "Local public goods as vote-purchasing devices? Persuasion and mobilization in the choice of clientelist payments." *Journal of Theoretical Politics* 26(4):573–598.

Rueda, Miguel R. 2017. "Small Aggregates, Big Manipulation: Vote Buying Enforcement and Collective Monitoring." *American Journal of Political Science* 61(1):163–177.

Samuels, David J. 2002. "Pork Barreling Is Not Credit Claiming or Advertising: Campaign Finance and the Sources of the Personal Vote in Brazil." *Journal of Politics* 64(3):845–863.

Schneider, Mark. 2020. "The discerning voter: Party-voter linkages and local distribution under multilevel governance." *Party Politics* 26(2):191–202.

Stokes, Susan C, Thad Dunning, Marcelo Nazareno & Valeria Brusco. 2013. *Brokers, Voters, and Clientelism: The Puzzle of Distributive Politics.* Cambridge Univ Press.

Vacía, La Sillav, ed. 2018. *El Dulce Poder: Asi Funciona la Politica en Colombia.* Penguin Random House Grupo Editorial Colombia.

Weitz-Shapiro, Rebecca. 2012. "What wins votes? Why some politicians opt out of clientelism." *American Jounal of Political Science* 56(3):568–583.

Appendices

A Full Model Solution and Proofs

Parameters

Utility Functions

National Politician: $U_N = k(I_c\sigma_N - 1)$

Broker: $U = k(I_c\sigma + \alpha) - I_c - I_s$

For the ambitious broker, they value their reputation with the national government, so they have α_H while the unambitious broker has α_L. This means that the ambitious broker will a higher payoff for attributing credit than the unambitious broker.

Parameter	Definition	Range of Values
k	Size of the benefit provided	$\in [0,1]$
σ	Additional benefit of receiving credit	> 0
α	Base payoff as fraction of k	$\in (0,1)$
c	Cost of investing in network maintenance	> 0
I_c	Indicator for receiving credit	$\{0,1\}$
I_s	Indicator for paying cost of network investment	$\{0,1\}$
N	Subscript referring to the national government	
L	Subscript referring to a low value	
H	Subscript referring to a high value	

Table A.1: Model Parameters

The ambitious broker is less focused on their local reputation, so if they claim credit, they receive σ_L while the unambitious broker receives σ_H.

National Politician Strategy	Broker Strategy	National Politician Payoff	Ambitious Broker Payoff	Unambitious Broker Payoff
k $\in [0,1]$	Attribute credit	$k(\sigma_N - 1)$	$k\alpha_H - I_s c$	$k\alpha_L - I_s c$
k $\in [0,1]$	Claim Credit	$-k$	$k(\sigma_L + \alpha_H) - 1 - I_s c$	$k(\sigma_H + \alpha_L) - 1 - I_s$ c

Table A.2: Payoffs

A.1   Stage 3: Broker Attributes Credit

Proof of Lemma 1. The broker will attribute if:

$$k\alpha \geq k(\sigma + \alpha) - 1$$

$$1 \geq k\sigma$$

$$k \leq \frac{1}{\sigma}$$

This means that the ambitious broker will attribute credit when $k \leq \frac{1}{\sigma_L}$ and the unambitious broker will attribute credit when $k \leq \frac{1}{\sigma_H}$. The unambitious broker will attribute credit for larger projects than the ambitious broker for all $\sigma_H > \sigma_L$

□

A.2 Stage 2: The National Politician Determines Whether to Provide the Benefit, k

Proof of Lemma 2. The national politician will always provide the benefit if they know that they will receive credit. So, the national politician will provide the benefit if $k \leq \frac{1}{\sigma_H}$. The national politician will never provide the benefit if they will not receive credit. So, they will never provide the benefit if $k > \frac{1}{\sigma_L}$.

If the benefit $k \in (\frac{1}{\sigma_H}, \frac{1}{\sigma_L}]$, whether the national politician provides the benefit is a function of their belief, μ, that the broker is ambitious. The national politician will provide the benefit if:

$$\mu(k(\sigma_N - 1)) + (1 - \mu)(-k) \geq 0$$

$$\mu k \sigma_N - k \geq 0$$

$$\mu \sigma_N - 1 \geq 0$$

$$\mu \geq \frac{1}{\sigma_N}$$

The national politician provides the benefit whenever μ or $\mu_s \geq \frac{1}{\sigma_N}$

□

A.3 Stage 1: The Broker Decides Whether to Send the Network Investment Signal

All else equal, a broker will never send the network building signal in order to receive the same payoff without the additional cost.

If the broker can only receive the benefit without sending the signal, then they will send

the cost of sending the signal is sufficiently low.

When both types of brokers attribute credit ($k < \frac{1}{\sigma_H}$), the cost must be less than the benefit the broker receives for having the benefit in their municipality. For the ambitious broker, this occurs when $c < k\alpha_H$ and for the unambitious broker, it occurs when $c < k\alpha_H$. The ambitious broker will pay a larger cost for all $\alpha_H > \alpha_L$.

When the two types of brokers behave differently ($k \in (\frac{1}{\sigma_H}, \frac{1}{\sigma_L}]$), then the ambitious broker will attribute credit whenever the cost is less than their benefit for receiving the good $c < k\alpha_H$. For the unambitious broker, this cost must be less than their benefit of claiming credit, $c < k(\sigma_H + \alpha_L) - 1$. The ambitious broker is willing to pay a higher cost whenever $\alpha_H - \alpha_L - \sigma_H > \frac{-1}{k}$

A.4 Best Responses and Equilibrium

The national politician has several best responses that need to be checked based on the size of the benefit, k, and the national politician's beliefs, μ.

The national politician's best responses are to:

1. $k \leq \frac{1}{\sigma_H}$, the best response is always to provide k

2. $k > \frac{1}{\sigma_L}$, the best response is never to provide k

3. $k \in (\frac{1}{\sigma_H}, \frac{1}{\sigma_L}]$ the best response is to provide k if $\mu \geq \frac{1}{\sigma_N}$

If $k \leq \frac{1}{\sigma_H}$, there exists an equilibrium where both types of brokers will attribute credit, the national politician will always provide the benefit, and neither type of broker will pay the network investment cost.

If $k > \frac{1}{\sigma_L}$, there exists an equilibrium where both types of brokers will claim credit, the national politician will never provide the benefit, and neither type of broker will pay the cost of network investment.

The interesting range to study occurs when $k \in (\frac{1}{\sigma_H}, \frac{1}{\sigma_L}]$ and the best response depends on the national politician's beliefs.

Under this circumstance, the national politician has four possible pure strategies.

1. The national politician never provides the benefit, k.

2. The national politician provides the benefit, k, both when they observe the network investment signal and when they do not observe the network investment signal.

3. The national politician does not provide a benefit when they observe the network investment signal but does provide a benefit when they do not observe the network investment signal.

4. The national politician provides the benefit when they observe the network investment signal and does not provide the benefit when they do not observe the network investment signal.

Let $\mu_s =$ the belief that the broker who pays the cost of network investment is ambitious and $\mu =$ the belief that the broker who does not pay the cost of network investment is ambitious. The probability that a broker is ambitious is simply p. This leads to 4 conditions to check:

1. $\mu_s < \frac{1}{\sigma_N}$ and $\mu < \frac{1}{\sigma_N}$

2. $\mu_s \geq \frac{1}{\sigma_N}$ and $\mu \geq \frac{1}{\sigma_N}$

3. $\mu_s < \frac{1}{\sigma_N}$ and $\mu \geq \frac{1}{\sigma_N}$

4. $\mu_s \geq \frac{1}{\sigma_N}$ and $\mu < \frac{1}{\sigma_N}$

A.4.1 Case 1: $\mu_s < \frac{1}{\sigma_N}$ and $\mu < \frac{1}{\sigma_N}$

In this condition, the national politician will not provide the benefit regardless of the signal. Neither type of broker will send the signal in order to avoid paying the cost, c.

Proof. Given the best responses, the national politician's updated beliefs are:

$$\mu_s = \frac{0p}{0p + 0(1-p)}$$

$$= \text{All Beliefs Consistent}$$

$$\mu = \frac{1p}{1p + 1(1-p)}$$

$$= p$$

If $p < \frac{1}{\sigma_N}$ there is an equilibrium where neither broker sends a signal and the national politician never provides the benefit k. $\mu_s < \frac{1}{\sigma_N}$ and $\mu = p < \frac{1}{N}$.

$\square$

A.4.2   Case 2: $\mu_s > \frac{1}{\sigma_N}$ and $\mu \geq \frac{1}{\sigma_N}$

In this condition, the national politician's best response is to provide the benefit regardless of the signal. Since they will receive the benefit, neither type of broker will pay the cost, c, of sending the signal in order to maximize their payoff.

Proof. Given the best responses, the updated beliefs are:

$$\mu_s = \frac{0p}{0p + 0(1-p)}$$

$$= \text{All Beliefs Consistent}$$

$$\mu = \frac{1p}{1p + 1(1-p)}$$

$$= p$$

If $p \geq \frac{1}{\sigma_N}$ there is an equilibrium where neither broker sends a signal and the national politician provides the benefit $k \in (\frac{1}{\sigma_H}, \frac{1}{\sigma_L}]$. The ambitious broker will attribute credit and the unambitious broker will claim credit. $\mu_s \geq \frac{1}{\sigma_N}$ and $\mu = p > \frac{1}{N}$.

□

A.4.3 Case 3: $\mu_s < \frac{1}{\sigma_N}$ and $\mu \geq \frac{1}{\sigma_N}$

In this condition, the national politician's best response is to not provide a benefit if they observe the clientelist signal and to provide the benefit if they do not observe the clientelist signal.

Proof. If the ambitious broker sends the signal, they receive $-c$ and if they do not send the signal, they receive $k\alpha_H$. The ambitious broker will never pay the cost of network investment

If the unambitious broker sends the signal, they receive $-c$ and if they do not send the signal, they receive $k(\sigma_H + \alpha_L) - 1$. The unambitious broker will never send the network building signal.

The updated beliefs are:

$$\mu_s = \frac{0p}{0p + 0(1-p)}$$

$$= \text{All Beliefs Consistent}$$

$$\mu = \frac{1p}{1p + 1(1-p)}$$

$$= p$$

If $p \geq \frac{1}{\sigma_N}$ then there is a pooling equilibrium where neither broker sends a signal and the national politician provides the benefit $k \in (\frac{1}{\sigma_H}, \frac{1}{\sigma_L}]$ when they do not observe the signal and do not provide the benefit when they observe the signal. The ambitious broker will attribute credit and the unambitious broker will claim credit. $\mu_s < \frac{1}{\sigma_N}$ and $\mu = p \geq \frac{1}{\sigma_N}$.

□

A.5 Case 4: $\mu_s \geq \frac{1}{\sigma_N}$ and $\mu < \frac{1}{\sigma_N}$

In this condition, the national politician's best response is to provide the benefit if they observe the network building signal and not to provide the benefit if they do not observe the network building signal.

Proof of Lemma 4. If the ambitious broker sends the signal, they receive $k\alpha_H - c$ and if they do not send the signal they will receive 0. The ambitious broker will send the signal as long $c \leq k\alpha_H$. Given the possible range of values, k, the ambitious broker will always send the signal if $c < \frac{\alpha_H}{\sigma_L}$.

If the unambitious broker sends the signal, they receive $k(\sigma_H + \alpha_L) - 1 - c$ and if they do not send the signal they will receive 0. The unambitious broker will send the signal as long as $c \leq k(\sigma_H + \alpha_L) - 1$. Given the possible range of values, k, the unambitious broker will always send the signal if $c < \frac{\alpha_L + \sigma_H - \sigma_L}{\sigma_L}$.

□

A.5.1   Case 4a: Both brokers are willing to pay the cost of network building, $c \leq k\alpha_H$ and $c \leq k(\sigma_H + \alpha_L) - 1$, Proof of Proposition 2

Proof of Proposition 4. Given that both brokers are willing to pay the cost of network maintenance, the national politician's updated beliefs are:

$$\mu_s = \frac{1p}{1p + 1(1-p)}$$

$$= p$$

$$\mu = \frac{0p}{0p + 0(1-p)}$$

$$= \text{All Beliefs Consistent}$$

If $p \geq \frac{1}{\sigma_N}$ there exists a pooling equilibrium where both types of brokers send the network building signal. The national politician will provide the benefit if they observe the signal and will not provide the benefit if they do not observe the signal. The ambitious broker attributes credit and the unambitious broker claims credit. $\mu_s = p \geq \frac{1}{N}$ and $\mu < \frac{1}{\sigma_N}$

$\square$

A.5.2   Case 4b: Neither broker pays the cost of network building,$c > k\alpha_H$ and $c > k(\sigma_H + \alpha_L) - 1$

Proof. Given that neither broker will pay to maintain a network, the national politician's updated beliefs are:

$$\mu_s = \frac{0p}{0p + 0(1-p)}$$

$$= \text{All Beliefs Consistent}$$

$$\mu = \frac{1p}{1p + 1(1-p)}$$

$$\mu = p$$

If $p < \frac{1}{\sigma_N}$ there is a pooling equilibrium where neither broker pays the cost of network investment, the national politician will provide the benefit if they observe the signal and will not provide the benefit if they do not observe the signal, and the ambitious broker will attribute credit if they received the benefit while the unambitious broker would claim credit if they received the benefit. $\mu_s \geq \frac{1}{\sigma_N}$ and $\mu = p < \frac{1}{\sigma_N}$.

$\square$

A.5.3 Case 4c: The ambitious broker does not pay the cost of network building and the unambitious broker pays the cost network building, $c > k\alpha_H$, $c \leq k(\sigma_H + \alpha_L) - 1$, and $\alpha_H - \alpha_L - \sigma_H < \frac{-1}{k}$

Proof. Given that only the not-ambitious broker is willing to pay to build a network, the national politician's updated beliefs are:

$$\mu_s = \frac{0p}{0p + 1(1-p)}$$

$$= 0$$

These beliefs are not consistent and there is no equilibrium.

□

A.5.4 Case 4d:If the ambitious broker pays the cost of network building and the unambitious broker does not, $c \leq k\alpha_H$, $c > k(\sigma_H + \alpha_L) - 1$, and $\alpha_H - \alpha_L - \sigma_H > \frac{-1}{k}$, Proof of Proposition 1

Proof of Proposition 1. Given that only the ambitious broker will be willing to pay to maintain a network, the national politician's updated beliefs are:

$$\mu_s = \frac{1p}{1p + 0(1-p)}$$

$$= 1$$

$$\mu = \frac{0p}{0p + 1(1-p)}$$

$$= 0$$

These beliefs are consistent. So, if $c < k\alpha_H$, $c > k(\sigma_H + \alpha_L) - 1$, and the ambitious broker is willing to pay a higher cost of network investment, there is a separating equilibrium where the ambitious broker pays the network investment cost and the unambitious broker does not. The national politician will provide the good if they observe the network investment and will not provide the good if they do not observe the network investment. The ambitious broker will attribute credit and the unambitious broker would claim credit if they sent the signal. $\mu_s = 1$ and $\mu = 0$.

□

B Proof of Comparative Static Outcome

B.1 Cost of Network Investment

Proof. The ambitious broker will invest in their network when $c < k\alpha_H$ and the unambitious broker will invest in their network if $c < k(\sigma_H + \alpha_L) - 1$. The separating equilibrium can exist when the difference between these two values is greater than 0:

$$k\alpha_H - k(\sigma_H + \alpha_L) - 1 > 0$$

$$k(\alpha_H - \sigma_H + \alpha_L) > 1$$

$$\alpha_H - alpha_L - \sigma_H > \frac{1}{k}$$

Holding k constant, I evaluate how to increase the difference between terms on the left, making it more likely the difference is greater than 0 and is larger. This occurs when either $\alpha_H - \alpha_L$ increases and/or σ_H decreases. $\square$

B.2 Size of Benefit

I repeat the exercise to show the same relationship holds when we consider the size of the benefit.

Proof. A separating equilibrium is only possible until the intersection of the two utility functions, $\frac{1}{\sigma_H} < k \leq \frac{1}{\sigma_H - \alpha_H + \alpha_L}$. Since the lower bound is always $\frac{1}{\sigma_H}$, the value of the upperbound can increase when $\sigma_H - \alpha_H + \alpha_L$ decreases. This occurs when $\alpha_H - \alpha_L$ increases or σ_H decreases as long as $\sigma_H - (\alpha_H - \alpha_L) > 0$. $\square$