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Breaking it Down: The Determinants of Bilateral Aid Fragmentation*

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Abstract: Recent scholarship suggests that aid fragmentation negatively impacts aid effectiveness, yet little is known about the conditions under which donors fragment aid. This paper argues that donors break aid into smaller projects in order to increase control over aid expenditure in a recipient country. Using a principal-agent framework, wherein donors are principals and recipients are agents, we analyze the determinants of fragmentation for 22 democratic donors, 1973-2008. Three broad patterns in bilateral development aid fragmentation emerge: First, the Cold War is a relevant structural break in patterns of aid fragmentation for some donors, including the US. Second, we find that interactions between recipient regime type and bureaucratic quality generally affect levels of fragmentation. Third, we find evidence that the relative bargaining power of donors and recipients shapes aid allocation decisions. The theory we present best fits the US case, revealing significant differences in aid allocation within the group of major democratic donors. We conclude with suggestions for future research.

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“In 2000-2002, the United States disbursed about \$100 million of aid to Tanzania, financing 50 different projects at an average of just \$2 million apiece. With more than 1300 projects altogether in that period, and an estimated 1000 donor meetings a year and 2400 reports to donors every quarter, Tanzania several years ago announced a four-month holiday during which it would not accept donor visits” (Birdsall 2004, 9).

Recent scholarship notes that donors increasingly fragment bilateral foreign development aid, breaking aid down into larger numbers of specified projects over time.¹ Many recipient countries assert that highly fragmented aid overburdens their bureaucracies and diminishes the value of aid by increasing transaction costs. As a result, the Center for Global Development now penalizes donors for aid fragmentation in its annual donor ranking, the Commitment to Development Index (Roodman 2006a, 2006b, 2009).

In spite of the well-noted costs of aid fragmentation, the conditions under which donors fragment aid are not well understood. This paper argues that donors break aid into smaller projects in order to increase control over aid expenditure in a recipient country. Following Powell and Bobba (2006) and Barder (2005), we agree that the political motivations for aid allocation are most clearly manifest in bilateral, as opposed to multilateral, aid. For this reason, we focus our analysis on bilateral foreign development aid. We adopt a principal-agent framework, wherein donors are principals and recipients are agents, to broadly theorize donor and recipient country incentives. This theory suggests that variation in aid fragmentation is affected by a recipient country’s regime type, its bureaucratic capacity, and its bargaining power relative to the donor country. Because major shifts in the geostrategic environment affect recipient bargaining power, we hypothesize that the end of the Cold War played a significant role in shaping aid fragmentation.

We test these hypotheses on two samples— one restricted and one broad – both during and after the Cold War. First, we test the theory on the US between 1973 and 1992 and between

¹ We define aid fragmentation in terms of the number of projects across which a donor country allocates its aid to a given recipient country in a given year. The formula to calculate aid fragmentation is presented in Section 3. Scholars use various terms to describe what we refer to here as aid (or project) fragmentation. The Center for Global Development uses the term “project proliferation.” We use the terms aid and project fragmentation interchangeably.

1993 and 2008. We then broaden the sample to include 22 major donors over the same periods.² Analyses reveal the Cold War to be a significant structural break.

We find that different donors do things very differently. Because dominant scholarship on aid allocation has focused on the US, we present one set of results that assesses determinants of US aid fragmentation in depth before moving to examine the broader sample.

We find, first, that recipient state regime type and bureaucratic quality tend to work in conjunction. For several donors, including the US, the end of the Cold War triggers a shift in the way that regime type and bureaucratic quality affect the fragmentation of aid. While capable democracies (those with higher bureaucratic capacity) always receive less fragmented aid, capable autocracies receive significantly less fragmented aid during the Cold War and significantly more fragmented aid afterwards. The finding that the US conditions its method of aid allocation on these characteristics is particularly significant since past studies of aid allocation have found that the US does not typically condition amount of aid on either regime type or state capacity.

Further, this finding strongly supports hypotheses generated using the principal agent approach introduced in Section 2. We argue that the degree to which a recipient country is perceived as a loyal or disloyal agent depends on the objective assigned to bilateral development aid by the donor. During the Cold War, democratic donors (particularly the US) were primarily concerned with developing and sustaining military alliances (Bermeo 2008). In this context, autocracies with relatively high state capacity were likely to be perceived as loyal agents, capable of maintaining control over their states in the face of Soviet-backed insurgencies, for instance. Following the end of the Cold War, however, the donor aid objectives have shifted towards economic development (ibid). Given this altered objective, autocracies are plausibly now perceived as less trustworthy agents. Reflecting this fact, donors tend to fragment aid more to autocratic recipients in order to retain discretion over aid expenditure.

Second, we find that all donors give more fragmented aid to recipient states in which a relatively large number of donors are operating.³ Notably, this is our only finding that is true for

² Donor countries include: Australia (1973-2008), Austria (1974, 1976-2008), Belgium (1973-2008), Canada (1973-2008), Denmark (1973-2008), Finland (1974-2008), France (1973-2008), Germany (1973-2008), Greece (2002-2008), Ireland (2000-2008), Italy (1973-1977, 1980-2008), Japan (1973-2008), Netherlands (1973-2008), New Zealand (1974, 1976, 1981-1985, 1995, 2002-2008), Norway (1973-2008), Portugal (1983-1985, 1987-2008), South Korea (1991-2007), Spain (1988-2008), Sweden (1973-2008), Switzerland (1973-2008), United Kingdom (1973-2008), United States (1973-2008).

all donors in all time periods. Donors also tend to increase fragmentation of aid to their former colonies. We consider these results in terms of donor objectives and the relative bargaining power of donors and recipients. Overall, we find that the logic undergirding our model best fits the US. For many other donors, variables are often significant but in opposite directions for different groups of donors. We suggest avenues for further research that might help to explain this variation.

The paper is organized as follows. Section 1 locates our research question within the broader literature on aid allocation, aid effectiveness, and aid fragmentation. Section 2 introduces our theoretical framework, including the application of principal agent theory to patterns of aid fragmentation.⁴ Section 3 presents methods and data. Section 4 presents results of preliminary models for the United States and a discussion of key findings, and Section 5 does the same for the larger sample of donor countries. We conclude in Section 6, offering possible questions for future research.

1 Foreign aid allocation

Numerous studies have attempted to disentangle the determinants of foreign aid allocation. The vast majority of this literature finds that bilateral donors generally use foreign aid as a foreign policy tool: a means to a political end.⁵ Factors affecting donors' selection of aid recipients include: (1) historical ties and political alliance (e.g. Alesina and Dollar 2000); (2) ideological affinity (Schraeder, Hook, and Taylor 1998); (3) geostrategic environment (Bermeo 2008; Fleck and Kilby 2010); and (4) size of recipient country⁶ (e.g. Dudley and Montmarquette

³ To derive this finding we calculate a “donor fragmentation index.” It measures the extent to which a recipient country’s total foreign aid comes from a particular donor country in a given year or is spread across many donor countries giving relatively equal amounts of aid. For a discussion of donor “herding” see Frot and Santiso 2009b and Barthel 2010. For consideration of donor fragmentation and measurement, see Frot and Santiso 2009a and Kilby 2010, 2-3.

⁴ In applying a principal-agent framework to the question of aid we are following several other scholars, including Martens, Mummert, Murrell & Seabright (2002). Yet, to the best of our knowledge, no one has considered the question of how donor countries may use fragmentation as a strategy to navigate principal agent problems.

⁵ There is variation across donors and over time in the extent to which donors’ political interests vs. recipients’ economic needs are targeted. Barder (2005), for instance, argues that the UK has taken significant steps towards improving the quality of its development aid. Others have argued that Nordic countries tend to provide aid that is more targeted to objective need. Additionally, Macdonald and Hodynott (2004) argue for a shift in Canadian aid motivation – and, with it, quality of aid – over time. See Lancaster (2007) for case-studies of several donors.

⁶ Specifically, donors tend to favor smaller countries, possibly because aid is more visible in a small country (and they can thus derive higher prestige) or because “buying” UNGA votes is less costly.

1976; Birdsall 2004). In a similar vein, Bueno de Mesquita and Smith (2009) argue that states give aid in order to buy policy concessions from aid recipients.

A much smaller literature considers variation in modes of aid allocation. This literature has begun to investigate aid fragmentation, or, the degree to which donors divide their aid into smaller projects within a given recipient country and time period. Frot and Santiso (2008; 2009a) find that aid fragmentation has increased over time in spite of widespread condemnation of the practice by scholars and practitioners alike (c.f. OECD 2008, 2009a, 2009b; World Bank 2003, cited by Kilby, 2010). Aid fragmentation is condemned for at least two reasons: (1) fragmentation increases transaction costs; and (2) fragmentation limits the recipient state's ability to use local knowledge and preferences to guide aid spending. Such reasoning supports our view that fragmentation represents a method by which donors attempt to retain discretion over aid expenditure, possibly at the recipient's expense.

The first line of reasoning suggests that aid fragmentation increases transaction costs and thereby reduces the value of the aid. Recipient states must allocate bureaucratic resources to *each project* specified by a donor, including, at minimum, the time required for bureaucratic interactions with each donor country, as well as project-level reporting (Acharya, Fuzzo de Lima, and Moore 2006; Roodman 2006a, 2006b). In other words, for every "project" that a donor specifies, recipients are generally required to prepare distinct reports on the progress of the project, and sometimes to host donor-country officials or consultants in-country to monitor the projects. In a developing country with limited bureaucratic resources, such requirements constitute a serious burden when aid is broken down into excessive numbers of small projects. By increasing the donor's ability to monitor recipient behavior and by redirecting recipient country bureaucratic resources towards ends specified by the donor, aid fragmentation enables donors to retain discretion over aid expenditure even after aid has been disbursed.

Further, the costs of project fragmentation may include what Knack and Rahman (2007) characterize as "bureaucratic poaching" by donor countries within recipient country bureaucracies. Since donors want the most talented recipient country bureaucrats to dedicate their time to the donor country's foreign aid projects, they may "poach" recipient country bureaucrats away from the recipient country government to manage foreign aid projects. Increasing the number of projects across which aid is spread represents one method by which donor countries mandate increased expenditure of such bureaucratic resources on their aid-

related projects. Citing the 1000 donor meetings and 2400 aid reports it is required to make annually, for example, the Tanzanian government eventually enacted restrictions on donor visits for several months out of the year so that it would have uninterrupted time to govern (Birdsall 2004). Roodman (2006a) notes that such bureaucratic requirements may also limit the recipient country's capacity to absorb foreign aid.

The second way in which aid fragmentation may negatively impact aid effectiveness is by limiting recipients' ability to use local or private knowledge to respond to shifting conditions. Such knowledge may be cultural, geographical, or political, and may equip local decision makers with unique insight concerning the most effective ways to foster local development. Recipient country officials plausibly know at least as well as donor-country experts how to anticipate, interpret, and resolve local problems.⁷ Along these lines, Easterly offers a trenchant critique of aid, as it has been practiced for the last several decades: "The fallacy is to assume that because I have studied and lived in a society that somehow wound up with prosperity and peace, I know enough to plan for other societies to have prosperity and peace" (2006, 26). Morss (1984) underscores the changes over time in donor beliefs about what constitutes "effective aid," suggesting that recipient governments are often forced into enacting faddish policy advice to their detriment. Yet aid frequently remains tied to the involvement of donor-country experts and many donors continue to increase aid fragmentation – at least in some instances. This paper seeks to establish the conditions under which fragmentation is more or less likely, with a focus on the US.

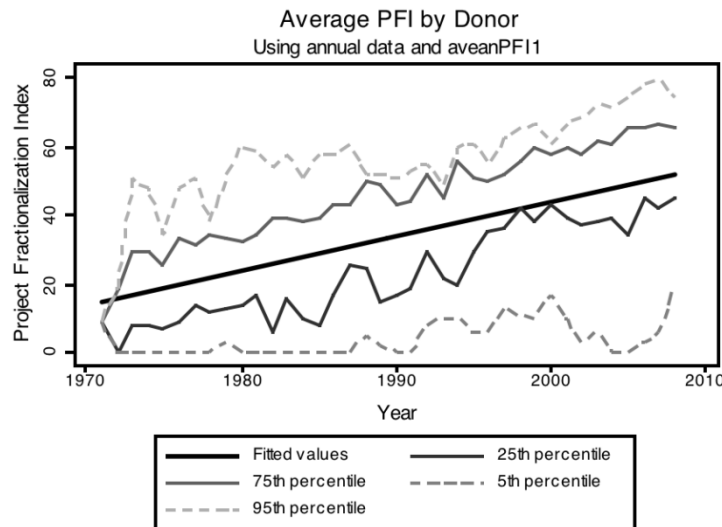
Finally, it is important to note that the link between aid fragmentation and aid effectiveness has yet to be established empirically. It is possible that there is an 'optimal' project size for each recipient country (Roodman 2009), rather than an optimal project size in general. Future research should more systematically analyze the link between aid disbursement methods and aid effectiveness. In this paper, we seek only to explain differences in patterns of aid disbursement without necessarily claiming that a particular disbursement strategy is 'better' than another in terms of aid effectiveness.

⁷ Many aid scholars argue that "aid would be more effective if there were greater 'country ownership' or broader 'participation' among government and community groups in recipient countries in setting priorities and designing programs" of foreign aid (Radelet 2006, 11).

Unexplained variation in project fragmentation

Although aid fragmentation has generally increased over time for all donors, considerable variation remains (Figure 1). This variation is not limited to differences across donor portfolios, but persists *within* donor portfolios within a given year.

Figure 1: Mean project fragmentation index over time for all donors



Notes: This figure shows average annual project fragmentation for each donor between 1973 and 2008. In the statistical models, we account for this upward shift in project fragmentation by using the distance from the average annual Project Fragmentation Index value as the dependent variable.

In their Commitment to Development Index, the Center for Global Development ranks donor countries based on comparisons across donor portfolios. For example, donors such as Australia and Italy tend to spread their aid over many projects, while Denmark and the UK spend their aid across fewer projects (Roodman 2009). Yet, importantly, Roodman also notes that differentiation in aid-giving “may occur *within* donor’s aid portfolios rather than across donors” (ibid, 2). This paper is concerned with this former type of variation. In other words, although donors exhibit different general tendencies towards fragmentation, there remains considerable unexplained variation within each donor’s aid portfolio in any given year. Therefore, the dependent variable is the difference between the aid fragmentation for a donor-recipient pair in a given year and the mean aid fragmentation level of the donor in that year. While factors like changing ideas about aid effectiveness, proliferation of NGOs, and the role of multilateral development finance (e.g. the World Bank and IMF) may affect the general trend in aid

fragmentation over time, we expect that deviations from the mean are driven by the strategic considerations presented here.

We view the decision to fragment aid as one part of a series of strategic decisions that donors make concerning foreign aid. Donors may differentiate among recipients through these decisions, which extend beyond the total amount of aid allocated (Frot and Santiso 2009a; Kimura, Sawada and Mori 2007; Fleck and Kilby 2010; Kilby 2010). For instance, Bermeo (2008) finds that recipient country governance does not influence the *amount* of aid that the US gives to a given recipient, but that the US does in fact condition the sector to which it provides aid on the recipient's quality of governance. The overarching theoretical question these studies seek to address is: In what ways do recipient characteristics impact donor aid allocation decisions?

To advance our understanding of this question, this paper considers one small piece of the complex decision-making process involved in aid allocation: aid fragmentation. We follow Huber and Shipan's (2002) approach to bureaucratic politics and apply a principal-agent framework, theorizing project fragmentation as a strategic decision by donor countries. For the purposes of this paper, we simplify the long chain of principal-agent relations between taxpayers and aid recipients significantly, considering donor governments as principals and recipient governments as agents.

2 A principal-agent approach to the donor-recipient aid relationship

In theory, if a principal and an agent had perfectly aligned interests, and if the agent was perfectly capable, both principal and agent would benefit from delegation because it enables specialization. Yet, as principal-agent theory has long noted, principals and agents never have perfectly aligned interests, nor do agents ever have perfectly reliable capabilities (Dixit 2002; Cooter 2000). Further, principals do not have full information. Although, the principal is informed by histories of repeated interactions with the agent, gathering information is often difficult. It follows that the principal-agent relationship is afflicted by two major concerns. First, the principal must ascertain and monitor the agent's *will* to implement the principal's objectives. Second, the principal must ascertain and monitor the agent's *ability* to implement these objectives.

To mitigate these concerns, principals design contracts intended to align agents' interests with their own. In contracts, principals establish incentives for specific behaviors, linking financial rewards to the achievement of their objectives. Contracts may also specify informational or reporting requirements, as well as punishment for deviant agents. In this sense, contracts constitute and embody mechanisms for monitoring and enforcement. The presence of a third party enforcer of contracts further incentivizes the agent to abide by contract provisions.

In the foreign aid context, however, the notions of shared interests, agent capability, and relative bargaining power are often expressed in complex and dynamic ways. Let's consider an example. At one point in time, a certain donor may be most interested in pursuing a security objective in a certain region. An example of this might be US aid to sub-Saharan African nations during the early 1980s, where the US objective was primarily to court and stabilize capitalist regimes, preventing the USSR from gaining sympathizers. An autocrat in the region may have a shared interest in the survival of his regime. In this sense, the US and the autocrat have a shared interest at this time point and it is not "development" in the traditional sense of the word. To the extent that the autocrat has control over his territory, he is likely to be perceived as a more capable agent than a leader who has lost effective control over large portions of his territory. Additionally, given the well-known commitment of the US to achieve its security objectives during the Cold War, the bargaining power of the US relative to the aid-recipient would be low, because the US could not credibly threaten to revoke aid if the autocrat did something the US didn't like, so long as he remained an ally in the fundamental sense (Dunning 2004).

At a different time point, however, we might logically expect the objectives, relevant type of recipient capability, and relative bargaining power of donors and recipients to have changed. Consider the same donor-recipient pair, but now in the late 1990s. The objective of the US might include economic development including provisions to prevent the spread of HIV. A democracy with high bureaucratic capability might be perceived as the most capable agent in contrast to autocracies, anocracies, or states with low bureaucratic capability. Further, as the sole superpower with few direct security interests in sub-Saharan Africa, the relative bargaining power of former recipients may have decreased, as the ability of the donor to threaten aid revocation has increased. These are just a few examples of the ways in which the three formative characteristics of the principal agent model are expected to fluctuate in response to geostrategic conditions and donor objectives.

To sum up, then, we see that the concepts of shared interests and agent capability always exist relative to a specific donor's foreign policy objective(s), which change over time. The relative bargaining power of recipients and agents can be affected by many factors, only one of which comes into play in the simplified example above. Yet the role of shifting geostrategic conditions on bargaining power is likely to be a major determinant of specific donors' behavior at certain points in time.

In addition to fluctuations in the relative bargaining power of donors and recipients, two other complications arise in the principal-agent relationship as donors attempt to achieve aid-related objectives. These problems concern the information feedback loop and accountability and enforcement. First, unlike in the traditional principal agent model, information about recipient capability does not necessarily improve with repeated interactions in the foreign aid context. This is because the feedback loop from agent to principal is riddled with unique informational problems (Martens 2002). Namely, foreign aid funding is obtained from an entirely different population than its recipients.⁸ Because of this, beneficiaries of foreign aid may observe whether or not aid is effective but there are few feedback mechanisms to transmit that information to the principal (Easterly 2002, 2006).⁹

Second, contracts to align the agents' interests with those of the principal are generally unenforceable – either formally or informally – in the foreign aid context. There is, of course, no third party enforcer in the international system, eliminating formal enforcement akin to the domestic context. Additionally, the presumed beneficiaries of foreign aid (citizens of aid-receiving countries) cannot directly adjust the financial rewards accruing to the agent (the recipient country government) based on their performance.

⁸ Taxpayers in donor countries constitute the principal financiers of bilateral development aid. They are separated geographically, culturally, and politically from the intended beneficiaries of aid, poor people living in developing countries. Between these two populations, there is a long chain of principal-agent relationships, including: (1) the donor country taxpayers and their own representatives; (2) those donor country representatives and aid bureaucracies; (3) the aid bureaucracy and a contracting agency or recipient government; (4) the contracting agency or recipient government and the contractors or specific implementers of the project; and (5) the citizens of the recipient country and their government, which allegedly oversees aid expenditure in-country, making the recipient government an agent of at least two simultaneous principals.

⁹ Monitoring all of an agent's activities could be as costly as implementing every project itself; therefore, the principal can only (rationally) monitor a select amount of the agent's activities.

Strategies to mitigate principal-agent problems: Bureaucratic politics

As noted above, principals typically mitigate information asymmetries through contracting to constrain and incentivize agent behavior to match the principal's interests. Even in the domestic context, however, alternatives to formal contracting are sometimes used. For example, when legislatures delegate to bureaucratic agencies, politicians "use statutes to establish policy details in efforts to achieve desired outcomes" (Huber and Shipan 2002, 2). Politicians either write "long statutes with extremely detailed language in an effort to micromanage the policymaking process" or "write vague statutes that leave many details unspecified, thereby delegating policymaking authority to other actors" (ibid). In other words, principals delegate strategically based on the extent of agent loyalty¹⁰ by providing more or less detail regarding desired policies. More detail implies less delegation to the agent, whereas less detail implies greater discretion for the agent.¹¹ Through this strategic use of specificity, legislatures effectively constrain the behavior of bureaucracies even without formal contracts.

Similarly, we argue that donors can – and do – provide more or less detail about how they want aid dollars to be spent. A donor can allocate aid to a recipient as a lump sum or across many small projects. The number of aid projects specified by a donor country represents one way of proxying for the level of detail that donor countries give recipients concerning how the recipient country should spend the foreign aid dollars. This is because separate projects typically come with their own directives concerning how the aid is to be spent and require separate reporting from the recipient per project, thereby increasing the opportunities for closer monitoring by the principal, at least theoretically. Alternatively, the donor government might allocate the same aid in a lump sum, which would provide less specification for – and greater discretion to – the recipient. In this sense, project fragmentation is a mechanism by which donors may delegate more or less discretion to recipients based on the likelihood that the recipient is a loyal agent.

The rest of this section examines the conditions under which principal-agent problems are more or less severe within the foreign aid context. We generate hypotheses concerning expected

¹⁰ Loyal agents are defined as agents that share donor interests and are capable of enacting them.

¹¹ US administrative law literature provides an interesting hybrid example wherein principals strategically increase specification of expected agent behavior within private contract documents to increase their control over the agent's actions.(see Dickinson 2006 for a transnational application).

conditions under which donors delegate more or less discretion to aid recipients by decreasing or increasing fragmentation, respectively.

Principal-agent problems in the foreign aid context

Interest alignment. All aid recipients are incentivized to publicly represent themselves as having shared interests with a potential donor. Aid recipients want the most aid and the most discretion over aid; therefore, donors cannot distinguish between potentially loyal and disloyal agents based upon public statements about interest affinity. Information about recipients' interests is private, and there are strong incentives for potential aid recipients to misrepresent.

Because the use of aid is difficult to monitor, recipients without shared interests are incentivized to divert resources. A donor, for example, may allocate funds intended for new road construction, but the recipient may instead use those funds to build schools in favored districts, to support the military, or to purchase new sports cars for government ministers.

Yet, donor and recipient incentives are not always misaligned. For example, the donor and recipient may both prioritize education. Or, donor countries may want to support a recipient regime facing an insurgency, in which case both the donor and recipient regime share an interest in maintaining the latter's authority. In this scenario, an agent's diversion of funds is not counter to the principal's interests: If the donor gives development aid but actually wants to subsidize a recipient's military, then diversion of funds from education to the military is consistent with the shared interests. In such cases, problems arise not because interests are *necessarily* divergent, but because *all* recipients seek to represent themselves as loyal agents – agents both interested and capable of implementing the principal's objectives.

Recipient capability. Recipient capability, like interests, is also private. Further, effective implementation of aid projects is costly – and sometimes nearly impossible – to verify. It is difficult to tell whether poor economic performance, for example, is due to 'bad luck' or to poor policy design or implementation. This means that donors may work with recipients over many years and still be unable to ascertain recipients' capabilities with confidence. It is, however, more difficult to conceal information about capability than about interests. If a recipient country is signals difficulty managing any aspects of governance, then donors may deduce that the recipient is generally less capable than others.

A recipient's capability is impacted by at least two factors. First, the regime may suffer from insufficient bureaucratic resources, decreasing its state capacity vis-à-vis other social actors (Migdal 1988). In this case, the recipient country may simply be unable to implement policies, including foreign aid projects. Second, endemic corruption, especially at lower levels of government, may make it impossible for the recipient government to delegate policy implementation without significant diversion of funds. Whereas donor countries in some cases may desire diversion of funds at the highest level of government – for example, in the case in which the private aim of the donor is to divert economic development aid to support the recipient country's military – it is likely that the diversion of funds at lower levels of government is never desired by the donor.

Donor assessment of interest and capability. Recipient countries have incentives to misrepresent both interests and capabilities to donors in order to retain discretion over aid expenditures. As a result, donors likely rely on observable characteristics that are difficult (and costly) to conceal to assess the likelihood that a recipient country is a loyal agent.

Because interests are more easily misrepresented than capability, we argue that, to the extent that donors condition modes of aid allocation on shared interests, the method of determining interest alignment will be imperfect. Anticipation of the receipt of aid may induce expressions of shared interests, such as alignment of UNGA voting. Deeper institutional characteristics, however, are less easily changed and thus less easily misrepresented. We therefore argue that recipient country regime type represents a plausible (though imperfect) “sorting” mechanism between interest alignment and misalignment. Additionally, familiarity – and perceived compatibility – of institutions between donors and recipients may facilitate this sense of shared interest. From this logic, the following hypothesis emerges:

H1: Donors are more likely to allocate less fragmented aid to recipient countries with which it shares regime type.¹²

¹² Although we do not necessarily expect the effect of “regime similarity” to be different between democratic and autocratic donor countries, we include only democratic donors in our sample. AidData 1.9 does include bilateral foreign aid allocation data for four non-democratic countries during this time period: Saudi Arabia, Kuwait, the UAE, and Qatar. We exclude these countries because they do not constitute a representative sample of autocratic donors, thus making it impossible to draw conclusions about aid allocation by autocracies in general. This problem is especially severe because no public data is available for the two most important autocratic donors – the Soviet Union and China.

We also expect donors to delegate aid discretion to recipient countries that are observably capable. An observably capable recipient would have an effective bureaucracy and low levels of corruption. However, the very nature of foreign aid implies that donors are active in countries that are under-developed and often corrupt. While empirical studies of aid allocation find that aid amount is not contingent on good governance or level of corruption (Alesina and Weder 2002), we expect that donors do condition degree of discretion over aid on observable indicators of good governance. We therefore hypothesize that:

H2: Donors are more likely to allocate less fragmented aid to highly capable recipient countries.

Further, although regime type and capability are conceptually distinct, they interact in important ways. For instance, if a donor perceives high shared interests with a country but simultaneously perceives the recipient government to be overrun with petty corruption, then they are not likely to extend the same level of discretion as they would if the recipient government was instead perceived to have both shared interests and high capability. In other words, we expect democratic donors to delegate the most discretion (least fragmentation) to democratic recipients with high capability and the least discretion (most fragmentation) to autocratic recipients with low capability, *though the volume of aid in the two cases may be similar*. For example, Egypt and Israel receive similar levels of bilateral aid from the US during the 1980s,¹³ yet aid fragmentation is 68 points higher for Egypt (autocratic with low capacity) than Israel (democratic with high capacity).

H3: Donors are more likely to allocate *even less* fragmented aid to capable recipient countries with which they share regime type.

Our theory does not clearly predict fragmentation levels when the predictions for H1 and H2 run in opposite directions (either when recipients share a regime type but the recipient has

¹³ For example, between 1983 and 1988, after the Camp David Accords are signed, Egypt and Israel receive similar levels of foreign aid disbursements from the US, representing 14% and 16% of total US bilateral aid disbursements for the period respectively.

low capacity, or when recipients have high capacity but a different regime type from the donor). For democratic donor countries, we expect that aid fragmentation for these indeterminate cases will fall between the high fragmentation allocated to low-capability, autocratic regimes and the low fragmentation allocated to high-capability, democratic regimes, but our theory does not generate a prediction for whether low-capability, democratic regimes or high-capability, autocratic regimes will receive more or less discretion than each other. Especially for these hybrid cases, we expect that the recipient country's bargaining power will affect the extent of aid fragmentation.

Bargaining power

The relative power between donors and recipients is not uniform across cases. We argue that relative bargaining power between donor and recipients is impacted by four factors: (1) geostrategic environment, (2) the presence of multiple principals, (3) donors' economic interests in recipient countries, and (4) colonial histories.

Geostrategic environment. We consider the Cold War (and its end) to be the defining feature of the geostrategic environment during the period under consideration (1973-2008). Scholars note empirically that pre- and post-Cold War aid allocation patterns diverge significantly (Bermeo 2008).

Further, as Dunning (2004) notes, donors had little power to restrict recipient behavior during the Cold War because they could not credibly commit *not* to give aid: withholding aid would effectively have meant ceding the influence of a potential ally to the opposing camp. Accordingly, we expect that key donors, including the US, to be less likely to condition aid fragmentation on shared interests or on recipient state capacity during the Cold War.

H4: Donors are less likely to condition aid fragmentation on recipient regime type or capability during the Cold War.

Multiple principals. We consider the number of multiple principals to be a feature that impacts the relative bargaining power of donors and recipients. In the context of foreign aid, it is notable that one agent (aid recipient) may have multiple principals (aid donors), which may themselves have similar or divergent interests. When the interests of multiple principals diverge, each

principal should try to monopolize the effort of the agent. As a result, the agent's ability to contribute to any one project is diminished, both because the agent is likely to be overburdened by too many demands and because the agent's efforts are harder to observe in the presence of multiple principals (Dixit 2002). Further, in the context of foreign aid bargaining, an agent with multiple principals may perceive less of a cost in alienating one principal, thereby increasing the likelihood of disloyalty. In anticipation of these complications in relative bargaining power between the donor and recipient, principals "may resort to imposing... constraints on the agent's actions" (ibid, 710).

Additionally, the geostrategic environment may impact the degree to which a donor perceives other donors' interests to be aligned with their own. In general, we expect bilateral aid donors to perceive their interests as divergent from other aid donors. Even if donors share a broad goal of economic development, they likely each value the success of their own projects more than the success of the projects of other donors. We therefore hypothesize:

H5: Donors allocate more fragmented aid to recipient countries in which multiple donors are operating.

Donor's economic interests. The higher the donor's economic interests in a recipient country, the more leverage the recipient country is likely to have over methods of donor aid allocation. Specifically, we measure recipient's economic influence as the percentage of a donor country's imports that originate in the recipient country.

H6: Donors are less likely to fragment aid to recipient countries in which they have high economic interests.

Colony. Colonizers typically share a long history of interaction with the formerly colonized country, during which time the countries may develop relationships that facilitate the exchange of information, trade, or other shared interests. Migrant populations and colonial-era adoption of the imperial power's language and legal institutions likely facilitate these processes, giving the former colonizer privileged access to information and trade opportunities, and possibly crowding out other donors.

The advantage of the former imperial power over other donors may translate into heightened bargaining power for the former colonizer against the former colony in the present-day aid bargaining environment.¹⁴ If formerly imperial donors have more local information about recipient countries, then recipient countries lose a key advantage typically accorded to agents: significantly higher local information. Further, because former colonies often have interests with donor countries beyond their foreign aid relationship, they may be less able to credibly commit to defecting to another potential donor’s political interest. One might argue that the colonial power would also suffer from an inability to credibly commit to withholding aid, though we hypothesize that, given the other relative advantages and disadvantages, this is not enough to tip the balance in favor of the recipient. Accordingly, we expect that donors will allocate more fragmented aid to their former colonies.

H7: Donors are more likely to fragment aid to former colonies.

3 Data and measurement

Sample

Our primary data comes from AidData 1.9. The unit of analysis is the donor-recipient year between 1973 and 2008.¹⁵ Annual observations are excluded if (1) the aggregate of all projects¹⁶ from a donor to a recipient in a given year is less than \$10,000 (in constant 2000 USD), or (2) the recipient country population is less than 500,000.¹⁷ Exclusion of the smaller

¹⁴ We control independently for the amount of bilateral trade between donor and recipient countries, so any effect by the “colony” indicator should be independent of economic interests in trade.

¹⁵ The analysis reported here includes years between 1984 and 2007 because the ICRG index for bureaucratic quality used only covers those years. We also conduct analyses (available upon request) using GDP per capita as a loose proxy for recipient state capacity (Fearon and Laitin 2003), which spans the years from 1973 to 2008.

¹⁶ We define a project as a committed (not necessarily disbursed) financing flow from a donor country to a recipient country for a specific purpose. Here we draw on the definition provided by AidData (2010, 13). Note: We do not consider projects sponsored by two or more donors, of which there are very few in the current dataset. Also, note that projects including multiyear disbursements are typically recorded as a single project in the initial year of commitment. Our use of five-year averages mitigates concern that changes related to multiyear disbursement drive our findings. See AidData v1.9 manual for further detail.

¹⁷ Specifically, the dataset includes (1) mixed loans and grants, (2) loans/loan guarantees at market rate, (3) technical assistance, and (4) sector program aid transfers in cash or in-kind. Private aid flows – from NGOs or otherwise – are thus not included, though aid that is disbursed via bilateral aid where an NGO is designated as the implementing agency in the recipient country is counted. It therefore excludes: (1) military equipment and services, (2) military stock of debt, (3) aid flows from non-governmental organizations, (4) private long-term capital, (5) grants by private voluntary agencies, and (6) loans made out of funds held in the recipient country.

projects should alleviate concerns by Togo and Wada (2007) that the Japanese government, and possibly others, report some donor expenses related to aid management in such a way that they appear to be many small projects (without actually fragmenting aid). All reported analysis is conducted using five-year averages to reduce noise in the data and to reduce concerns that multi-year projects are recorded in single years.

In the first set of models, we restrict the sample of donors to the US. We do so for three reasons. First, the US is the largest bilateral donor in terms of aid volume. As such, the majority of aid allocation literature has either used the US as its primary case or has run separate analysis on the US (e.g. Alesina and Dollar 2000; Bermeo 2008; McKinlay and Little 1977). Considering the US separately allows us to speak directly to the findings of the existing literature. Second, findings across donors tend to be heterogeneous within the aid allocation literature. More nuanced discussion of results is thus facilitated by focusing on a particular donor country. Third, there has been no systematic restructuring of the aid bureaucracy within the United States during the period under consideration (USAID 2009).¹⁸ We can therefore reduce concerns that shifts in bureaucratic organization in the donor country is driving changes in allocation patterns. In the second set of models, we provide preliminary results for a sample of 22 democratic donor countries.

In both sets of models, we split the sample into Cold War and post-Cold War samples. Recent studies by Bermeo (2008) and Dunning (2004) also divide their analyses into Cold War and post-Cold War periods and find significant differences in the allocation and effects of aid. Chow tests of our analyses reject the hypothesis that the coefficients across the two periods are equivalent.

Dependent variable

Using AidData's project-level data, we calculate a Project Fragmentation Index (PFI) as follows:

$$PFI = \left(1 - \sum_{i=1}^n \frac{P_i^2}{T} \right) * 100$$

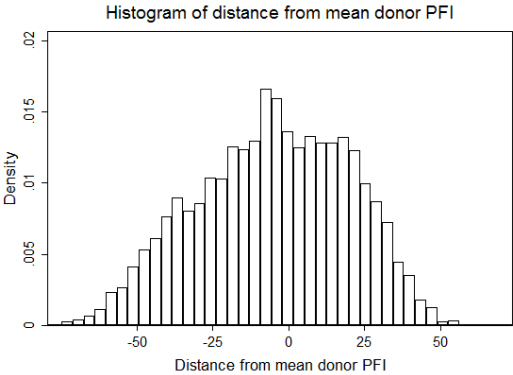
¹⁸ Referring to the Foreign Assistance Act (FAA), significantly amended in 1973, USAID (2009) reports that, “[t]he structure of the FAA remains today pretty much the way it was following [the] 1973 amendments.”

where P_i is the amount given for project i and T is the total bilateral aid given by a particular donor to a particular recipient in a given year. To calculate the dollar amount allocated to a particular project, we use aid commitment rather than aid disbursement. Although actual aid disbursement data is important to assess aid effectiveness, we expect donor fragmentation strategy to be reflected in aid commitments.

The PFI ranges between 0 and 100. A value of zero represents aid given in one lump-sum, presumably as budget support. A value of 100 represents completely fragmented project-specific aid commitment. We interpret the former ideal type to indicate that the donor country gives maximum discretion to the recipient country government to spend aid as they wish. In the latter case, the donor country dictates aid expenditure.

For the purposes of our analysis, we examine the distance from the donor country’s mean project fragmentation for the given year.¹⁹ We do not, in other words, expect that donors begin or end with convergent PFI values, but rather that PFI varies across recipients – from the unique annual, donor baselines – in similarly strategic ways. This should mitigate the concern that our findings are driven by the general increase over time in aid fragmentation. The dependent variable is well distributed (Figure 2).

Figure 2: Histogram of distance from mean donor PFI, 1973-2008



¹⁹ We additionally de-mean the independent variables.

Independent variables

Regime type. To measure regime type we use Polity IV data. Following Polity IV's coding, we create three dummy variables, one for democracy (+10 to +6), anocracy (+5 to -5), and autocracy (-6 to -10). Anocracy is the excluded category in all models.²⁰

Recipient capability. To measure recipient capability, we use the International Country Risk Guide's (ICRG) index of bureaucratic quality. The ICRG index of bureaucratic quality rates countries annually on factors such as bureaucratic "autonom[y] from political pressure," "the strength and expertise to govern without drastic changes in policy or interruptions in government services," and having an "established mechanism for recruitment and training" (PRS Group 2008, 34-5). The measure is subjective but has been used fruitfully by other scholars of aid and development (e.g. Knack and Rahman 2007).

Second, we test ICRG's measure of corruption. The corruption index represents countries' annual scores on measures of the government's amount of "excessive patronage, nepotism, job reservations, 'favor-for-favors', secret party funding, and suspiciously close ties between politics and business" (PRS Group 2008, 31). Finally, we use GDP per capita as a very loose (and admittedly problematic) proxy for recipient capability.²¹ We find that results are consistent across all three of these measures and, therefore, only report on bureaucratic quality, which we consider to be the closest measurement to the notion of state capacity employed here – the ability to successfully implement policy. Unfortunately, the high correlation between the three measures induces significant multi-collinearity when included in the same model.

Donor fragmentation. To measure the concentration of donors operating in a single recipient country, we calculate a donor fragmentation index:

$$DFI = \left(1 - \sum_{i=1}^n \frac{D_i^2}{T} \right) * 100$$

²⁰ It is important to note that the regime coding associated with Polity score cannot be interpreted as a linear increase in regime type from autocracy to democracy. Rather, the mid-range category of anocracy is described by Polity IV as "far less capable of performing fundamental tasks and ensuring [its] own continuity" than either autocracies or democracies (Marshall and Cole 2010, 13). Thus, in some ways our measure of regime type also reflects stability, and thus, in a sense, capacity (.see Cheibub, Gandhi, and Vreeland (2009) on the problems of coding and interpreting anocracies).

²¹ Fearon and Laitin (2003) also use GDP per capita as a measure of state capacity.

where D_i is the total amount of aid given by donor i to the recipient in a given year and T is the total aid received by a recipient country in a given year.

Cold War. We test for differences between the Cold War and post-Cold War period by running separate regressions for the years 1973-1992 and 1993-2008. We then conduct Chow tests to assess the statistical significance of differences across coefficients.²²

Donor economic interests in recipient country. We measure the degree of donor economic interests in the recipient country as the percentage of a donor country's imports that originate in the recipient country and as the percentage of the recipient country's imports that originate in the donor country.²³

Former Colonies. We employ a dichotomous indicator of whether the recipient was ever a colony of the donor. In our test of this hypothesis we restrict the sample to major European imperial powers, including the UK, France, Spain, and Portugal.

Controls. One concern in accounting for difference in project fragmentation across donor-recipient dyads is that particular types of recipient countries are *prima facie* more likely to receive more or less fragmented aid. We attempt to account for this possibility through control variables.

First, we control for population, since it is possible that recipient countries with larger populations may receive more fragmented aid according to a "more people, more projects" logic. Second, we control for amount of aid, since it is plausible that when donor countries increase aid to a recipient, they do so by adding a new project rather than adding new support to old project-lines. For instance, if a donor country wishes to increase its foreign aid to a recipient by an additional \$1 million dollars, it may do so by adding an additional project, rather than by disbursing that \$1 million across the existing number of projects. We operationalize this control by measuring the percentage of a donor country's annual aid portfolio dedicated to the recipient

²² Future drafts will assess different break points for the Cold War. Dunning (2004), for example, uses the cut-off of 1986 for Africa.

²³ Future drafts will consider the effects of natural resources in recipient countries, such as oil.

country. We prefer this to a direct measure of total aid value allocated to the recipient country because it is more comparable across countries.

4 Results for the US

We present results first for the US case, which we consider to be our core results. We then present preliminary results for the sample of 22 democratic donor countries. In the US case, we find strong evidence for the effect of bureaucratic quality (H2) and the joint effect of regime type and bureaucratic quality, though the direction of these effects differ between the Cold War and post-Cold War periods (H4). Bargaining power – considered both in terms of donor fragmentation (H5) and donor economic interests (H6) – impacts project fragmentation in the expected direction across all years.²⁴

Regime type

Regime type is only independently significant after the Cold War and not in the expected direction. Contrary to our expectation in H1, democracies receive *more* fragmented aid after the Cold War. These results are not so surprising, however, when we consider the changing population of regime types at the end of the Cold War. The end of the Cold War correlated with the death of many poor autocratic regimes and the resultant entrance of many poor, relatively unconsolidated democracies into the state system.²⁵ This shift is further reflected in the fact that the average GDP per capita of autocracies increased by 50 percent between the Cold War and post-Cold War periods, while the average GDP per capita of democracies stayed virtually the same, increasing by less than 1 percent. Further, it is possible that relatively more democratic countries are even more unstable at low levels of recipient capacity than countries of other regime types (Mansfield and Snyder 2005; Przeworski and Limongi 1997). With this in mind, it

²⁴ To account for the possibility that project proliferation is in fact only the second part of a two-stage selection process we also run selection models for all models in Table 1. In this model, the first stage consists of the decision to give aid (a binary decision) and the second stage involves the decision concerning the degree of fragmentation. Neither the sign nor the significance changes for any of the coefficients presented here (results available upon request). We privilege the OLS results presented in Table 1 because the correlation between aid allocated commitments and PFI is low (0.15), as is the correlation between the percentage of the donor's aid allocated to the recipient country and PFI (0.11), increasing confidence that project fragmentation should be studied independently and not as part of a selection model. In other words, it is not the case that more aid necessarily equals more fragmentation.

²⁵ During the Cold War, only 22% of observations included in the analysis are democratic recipient countries, whereas after the Cold War that proportion increases to 50%.

is possible that the positive correlation between democracy and aid fragmentation after the Cold War reflects the higher proportion of unconsolidated democracies in this category. This interpretation is strengthened by the negative coefficient on the interaction between democracy and bureaucratic quality. Indeed, in accordance with our original prediction, democracies with high bureaucratic quality do receive less fragmented aid.

The dramatic changes in population of regime types suggest that we should examine the conditional effects of bureaucratic quality, given regime type. It also underscores the importance of considering the fundamental shift in the sample of autocratic and democratic regimes when interpreting results. Further, because the sample of democratic countries in the post-Cold War period includes many more poor, unstable or unconsolidated democratic regimes, it is difficult to compare the effect of being a democracy across the two periods.

Recipient capacity

Both during and after the Cold War, bureaucratic quality has a negative and significant effect (Table 1, columns 1 and 4). This effect gains in magnitude and significance after the Cold War; a Chow test rejects the null that the coefficients between the two periods are equal. Further, the independent effect of bureaucratic quality during the Cold War loses significance when we include regional controls.²⁶ The effect appears to be driven by the Middle East, which, during the Cold War, is receiving aid fragmented below the US mean for the period and is generally rated higher in terms of bureaucratic quality than other regions. However, after the Cold War, the negative association between bureaucratic quality and aid fragmentation is robust to the inclusion of regional fixed effects.

These findings confirm the logic in H4. During the Cold War, donors are plausibly less able to condition methods of aid allocation on bureaucratic quality because recipient countries can become Soviet clients (which they will prefer if the Soviets offer less fragmented aid). Recipient countries during this period therefore have higher bargaining power.²⁷ Differences in the importance of bureaucratic quality between the periods may also be indicative of shifting US

²⁶ On the same model as Table 1, column 1 (not reported).

²⁷ Dunning (2004) finds differences in the effect of foreign aid on democratization in Africa between the Cold War and post-Cold War periods and interprets this difference as evidence of the primacy of “credible commitment” over moral hazard as an explanation of donor behavior. We agree that the moral hazard problem is constant across the two periods and suggest that changes in the donor’s ability to credibly commit to withholding aid affects relative bargaining power.

TABLE 1: Project fragmentation, U.S. only (1984-2007)

Explanatory variable	Distance from mean, Cold War			Distance from mean, post-Cold War		
	(1)	(2)	(3)	(4)	(5)	(6)
Democracy	-2.58 (7.17)	-3.75 (6.79)	-7.76 (7.06)	10.23*** (3.38)	9.89** (3.81)	5.72 (4.18)
Autocracy	-1.86 (5.10)	-3.21 (5.50)	-8.26 (5.47)	-9.92* (5.16)	-5.20 (4.60)	-1.49 (5.22)
Bureaucratic quality	-3.96* (2.31)	5.83 (4.43)	8.76** (3.92)	-8.44*** (1.76)	-5.99** (3.02)	-4.84 (3.11)
Dem. x BQ		-21.73*** (5.71)	-18.24*** (5.27)		-6.16* (3.52)	-6.41* (3.64)
Autoc. x BQ		-6.91 (4.89)	-10.11** (4.50)		14.63** (6.31)	14.20** (5.80)
Donor fragmentation	0.20* (0.12)	0.23** (0.11)	0.19* (0.12)	0.46*** (0.08)	0.47*** (0.07)	0.47*** (0.08)
% of recipient imports from the donor country	0.14 (0.09)	0.12 (0.08)	0.08* (0.04)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)
% of donor imports from the recipient country	-2.53*** (0.58)	-1.34** (0.58)	-1.42*** (0.44)	-1.67 (1.04)	-1.55* (0.91)	-1.85** (0.78)
% of donor's bilateral aid going to recipient country	1.88 (1.37)	1.96* (1.08)	3.76** (1.44)	4.30*** (1.14)	3.92*** (0.95)	4.58*** (1.00)
Log pop.	3.83*** (1.45)	3.73*** (1.40)	4.68*** (1.65)	3.76*** (1.13)	3.93*** (1.06)	3.67*** (1.09)
Regional fixed effects	NO	NO	YES	NO	NO	YES
R^2	0.19	0.27	0.37	0.41	0.45	0.48
adj. R^2	0.15	0.23	0.32	0.40	0.43	0.46
N	183	183	183	314	314	314

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Standard errors are in parentheses. All models were run using standard OLS with standard errors clustered by recipient. Models (3) and (6) include regional fixed effects for Africa, Latin America/Caribbean and the Middle East (excluding Israel) as well as an Israel dummy.

Dependent and explanatory variables are incorporated as 5-year averages. Bureaucratic quality is rescaled so that it ranges from -2 to 2. Thus, the constitutive terms of the interaction terms can be interpreted directly in Models (2), (3), (5), and (6). The coefficient on the constitutive term for bureaucratic quality should be interpreted as the independent effect of bureaucratic quality when the recipient country is an anocracy. The coefficient on the constitutive terms for democracy and autocracy should be interpreted as the independent effect of democracy and autocracy respectively when the recipient country has a bureaucratic quality score of 2. Models (1), (2), and (3) are calculated over the years 1984-1992, and Models (4), (5), and (6) are calculated over the years 1993-2007. Chow tests between Cold War and post-Cold War samples reject the null hypothesis that the coefficients on bureaucratic quality, percentage of donor imports from the recipient country, and on the interaction terms, however we cannot reject the null for the remaining coefficients.

goals in foreign aid allocation: bureaucratic quality is less important for a Cold War military ally than for the successful implementation of development projects.

Effects of bureaucratic quality conditional on regime type. Although bureaucratic quality is not robustly significant during the Cold War, it is significant conditional on regime type. In general accordance with our hypotheses, we find that bureaucratic quality conditional on regime type matters during both periods (H3), and that its impact is significantly influenced by the changing geostrategic environment (H4).²⁸ Specifically, during the Cold War, both autocracies and democracies with strong bureaucracies receive less fragmented aid.²⁹ By contrast, anocracies receive more fragmented aid as their bureaucratic quality increases.

One possible interpretation of these results centers on credible commitment. The US frequently used foreign aid to gain or retain Cold War allies, including autocracies. It is plausible that recipient countries with “consolidated” regime types could more credibly commit to executing donor interests, which, during the Cold War were primarily security driven. The ability to credibly commit was plausibly enhanced if the recipient also had high state capacity. Increased bureaucratic quality in anocracies, however, might not be associated with the same perceived increase in state capacity, since the very category of anocracy reflects an element of instability (Marshall and Cole 2010).³⁰ A relatively unstable ally is necessarily a less credible ally, thus requiring higher donor discretion over aid even given high bureaucratic capacity.

After the Cold War, bureaucratic quality is robustly and independently significant, supporting the logic advanced in H2 and H4. Yet, again, the direction and degree of its significance is not uniform across regime types: Conditional on democracy, bureaucratic quality retains a negative (though attenuated) relationship with fragmentation. The effect of

²⁸ The interaction terms can be interpreted as the average effect of a one-unit change in bureaucratic quality for either autocratic or democratic regimes. The coefficient of the single bureaucratic quality variable reflects the average effect of a one-unit shift in bureaucratic quality for anocratic regimes, the excluded category. Bureaucratic quality is rescaled around 0 so that its constituent terms in columns 2 and 4 can be interpreted at the middle value of bureaucratic quality.

²⁹ Once we add regional fixed effects.

³⁰ This mid-range category often reflects “[a]n inherent quality of instability or ineffectiveness and are especially vulnerable to the onset of new political instability events ... Anocracies are a middling category rather than a distinct form of governance. They are countries whose governments are neither fully democratic nor fully autocratic but, rather, combine an, often, incoherent mix of democratic and autocratic traits and practices” (Marshall and Cole 2010, 13).

bureaucratic quality on anocracies becomes negative and loses significance (Table 1, column 6 including regional fixed effects). Conditional on autocracy, bureaucratic quality acquires a positive and significant coefficient in the post-Cold War period.

Consistent with H3 and H4, these results represent the most significant shift in US allocation behavior between the two periods. They offer strong support for our interpretation of donor strategy with regards to aid fragmentation. Bermeo (2008) argues that US motivation for aid allocation changed after the Cold War from primarily securing allies to primarily promoting economic development. If autocracies make better military allies than development allies, then autocracies could be loyal agents during the Cold War and not afterwards, prompting greater aid fragmentation. Finally, to the extent that the interaction term coefficients are larger for autocracies than democracies, we may infer that the US punishes autocratic recipients more intensely than it rewards democratic recipients for shared regime type.

Bargaining power

Results presented in Table 1 generally accord with our predictions concerning the significance of relative bargaining power on aid fragmentation. Chow tests between the Cold War and post-Cold War periods reveal significant differences (see footnote in Table 1), suggesting support for our hypothesis that the Cold War is a relevant structural break in US aid allocation behavior. Additionally, we find support for H5 and H6 in the fact that donor fragmentation and trade relationships impact aid fragmentation.

Donor fragmentation. We find that the US generally increases aid fragmentation when multiple donors (principals) operate in a recipient state (H5). Again, it should be noted that the United States' most significant competitor donors during and after the Cold War – the Soviet Union and China – are not included in the analysis.

Though all democratic donors ostensibly give bilateral foreign development aid for the purpose of increasing “development” in the recipient country, donors also allocate selectively, and may have different ideas about the best development policy. This is likely to have been particularly true before the 2005 Paris Declaration and other more recent efforts that may foster development policy convergence. Aid fragmentation is also affected by donors' pursuit of influence (prestige) maximization. They also seek to promote their own private economic

interests within a recipient country, in part through the strategic use of aid. Such divergent private interests exacerbate the multiple-principal problem. Hence, competition with multiple principals (high donor fragmentation) yields a significantly positive coefficient over time.³¹

Economic interests. Finally, the US gives less fragmented aid to recipient countries in which it has more economic interests, supporting the hypothesis that higher recipient bargaining power corresponds with less fragmented aid (H6). We interpret this finding as support for the claim that donor economic interests in the recipient country increase the relative bargaining power of the recipient. Additionally, to the extent that trade relations increase US perceptions of more generally shared interests, this finding supports the more general logic that donors give less fragmented aid to recipients with whom they perceive relatively high shared interests. The imports by the donor from the recipient are consistently significant across both time periods and exert a larger effect on donor behavior than imports by the recipient from the donor.

5 Results for all donors

In general, testing our model for each of 22 democratic donor countries reveals heterogeneous results across donors. The most consistent findings are that donor countries tend to increase fragmentation as the number of donors operating in a recipient country increases and as a higher percentage of the donor's overall aid budget is given to the recipient country. Additionally, we find that the effects of recipient state capacity and regime type are significantly different between the Cold War and post-Cold War periods for this sample.³² Democracies with high capacity tend to receive less fragmented aid during the Cold War, and autocracies with high capacity receive more fragmented aid after the Cold War. Separate regressions on each donor country, however, reveal that the relationships between recipient capacity, regime type, and donor fragmentation patterns do not hold across all donors. We conclude that the logic underpinning our theory fits the US better than any of the other donor countries in the broad sample.

³¹ Future versions will consider an alternative explanation for why donor fragmentation increases aid fragmentation: that early aid recipients continue to receive substantial aid over time, while donors expand foreign aid to later recipients through smaller programs (Frot 2009). In this case, aid fragmentation would be driven by the “newness” of the particular donor-recipient relationship. It is possible that donors fragment aid with “new” recipients because they have less information on capability and interests and/or because the recipients’ aid “market” is already saturated with other donors.

³² Chow tests reveal that both the interactions between regime type and bureaucratic quality are statistically different between the Cold War and post-Cold War eras.

Regime Type

During the Cold War, the independent effect of regime type is not significant for any donor (Figure 3). After the Cold War, for those countries that condition aid fragmentation on recipient regime type, the effect of regime type runs opposite to our prediction: Whereas we

TABLE 2: All donors, Cold War

Explanatory variable	No interactions	Interaction terms	Interaction terms and regional fixed effects	Former colonial powers only
	(1)	(2)	(3)	(4)
Democracy	0.63 (1.95)	-0.31 (1.97)	-2.33 (2.70)	5.23 (4.32)
Autocracy	-1.18 (1.61)	-1.04 (1.92)	-2.13 (2.39)	6.61** (2.99)
Bureaucratic quality	-1.71** (0.72)	0.19 (1.29)	1.43 (1.42)	-4.42 (3.88)
Dem. x BQ		-5.52*** (1.92)	-5.67** (2.34)	5.97 (5.90)
Autoc. x BQ		-0.67 (1.70)	-1.67 (1.86)	7.78* (4.28)
Donor fragmentation	0.31*** (0.04)	0.31*** (0.03)	0.38*** (0.05)	0.45*** (0.11)
% of recipient imports from the donor country			0.11* (0.07)	0.04 (0.06)
% of donor imports from the recipient country			-0.05 (0.05)	-2.15 (13.13)
Colony				21.92*** (3.21)
% of donor's bilateral aid going to recipient country	0.92** (0.40)	0.91** (0.40)	0.76** (0.38)	-0.03 (0.20)
Log pop.	2.36*** (0.41)	2.52*** (0.45)	3.35*** (0.77)	3.12** (1.24)
Regional fixed effects	NO	NO	YES	YES
R^2	0.15	0.16	0.20	0.32
adj. R^2	0.15	0.16	0.20	0.29
N	2150	2150	1444	234

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Standard errors are in parentheses. All models were run using standard OLS with standard errors clustered by recipient. Model 3 includes regional fixed effects for Africa, Latin America/Caribbean and the Middle East (excluding Israel).

Dependent and explanatory variables are incorporated as 5-year averages. Bureaucratic quality is rescaled so that it ranges from -2 to 2. Thus, the constitutive terms of the interaction terms can be interpreted directly in Models (2), (3), and (4). The coefficient on the constitutive term for bureaucratic quality should be interpreted as the independent effect of bureaucratic quality when the recipient country is an anocracy. The coefficient on the constitutive term for democracy and autocracy should be interpreted as the independent effect of democracy and autocracy respectively when the recipient country has a bureaucratic quality score of 2. Model (4) includes only France, the UK, Spain, and Portugal. All models are calculated over the years 1984-1992. Chow tests between Cold War and post-Cold War samples reject the null hypothesis that the coefficients the independent effect of democracy (1), the effect of the constitutive terms on democracy and autocracy (2), and on the interaction term between bureaucratic quality and autocracy can be equal.

hypothesize that democracies would generally receive less fragmented aid, we observe that for the donors for which recipient regime type matters, democracies tend to receive more fragmented aid. In this case, the US behaves similarly to several of the Nordic and other European donors including Norway, Sweden, the Netherlands, Belgium, and Portugal (Figure 4).

The finding that democracies tend to receive more fragmented aid after the Cold War runs counter to the expectation in H1. However, it is likely that this finding is related to the

Figure 3: Democracy, Cold War

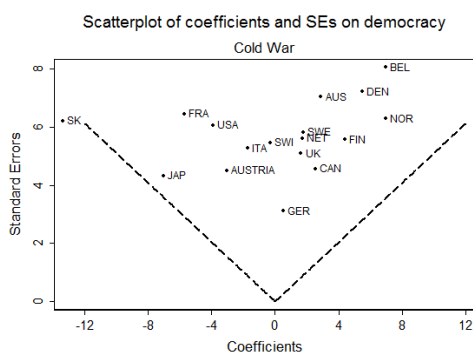


Figure 4: Democracy, post-Cold War

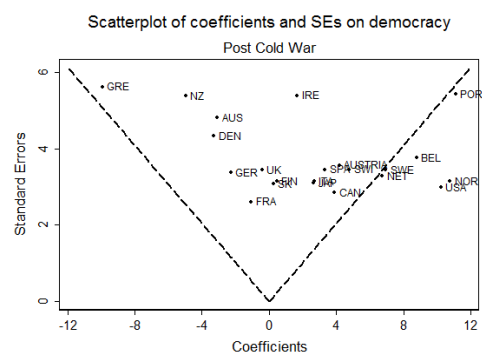


Figure 5: Autocracy, Cold War

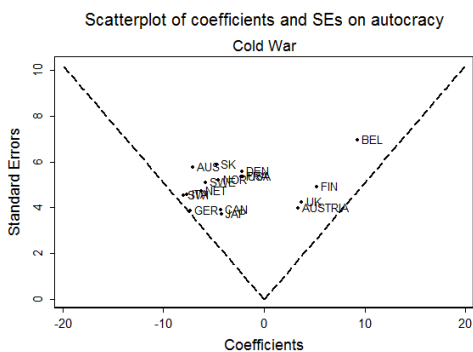
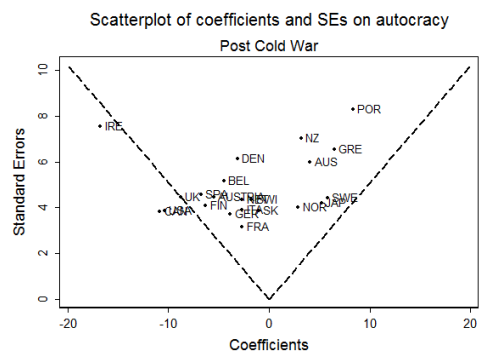


Figure 6: Autocracy, post-Cold War



Notes: The dotted line represents the ratio between coefficient size and standard error required for 95% statistical significance (1/1.96). Therefore, all points beneath the dotted line are statistically significant, and all points above the dotted line are insignificant. To the extent that countries cluster in one region of the graph, we can have greater confidence that pooling is appropriate.

significant change in the population of democracies between the two time periods discussed in Section 4. The independent effect of autocracy is only significant for a few donor countries after

TABLE 3: All donors, post-Cold War

Explanatory variable	No interactions	Interaction terms	Interaction terms and regional fixed effects	Former colonial powers only
	(1)	(2)	(3)	(4)
Democracy	2.88 (1.76)	2.86 (1.96)	1.99 (2.31)	3.89 (2.62)
Autocracy	-2.14 (2.42)	1.08 (2.67)	2.06 (2.86)	1.98 (3.24)
Bureaucratic quality	-0.55 (0.81)	-0.33 (1.25)	-0.92 (1.38)	-0.11 (1.77)
Dem. x BQ		-1.93 (1.58)	-1.29 (1.74)	0.91 (2.47)
Autoc. x BQ		7.41*** (2.15)	7.94*** (2.46)	10.43** (4.47)
Donor fragmentation	0.23*** (0.04)	0.23*** (0.04)	0.27*** (0.05)	0.09 (0.07)
% of recipient imports from the donor country			-0.00*** (0.00)	-0.00*** (0.00)
% of donor imports from the recipient country			-0.06 (0.04)	0.68 (1.73)
Colony				12.16*** (2.76)
% of donor's bilateral aid going to recipient country	1.20*** (0.31)	1.15*** (0.30)	1.25*** (0.41)	0.91*** (0.28)
Log pop.	4.18*** (0.50)	4.16*** (0.47)	3.86*** (0.60)	2.14** (0.84)
Regional fixed effects	NO	NO	YES	YES
R^2	0.13	0.14	0.18	0.15
adj. R^2	0.13	0.14	0.18	0.13
N	5819	5819	3787	736

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Standard errors are in parentheses. All models were run using standard OLS with standard errors clustered by recipient. Model 3 includes regional fixed effects for Africa, Latin America/Caribbean and the Middle East (excluding Israel).

Dependent and explanatory variables are incorporated as 5-year averages. Bureaucratic quality is rescaled so that it ranges from -2 to 2. Thus, the constitutive terms of the interaction terms can be interpreted directly in Models (2), (3), and (4). The coefficient on the constitutive term for bureaucratic quality should be interpreted as the independent effect of bureaucratic quality when the recipient country is an anocracy. The coefficient on the constitutive term for democracy and autocracy should be interpreted as the independent effect of democracy and autocracy respectively when the recipient country has a bureaucratic quality score of 2. Model (4) includes only France, the UK, Spain, and Portugal. All models are calculated over the years 1993-2007. Chow tests between Cold War and post-Cold War samples reject the null hypothesis that the coefficients the independent effect of democracy (1), the effect of the constitutive terms on democracy and autocracy (2), and on the interaction term between bureaucratic quality and autocracy can be equal.

the Cold War (including the US, as discussed above).³³ Given that the population of each regime type shifts dramatically between the two periods, that the interaction between democracy and

³³ The coefficient on the autocracy dummy is also significant during the Cold War in the regression on just the UK, France, Spain, and Portugal (which includes the colony dummy). This effect is not seen in Figure 5 because this regression does not include the colony dummy.

capacity is negative during the Cold War (as expected, H1), and that the interaction between autocracy and capacity is positive after the Cold War (as expected, H3), we conclude that institutional affinities between donors and recipients do matter in the expected ways but that these effects are generally conditional upon the quality of institutions.

Recipient capacity

Bureaucratic quality. During the Cold War, the recipient country's bureaucratic quality has a negative and significant effect on aid fragmentation (Table 2, column 1). Although the coefficient on bureaucratic quality after the Cold War is still negative, it loses significance (Table 3, column 1). However, separate regressions for each donor country reveal a more nuanced pattern: The majority of donor countries appear not to take recipient states' bureaucratic quality into account when determining aid fragmentation during the Cold War. Only five countries – the US, Switzerland, the Netherlands, Japan, and Germany – are significantly influenced by bureaucratic quality during this period (see Figure 8).³⁴

After the Cold War, the United States and Switzerland retain negative and significant coefficients (and Norway joins them), but New Zealand and France join South Korea in exhibiting a *positive* association between bureaucratic quality and aid fragmentation. In almost all cases, the size of the coefficients increases between the Cold War and post-Cold War samples, especially for the US. Bureaucratic quality of the recipient country does matter after the Cold War for many donor countries, but not necessarily in the same direction. In the pooled regression, these countervailing effects result in an insignificant coefficient.

The results from the pooled regression run counter to our expectations for the majority of donor countries in the sample. Unlike the US, most democratic donors do not condition the extent to which they fragment aid on the capacity of the recipient country's bureaucracy. Further, especially after the Cold War, several countries allocate more fragmented aid to countries with higher bureaucratic quality.

³⁴ Only South Korea has a positive and statistically significant coefficient on bureaucratic quality during the Cold War.

Figure 7: Bureaucratic Quality, Cold War

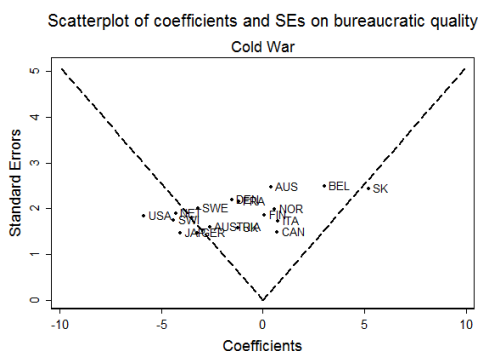
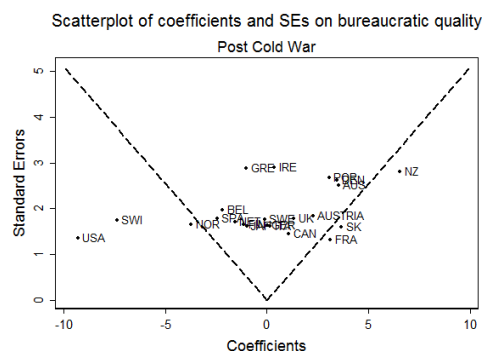


Figure 8: Bureaucratic Quality, post-Cold War



Notes: The dotted line represents the ratio between coefficient size and standard error required for 95% statistical significance (1/1.96). Therefore, all points beneath the dotted line are statistically significant, and all points above the dotted line are insignificant. To the extent that countries cluster in one region of the graph, we can have greater confidence that pooling is appropriate.

Effects of bureaucratic quality conditional on regime type. If the theory presented here fit the pooled model well, we would expect to see donors allocate more discretion to democratic recipients with high state capacity. Within the sample presented here, we therefore hypothesized that we should see a negative coefficient on the interaction between democracy and bureaucratic quality, indicating decreased fragmentation.

Again, we find that effects are not consistent across donor countries. For some donors, the effects of bureaucratic quality conditional on recipient regime type are important in explaining donor behavior during and after the Cold War (H3). During the Cold War, for instance, a democratic recipient state that moved from the minimum level of bureaucratic quality to the maximum level could expect a 21 point decrease in PFI.³⁵ This effect is driven by the US, South Korea, and Japan.³⁶ After the Cold War, these three countries continue to allocate less fragmented aid to democratic countries with high bureaucratic quality. However, another set of donor countries – Finland, the Netherlands, Sweden, and Ireland – takes an entirely different approach. These countries in fact allocated *more* fragmented aid to democracies with higher levels of bureaucratic quality in the post-Cold War period (see Figures 9 and 10).

³⁵ All other variables held at their means. Calculated using the Clarify package in STATA 11.

³⁶ Although South Korea is not considered a democracy during the majority of the Cold War period, South Korea does not enter our regressions until 1991. Therefore, this effect for South Korea is driven only by the years 1991 and 1992.

Figure 9: B.Q. x Democracy, Cold War

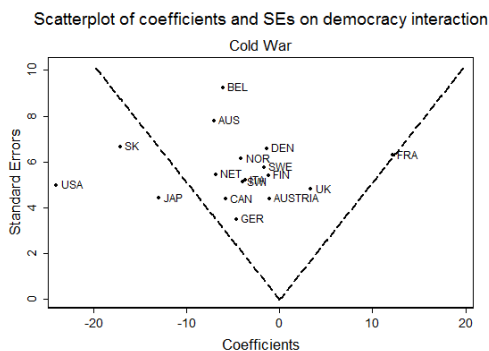


Figure 10: B.Q. x Democracy, post-Cold War

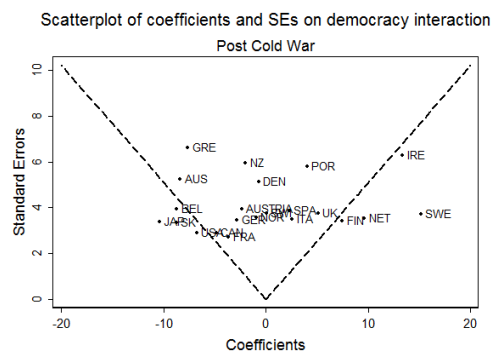


Figure 11: B.Q. x Autocracy, Cold War

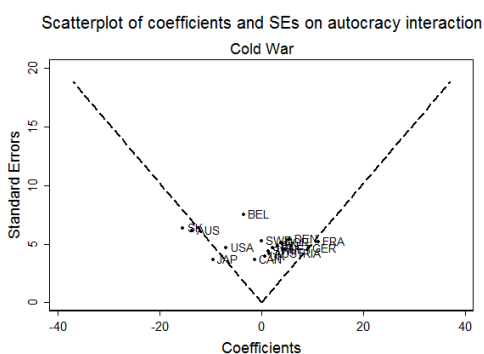
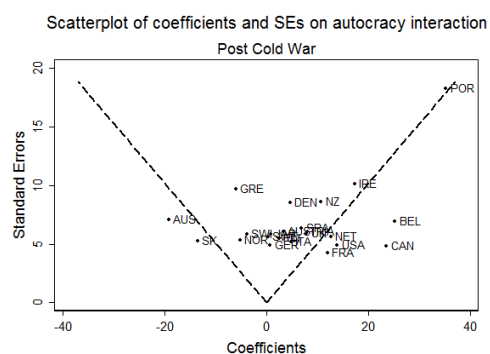


Figure 12: B.Q. x Autocracy, post-Cold War



Notes: The dotted line represents the ratio between coefficient size and standard error required for 95% statistical significance (1/1.96). Therefore, all points beneath the dotted line are statistically significant, and all points above the dotted line are insignificant. To the extent that countries cluster in one region of the graph, we can have greater confidence that pooling is appropriate.

During the Cold War, the effect of recipient state capacity given that the recipient is an autocracy is insignificant in the pooled regression. Figures 11 and 12 again show that these results do not hold universally. Australia, Japan, and South Korea tend to give less fragmented aid to autocracies with high bureaucratic quality, whereas France and Germany do the opposite. After the Cold War, Belgium, Canada, France, the Netherlands, and the US all give more fragmented aid to autocracies with higher levels of bureaucratic quality.

It is possible that after the Cold War, when fewer broadly unifying geostrategic forces are in play, donor countries are more sensitive to differences in regime type. Additionally, it is also plausible that there is variation in the degree to which the self-interested, strategic approach to foreign aid theorized here applies to a given donor at a specific time. Interest groups may work within the donor's domestic sphere to "tie the donor's hands," lobbying, for instance, for laws

that forbid specific forms of aid-giving thought to be inefficient or even damaging. The recent reorganization of the aid bureaucracy in the UK provides the best recent example of such a shift in policy (see Barder 2005). Conversely, in her discussion of the “*Françafrique* network,” Lancaster (2006) shows that in France, the perfect storm of cultural interests, colonial heritage, and domestic political arrangements conspires to prevent significant aid policy reform for over a generation, in spite of several serious attempts.³⁷ In turn, Lancaster relates this to the perpetuation of a shockingly fragmented domestic aid bureaucracy (2006, 150). Kilby (2010) also finds support for a public choice theory of aid allocation, using a measure of bureaucratic fragmentation that supports this interpretation. Though a consideration of the role of domestic politics in aid allocation is beyond the scope of this paper, future work seeks to clarify the role of domestic politics and bureaucratic organization in several donors.³⁸

Bargaining power

Donor fragmentation. When more donor countries operate in a given recipient state, the donor is more likely to increase fragmentation of their aid to that particular country. This is true both during and after the Cold War and for (almost) all donor countries (Figures 13 and 14). This finding is consistent with H5, which explains this phenomenon in terms of the multiple-principals problem.

Figure 13: Donor fragmentation, Cold War

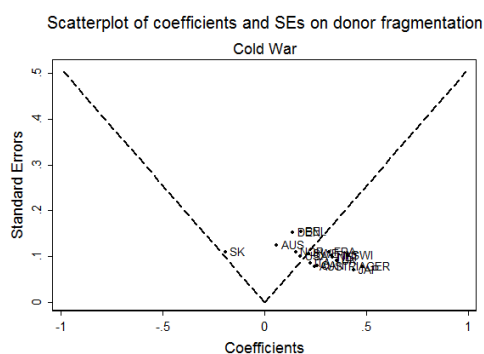
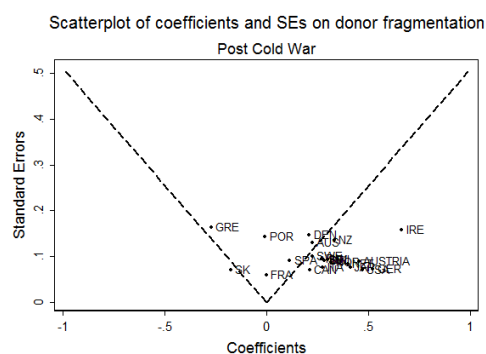


Figure 14: Donor fragmentation, post-Cold War



³⁷ “*Françafrique* network” refers to an allegedly long-standing practice whereby French politicians allocate aid to “prop up” heads of state in Francophone African countries (mostly former colonies), and in turn, receive substantial campaign contributions from these leaders. Omar Bongo, Gnassingbé Eyadéma, Teodoro Obiang, and Félix Houphouët-Boigny are prominent among the alleged participants in this practice.

³⁸ See Tingley (2010) and Milner and Tingley (2010) for recent discussion of the impact of domestic political variables on aid allocation.

Colonial history. Both during and after the Cold War, donors tend to give more fragmented aid to former colonies supporting H7. We interpret this finding in terms of bargaining power: in the typical donor-recipient relationship, the recipient country government has a significant advantage in terms of local information, which provides much of the incentive for delegation. In relationships between former colonizers (foreign aid donors) and former colonies (aid recipients), however, this informational advantage is often mitigated by significant socio-economic ties. These ties facilitate the flow of information between the two societies. They also may reflect direct donor interests in the recipient state. Further, these ties may plausibly be self-reinforcing by crowding out other potential donors and investors. Businesses and NGOs of former colonizers, for example, frequently enjoy disproportionate access to the market in their former colonies, which may have been established during earlier periods when their power in the region dissuaded other actors from investing. At least three colonial legacies – shared language, institutional similarities, and diasporic communities – that may facilitate donor advantages in the post-colonial aid bargaining environment. In sum, significant cultural and economic exchanges imply that the donor country is more likely to have a higher level of local information about former colonies than about other recipient countries, thereby reducing the benefits of delegation.

Further, colonies may have less bargaining power relative to their former metropolises than would another recipient country. The ties between the former colony and the former colonizer extends so much beyond the foreign aid relationship that the formerly imperial donor may depend less on foreign aid as a unique foreign policy tool to align recipient interests with their own. In other words, the sum of all links between the societies may imply that donor countries fear the political defection of former colonies less than that of other aid recipients. This, again, may help explain the robust relationship found here between former colonial status and aid fragmentation.

6 Conclusions

The results of our analysis suggest four broad patterns in foreign aid fragmentation from 1973 to 2008. First, the effects of regime type and bureaucratic quality appear to work in conjunction. As predicted, democratic donor countries, especially the US, tend to allocate less fragmented aid to democratic recipient countries with high bureaucratic capacity. During the Cold War, the US also allocates less fragmented aid to autocratic regimes with relatively high

bureaucratic quality. Cold War alliances and regime stability (compared to anocracies) offer plausible explanations for this initially unexpected finding. After the Cold War, due in part to a global shift in recipient state regime types as well as possible shifts in foreign aid objectives, the US significantly *increases* aid fragmentation to high-capacity, autocratic recipients.

Second, we find that the most consistently significant determinant of aid fragmentation across donors is the number of other donors active in the recipient country. This finding is consistent with the idea that the presence of multiple donors: (1) overburdens recipient governments, (2) lowers the incentives for recipients to follow donor's interests, and (3) induces donors to retain discretion over aid in anticipation of these problems. Third, the Cold War is a relevant structural break in methods of aid allocation for some donors. The US, for example, conditions the granting of aid discretion on high recipient capacity only after the Cold War. Finally, we find heterogenous determinants of aid fragmentation across donors. These differences could be attributed to donors' view on the most effective ways to allocate aid, differences in donor interests not captured by the models presented here, as well as domestic political differences. We are currently attempting to address these questions directly in on-going research.

Following the findings presented here, we suggest four fruitful areas for future research. First, future research might examine factors associated with delegation of foreign aid spending discretion by (1) autocratic countries, and (2) by relatively new democratic donors not included here (e.g. Brazil, Colombia). Second, future research should consider the role played by NGOs and other non- or sub-state actors in aid fragmentation. Limited data concerning implementing agencies is now available through AidData. Here, the questions of tied aid and technical assistance – strategies used by donor countries to increase their benefit from and discretion over aid expenditure – might usefully be incorporated into the theory. Third, we suggest that the relationship between former colonizers and colonies could be explored using both qualitative and quantitative tools to engender a fuller understanding of how colonial ties impact the aid bargaining environment. Finally, future research could re-visit the link between aid fragmentation and aid effectiveness more systematically. It is possible that there is an optimal project size for each recipient country, and that donor strategies should be compared relative to this baseline.

In conclusion, this paper has analyzed one element that plausibly impacts aid quality, focusing on the variation within donor portfolios. We conjecture, however, that aid fragmentation is merely one of many methods that donors use to achieve foreign policy. Other methods likely include amount of aid, type of aid (multilateral v. bilateral), sector allocation, and implementing agencies (e.g. NGOs, local government, or other international agencies). Future research should synthesize investigations of these various bilateral aid strategies – and their effects – more broadly.

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