# Donor influence in Multilateral Development Banks:

# The case of the Asian Development Bank

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Abstract: This paper explores the influence of Japan and the United States over the geographic distribution of Asian Development Bank (ADB) funds. Although nominally an independent, multilateral organization, the ADB is widely regarded as bowing to the interests of its two most influential donors. Estimation using panel data for less developed Asian countries from 1968 to 2002 suggests significant donor influence with inconsistent weight placed on humanitarian criteria given limited funding for the region's largest countries, China and India. Comparing the results with research on World Bank loan allocation suggests donor interests are relatively more important in the ADB. This finding justifies the existence of the ADB on political grounds but calls into question its relative merits on economic grounds.

Keywords: Asian Development Bank, Japan, United States, governance, independence, aid allocation

JEL codes: F35, O19

## I. Introduction

Founded in 1966, the Asian Development Bank was modeled closely on the World Bank, the first multilateral development bank (MDB). One of the fundamental principles of multilateralism is independence from direct donor control. While no agency is likely to be completely free of economic and political constraints, a greater degree of independence allows multilateral agencies to allocate their resources more efficiently (in terms of promoting social and economic development) and lends credibility to their policy advice while also strengthening their information signaling role (Rodrik, 1995).

Yet since the ADB's early days, critics have charged that the two major donors, Japan and the United States, have had extensive influence over lending, policy and staffing decisions (Krasner, 1981; Upton, 2000: 68,70; Wihtol, 1988). Studies of other MDBs generally find either dominance by one donor or relatively diffuse control. The United States appears to play the dominant role in the World Bank (Akins, 1981; Andersen et al., 2005; Fleck and Kilby, 2005; Harrigan et al., 2004) and the Inter-American Development Bank (Strand, 2003A). In contrast, the African Development Bank has limited explicitly the participation of non-regional countries, effectively preventing any member from dominating the institution, either in terms of formal voting power or operations (Strand, 2001; Mingst, 1990).[1] Given the origins of the European Bank for Reconstruction and Development at the end of the Cold War, states that might have dominated the institution (particularly France and the United States) were forced to compromise, accepting an institution embedded in the existing European institutional structure with a relatively even distribution of voting power (Strand, 2003B; Weber, 1994). Thus, among the MDBs, the ADB is unique in having two dominant members.

This paper examines the degree to which the geographic distribution of ADB lending (from

both the highly concessional Asian Development Fund [ADF] and the near market rate Ordinary Capital Resources [OCR]) mirrors Japanese and U.S. interests. Estimation uses panel data for less developed Asian countries from 1968 to 2002. After controlling for factors consistent with the institution's apolitical mandate (i.e., related to need and development effectiveness), I introduce measures of donor interests to test for donor influence. Estimation results suggest significant donor influence with inconsistent weight placed on humanitarian criteria given limited funding for the region's largest countries, China and India. Comparing the results with work on the geographic distribution of World Bank lending by Fleck and Kilby (2005) suggests a greater influence of donor interests relative to recipient need in the allocation of resources at the ADB than at the World Bank.

Rodrik (1995) presents an interesting economic case for the existence of an MDB based on its independence from donors. Taking a world with bilateral aid and well-developed international capital markets as given, what efficiency gain justifies the existence of costly MDBs? Rodrik argues that because a multilateral organization has more independence than bilateral aid agencies, it can provide more credible signals to private capital markets and impose conditionality with less perceived damage to sovereignty. Linking multilateral lending to these activities makes them incentive compatible so that private investors will have faith in the multilateral's signals and exercise of conditionality. Two corollaries follow. First, the argument for independence extends to the allocation of funds since loans are the means by which signaling and conditionality take place. Second, the greater the independence of the multilateral, the greater the efficiency gain over bilateral agencies.

Rodrik's argument does not explain overlapping multilateral institutions. Given the existence of the World Bank, why do regional development banks persist and even multiply; certainly the signaling and conditionality functions are better implemented by one agency than by

several. The findings of this paper suggesting more extensive donor influence in the ADB than in the World Bank further complicate the story. The degree of influence over the distribution of ADB funds that Japan and the U.S. appear to enjoy justifies the ADB's existence on political grounds but calls into question its relative merits on economic grounds.

## II. Aid allocation and multilateral governance

Much of the aid allocation literature has focused on donor interest versus recipient need as determinants of the distribution of aid between recipient countries.[2] In general, researchers have found geopolitical and commercial interests particularly important for the U.S. (Alesina and Dollar, 2000), commercial interests particularly important for Japan (Alesina and Dollar, 2000; Schraeder et al., 1998; Tuman and Ayoub, 2004; Tuman et al., 2001; Tuman and Strand, 2006) and humanitarian concerns particularly important for small donors, namely Canada, the Netherlands, Denmark, Norway and Sweden (Alesina and Dollar, 2000; Stokke, 1989).[3] A number of studies of Japanese bilateral aid consider whether Japanese policy reacts to U.S. pressure (*gaiatsu*) with positive results for Africa (Hickman, 1993; Tuman and Ayoub, 2004), mixed findings for Latin America (Katada, 1997; Tuman et al., 2001) but no evidence in Asia (Tuman and Strand, 2006). Previous work on multilateral aid allocation finds more emphasis on recipient need as compared to bilateral aid as a whole (Burnside and Dollar, 2000; Alesina and Dollar, 2000). However, several studies of World Bank lending uncover patterns of apparent donor influence that reflect trade and commercial financial flows (Akins, 1981; Fleck and Kilby, 2005; Frey and Schneider, 1986; Weck-Hannemann and Schneider, 1991) and UN voting (Andersen et al., 2005).

Japanese and U.S. influence is the focus of much of the literature on ADB governance (Dutt, 1997, 2001; Krasner, 1981; Wan, 1995; Wihtol, 1988; Yasutomo, 1983, 1995). Japan has significant sway because of its generous funding (especially for the ADF) and Bank staffing (Japanese president

and close ties with Japan's Ministry of Finance). U.S. influence derives from its leading economic and military position in world affairs, the ADB charter which gives the U.S. and Japan equal voting weights, and funding mechanisms which allow the most recalcitrant member–typically the U.S.–significant leverage (Wihtol, 1988). Mirroring patterns in bilateral aid, analysis of governance suggests that the ADB promotes both Japanese commercial interests and U.S. economic and geopolitical interests (Dutt, 1997, 2001; Wihtol, 1988).

While most researchers conclude that Japan and the United States have a very important influence on ADB policies and operations, relatively little quantitative work has been done on how ADB aid allocation relates to donor interests. Krasner (1981) examines correlations between ADB lending and measures of Japanese and U.S. interests (net resource flows, ODA, and trade). The correlations for Japan are uniformly high while U.S. correlations are lower and more variable. Krasner attributes this to different objectives, i.e., the long-term geopolitical interests of a hegemon versus the narrower commercial interests of a "normal power."

Wihtol (1988) also compares bilateral aid and ADB loans, noting that ADB loans align closely with Japanese bilateral aid, a pattern still apparent in the data. The top four recipients of ADB funding (Indonesia, Pakistan, China and Korea) received 52% of ADB loans in real terms between 1968 and 2002; the same group received 48% of regional Japanese aid and 36% of regional U.S. aid. Countries at odds with the U.S. often received little or no ADB money (e.g., Afghanistan between the Soviet invasion and the fall of the Taliban, Vietnam immediately after the American withdrawal, Cambodia until the early 1990s, and Laos until the late 1980s). Taiwan received no new loans after losing its UN seat to China in 1971, but not until 1986 did the ADB grant China membership, "partly due to strong [U.S.] congressional opposition to such a move" (Wihtol, 1988: 102). Restricted Indian access to the ADB reflected Japan's concern that, because of its size and

poverty, India might consume too large a share of the institution's resources and, in a sense, dominate the institution. Wihtol concludes that "the allocation of lending by country...[is] largely a reflection of the political and economic concerns of the [Asian Development] Bank's donors" (Wihtol, 1988: 173).

## III. Estimation Methods and Data

The basic approach in this paper is similar to Fleck and Kilby (2005). Since some less developed Asian countries receive no ADB disbursements in some years, I estimate a two part model with a selection equation and an allocation equation. The equations include variables consistent with the ADB's charter, i.e., measures of recipient need and ability to use aid well (aid effectiveness), plus donor-specific variables that reflect the donor's commercial and geopolitical interests in the recipient country.

The two part model includes a selection equation (estimated via probit) where the dependent variable indicates whether or not a country received ADB funds in a given year. A separate allocation equation is estimated for the sample that does receive ADB funding; the dependent variable is the share of ADB funds received. The chief limitations of a two part model are: (1) interpretation of the allocation equation coefficients as conditional on selection; and (2) the assumption that the unobserved factors influencing selection and the unobserved factors influencing allocation are uncorrelated (independence of equations). If independence holds, it is possible to construct unconditional estimates. A Heckman selection model (Type 2 tobit that does not require independence of equations) fails to reject independence of the equations for most samples and specifications while also imposing practical limits on model specification. This approach is more general than a tobit model as the selection and allocation equations can differ (e.g., population or GDP can play different roles in a country's "graduation" from the ADB than in the allocation of

funds to countries that have not yet graduated). Neumayer (2003) applies a two part model to aid allocation; for a textbook treatment, see Cameron and Trivedi (2005, 544-546, 680-681).

A number of difficult specification issues arise in almost every aid allocation estimation. There is as yet no consensus on what form of dependent variable to use; indeed, different forms are useful for answering different questions. Depending on their focus, previous studies have used the level of aid in year t to recipient i ($A_{it}$), aid per capita ($A_{it}/N_{it}$), aid as a share of GDP ($A_{it}/Y_{it}$), or aid to recipient i as a share of the donor's aid to all countries ($A_{it}/\Sigma_j A_{jt}$). The level of aid is straightforward; policy debates are typically cast in these terms. Aid per capita captures how much aid "should" go to the recipient and has been used extensively in donor interest-recipient need models (i.e., testing neo-realist versus idealist interpretations of aid). Aid as a share of GDP is a key measure for questions of growth (Burnside and Dollar, 2000), aid dependency (O'Connell and Soludo, 2001), and the degree of donor leverage but is not closely tied to certain standard rationale for aid allocation.[4]

This paper employs aid as a share of the donor's overall regional aid to capture directly the relative importance of one recipient versus another. That is, do countries favored by Japan or the U.S. have better access to ADB funding? Aid shares emerge as a natural measure of aid flows in some theoretical models of aid allocation (Fleck and Kilby, 2005; Trumbull and Wall, 1994). Certain independent variables are easily expressed in shares (e.g., population share$_{it}$ = $N_{it}/\Sigma_j N_{jt}$, export share$_{it}$ = $EX_{it}/\Sigma_j EX_{jt}$) while others are not (e.g., GDP per capita, degree of democracy).

In a simple two part model, the ADB first decides whether a country is eligible for loan disbursements. The selection equation summarizes this decision with a latent "eligibility" variable $s^*$. Country i receives funds in year t if $s^*_{it} > 0$ where $s^*_{it}$ is given by:

$$s^*_{it} = \mathbf{Q}_{it}\boldsymbol{\alpha_0} + \mathbf{Z}^{\mathbf{J}}_{it}\boldsymbol{\alpha_1} + \mathbf{Z}^{\mathbf{US}}_{it}\boldsymbol{\alpha_2} + \nu_{it} \quad (1)$$

The ADB then decides how to allocate shares of a fixed budget between eligible countries:

$$s^{ADB}_{it} = \mathbf{Q}_{it}\boldsymbol{\beta}_0 + \mathbf{Z}^{J}_{it}\boldsymbol{\beta}_1 + \mathbf{Z}^{US}_{it}\boldsymbol{\beta}_2 + \epsilon_{it} \quad \text{for } s^{ADB}_{it} > 0 \tag{2}$$

**Q** captures recipient need and aid effectiveness while $\mathbf{Z}^{J}$ and $\mathbf{Z}^{US}$ reflect Japanese and U.S. commercial and geopolitical interests. The coefficients may differ across equations so that variables can play different roles in the selection and allocation decisions. A key assumption of a two part model is that unobserved factors influencing selection and allocation are uncorrelated, i.e., $E(\nu_{it}\epsilon_{it}) = 0$. The hypothesis of no donor influence is $\boldsymbol{\alpha}_1 = \mathbf{0}$, $\boldsymbol{\alpha}_2 = \mathbf{0}$, $\boldsymbol{\beta}_1 = \mathbf{0}$ and $\boldsymbol{\beta}_2 = \mathbf{0}$.

The set of variables included in **Q** could be sizable. Just considering recipient need, the Millennium Development Goals set out 6 social goals with 16 indicators (United Nations, 2005). Add to this measures of aid effectiveness. These data requirements present a serious problem because, beyond the most basic measures (population, GDP, degree of democracy), year and country coverage is spotty. In an analysis of the allocation of aid between countries, one stands to lose a lot from reduced country coverage. In addition, the sample of countries reporting data is unlikely to be random; countries with closer ties to Japan and the U.S. are more likely to collect and report data.[5] Even setting aside issues of sample coverage, using a large number of variables may not capture perceived recipient need or aid effectiveness well if inaccuracies in reported data are known to aid agencies or if the relationship between the data and the abstract concepts of interest is complex. On this latter point, consider a PPP measure of GDP per capita, seemingly the nature proxy for recipient need. Even this measure has shortcomings: it ignores important distributional issues, correlates with aid effectiveness, and may proxy for donor self-interest (e.g., market potential). Such multiple correlations have plagued interpretation of results in the literature.

The ideal **Q** would be a rating by a well-informed, humanitarian expert or organization that knows the shortcomings of official data and weighs trade-offs between need and effectiveness. This

assessment should be that of the aid community since the goal is not to look for "mistakes" the ADB might make in pursuing humanitarian goals but rather is to uncover elements of the aid allocation process that are not based on humanitarian considerations.

A version of such a humanitarian rating is available. As discussed above, a group of small donors–Canada, Denmark, the Netherlands, Norway and Sweden–arguably pursue humanitarian goals in the allocation of their aid. Thus, one can view small donor aid share as the humanitarian rating. Since individual small donors may limit the scope of their programs, the small donor aggregate is appropriate. One benefit of using small donor bilateral aid data is that they come from the OECD and are not subject to the limited coverage or uncertain provenance of other LDC data. The key advantage of using small donor aid to proxy for need is that, because small donors are small, they do not have the power to influence ADB lending significantly. Strand (1999) finds that the ADB's voting system reduces the voting power of small donors. For example, the 1990 Johnston voting power indices were: Japan .174, the U.S. .174, Canada .081, Denmark 0, the Netherlands 0, Norway 0, and Sweden 0. Because small donors are relatively powerless in the ADB, they need not be totally or even mostly humanitarian. Small donor aid is an effective proxy if it has a humanitarian component and small donors do not cater to Japan, the U.S., or the ADB bureaucracy.

Donor interest variables (**Z**) present a similar set of problems. For some potentially important variables (e.g., FDI), coverage is poor and definitions are inconsistent across countries and over time. Again, the relationship between variables and donor interests may be complex and variable. A military base may be important to the donor at one point in time but simply an expense at another juncture. Commercial interest often hinge on future expectations rather than current markets. Finally, donor interest measures should be symmetric for Japan and the U.S. As above, the ideal would be donor ratings of a country's commercial and political importance.

Again, a version of such donor interest ratings is available in the form of bilateral aid shares. The literature on aid allocation finds that Japanese bilateral aid closely reflects Japanese commercial interests and that U.S. bilateral aid mirrors U.S. commercial and geopolitical interests. Japanese and U.S. bilateral aid shares are clearly not perfect measures, however. First, these aid programs may have some humanitarian component (hence the importance of including humanitarian control variables). Second, donor interests served by bilateral aid may not be the same as those served by multilateral aid; a donor may view bilateral and multilateral aid as substitutes. The most obvious case is when, for political reasons, a donor cannot directly support a recipient but still wishes to provide aid. This may result in a downward bias understating donor influence or, in the extreme, lead to a negative link between donor bilateral aid share and ADB aid share.

Another important issue is the possibility that aid coordination may lead to an endogeneity problem. Multilateral agencies frequently convene donor meetings to coordinate aid policies toward particular recipients. Does one interpret high Japanese or U.S. aid shares as causing high ADB aid shares or the reverse? In fact, with the small donor aid variable included in the estimation, this should not be a problem if the small donors are humanitarian. If the small donors participate in coordinated efforts, one can interpret coordination as driven by humanitarian concerns. If they do not participate, one can interpret coordination as driven by other interests.

However, two more difficult issues do arise. First, Japanese and U.S. interests may coincide (e.g., a country with oil reserves and market potential–Indonesia–may be of interest to both) or Japan may simply follow the U.S. lead as a form of burden sharing or *gaiatsu* (Hickman, 1993; Katada, 1997; Tuman et al., 2001; Tuman and Ayoub, 2004; Tuman and Strand, 2006). Bilateral aid data cannot distinguish between coinciding interests and *gaiatsu*, complicating attribution. Fortunately, in Asia, this problem is substantially reduced since there is little evidence of Japanese bilateral aid

following U.S. interests in this region (Tuman and Strand, 2006). The second issue is whether donor aid allocations are negatively coordinated: the small donors may choose to specialize in countries because they receive less aid from large donors such as Japan, the U.S. and the ADB. The limited empirical research on this topic provides no clear overall pattern.[6]

The discussion above is summarized in the following modified selection and allocation equations:

$$s^{*}_{it} = \mathbf{Q}_{it}\boldsymbol{\alpha_0} + s^{SD}_{it}\alpha_1 + \mathbf{Z^J}_{it}\boldsymbol{\alpha_2} + s^{J}_{it}\alpha_3 + \mathbf{Z^{US}}_{it}\boldsymbol{\alpha_4} + s^{US}_{it}\alpha_5 + \nu_{it} \quad (3)$$

$$s^{ADB}_{it} = \mathbf{Q}_{it}\boldsymbol{\beta_0} + s^{SD}_{it}\beta_1 + \mathbf{Z^J}_{it}\boldsymbol{\beta_2} + s^{J}_{it}\beta_3 + \mathbf{Z^{US}}_{it}\boldsymbol{\beta_4} + s^{US}_{it}\beta_5 + \epsilon_{it} \qquad \text{for } s^{ADB}_{it} > 0 \quad (4)$$

As before, a country receives funds ($s^{ADB}_{it} > 0$) only if $s^{*}_{it} > 0$. $\mathbf{Q}$ now represents a limited set of widely available measures of recipient need/aid effectiveness. $s^{SD}$ is small donor aid share and proxies for unmeasured dimensions of recipient need/aid effectiveness. $\mathbf{Z^J}$ are a limited set of Japanese interest variables; $s^J$ is Japanese bilateral aid share and proxies for unobserved Japanese interests. $\mathbf{Z^{US}}$ are a limited set of U.S. interest variables; $s^{US}$ is U.S. bilateral aid share and proxies for unobserved U.S. interests. The hypothesis that Japanese interests do not influence ADB lending is $\boldsymbol{\alpha_2}=\mathbf{0}$, $\alpha_3=0$, $\boldsymbol{\beta_2}=\mathbf{0}$ and $\beta_3=0$. The hypothesis that U.S. interests do not influence ADB lending is $\boldsymbol{\alpha_4}=\mathbf{0}$, $\alpha_5=0$, $\boldsymbol{\beta_4}=\mathbf{0}$ and $\beta_5=0$.

One important issue in estimating the selection and allocation equations is the panel nature of the data. The probit estimation for the selection equation reports statistics based on panel corrected standard errors.[7] The estimation method for the allocation equation is a panel version of feasible generalized least squares that allows for a common AR1 process across panels.[8] All specifications include year dummies though results are similar excluding these terms.

All data are annual. The aid share variables ($s^{ADB}$, $s^{SD}$, $s^J$ and $s^{US}$) are calculated from gross disbursements of official assistance (OECD Development Assistance Committee, 2004). I use

disbursements in part because the OECD only reports commitments for Official Development Assistance (ODA); loans from the ADB's hard window (OCR) are not sufficiently concessional to qualify as ODA. Using gross figures avoids problems with negative shares and better captures what donors can control.[9] $s^{ADB}$ includes disbursements from both OCR and the more concessional ADF. $s^{SD}$ is the combined share of Canadian, Danish, Dutch, Norwegian, and Swedish bilateral aid gross disbursements.[10]

The **Q** variables come from several data sources. Population and GDP figures are constructed from the Penn World Tables (Heston et al., 2002) and the World Development Indicators (World Bank, 2004); the index of democracy is from the Polity IV Project (2000). These variables are lagged by one year to better reflect the information set when the ADB makes allocation decisions. GDP is per capita in PPP terms using 1996 dollars. The democracy index places countries on a scale of -10 (autocracy) to 10 (democracy).

$\mathbf{Z}^{J}$ and $\mathbf{Z}^{US}$ include commercial and geopolitical variables. Four trade variables (Japanese exports to the country, Japanese imports from the country, U.S. exports to the country, and U.S. imports from the country) are extracted from the International Monetary Fund's Direction of Trade Statistics (2004), lagged by two years to reduce the potential for reverse causation, and converted to shares. Specifications also include world exports to and imports from the country (where "the world" covers all countries–including Japan and the U.S.) so that the separate Japanese and U.S. variables capture the differential effect of trade with Japan and the U.S. The geopolitical variables measure alignment with Japanese and U.S. votes in the UN General Assembly (UNGA) and are lagged by one year. Using data from Voeten (2004), I constructed a simple measure (UN alignment) following Thacker (1999) and Dreher and Jensen (2007) which ranges from 0 (always voting the opposite) to 1 (always voting the same).[11]

Table 1 presents descriptive statistics. The selection equation sample is an unbalance panel of 574 observations on 27 countries.[12] The time period for the unlagged variables is 1968 to 2002 though the data do not cover the full period for all countries. The shortest time series is one year, the average is 21, and half the countries are covered for 30 years or more. Eighty-one percent of the observations have positive ADB lending with 17 countries receiving no ADB funds for at least one year. Japanese aid share ($s^J$) reaches its maximum at almost 34% (Indonesia, 1992); China, Fiji, and Taiwan received no Japanese aid for at least one year. U.S. aid share ($s^{US}$) peaks at about 40% (India, 1968); 12 countries got no U.S. aid for at least one year. Small donor aid share ($s^{SD}$) reaches over 50% (India, 1971) with China, Mongolia, and Taiwan receiving no small donor aid for at least one year.

[Table 1 about here]

Population share runs from 0.02% (Bahrain, 1996) to 48% (China, 1967). PPP GDP per capita averages $3,676, ranging from $397 (Myanmar, 1968) to $24,939 (Singapore, 1996). The share of world exports going to the country runs from 0% (Bangladesh, 1971; Bhutan, 1995) to 33% (China, 1998); imports from 0% (Bangladesh, 1971; Bhutan, 1995) to 41% (China, 2000). The share of Japan's exports going to the country runs from 0% (Bangladesh, 1971; Bhutan, 1995; Kyrgyz Republic, 1993) to 31% (China, 1985); imports from 0% for Azerbaijan, Bangladesh, Bhutan, Fiji, and the Kyrgyz Republic (various years) to 44% (China, 1998). The share of U.S. exports going to the country ranges from zero in various years for Bangladesh, China, Fiji, Laos, and Mongolia to 43% for India in 1966; imports from none (Bangladesh, China, and Fiji) to 45% (China, 2000).

The democracy index averages 0.277, ranging from a low of -9 (31 observations on seven countries) to the highest possible value of 10 (Malaysia, 1967-68 and Papua New Guinea).

The UN alignment variable can be constructed for 516 of the observations in the full sample.

UN alignment with Japan averages 0.736, ranging from 0.472 (Pakistan, 1967) to 1 (Cambodia, 1997). UN alignment with the U.S. is much lower (perhaps because of regional interests or idiosyncratic U.S. positions); it averages 0.401, ranging from 0.216 (Indonesia, 1991) to 0.923 (Taiwan, 1971).

The lower portion of Table 1 presents descriptive statistics for the allocation equation sample ($s^{ADB}>0$) which includes 466 observations on 22 countries.[13] The exclusion of China (before 1986) and India (before 1987) from ADB borrowing drives many of the differences between the two samples. ADB loans share ($s^{ADB}$) reaches a maximum of over 50% (Korea, 1969). Japanese aid and U.S. aid are slightly higher in the restricted sample while small donor aid is slightly lower. The exclusion of China and India from the early part of the sample largely accounts for lower average population while Singapore's effective graduation (and Korea's temporary graduation) from the ADB accounts for lower average GDP. Korea (during the 1998 Asian financial crisis) sets the maximum GDP per capita for a country receiving ADB funds. Again, the absence of China and India from the earlier part of the sample lowers trade averages. Korea (1996) is now the top destination of U.S. exports. Perhaps the most notable change is the rise in mean democracy score in the restricted sample.[14] The sample is reduced to 435 observations for UN alignment.

## IV. Estimation Results

This section presents estimation results for the selection and allocation equations. I estimate the selection equation for the full sample and for the slightly smaller sample with UN voting data. I repeat this for the allocation equation for the sample with positive ADB shares and also compare results for 1968 to 1986 with those for 1987-2002. The more limited variation in dichotomous ADB eligibility variable limits the usefulness of analyzing sub-periods for the selection equation.

Table 2 reports results for the probit estimation of the selection equation. Column (2.1) gives

results for the full sample (574 observations from 1968 to 2002 on 27 countries) excluding UN variables, column (2.2) gives results for the UN sample (516 observations from 1968 to 1997 on 27 countries) excluding UN variables, and column (2.3) includes UN variables. All specifications include year dummies; z-statistics are based on panel corrected standard errors with clustering on countries.

[Table 2 about here]

The negative and significant population coefficient indicates that the probability of receiving ADB funds is significantly lower for more populous countries, a pattern apparently at odds with a humanitarian rationale for aid. Evaluated at the mean values for all other variables, the predicted probability of receiving ADB funds in equation (2.1) falls by 35 percentage points when population share increases from the mean to one standard deviation above the mean (from 6.1% to 18.3%).[15] This reflects the exclusion of China and India from ADB borrowing prior to 1986/87; the estimated population coefficient is negative but statistically insignificant in a sample that drops China and India prior to 1987.

In contrast, the negative and significant estimated coefficient for GDP per capita is consistent with a humanitarian rationale for lending. Ceteris paribus, increasing GDP per capita to one standard deviation above the sample mean (from $3,680 to $7,410) reduces the predicted probability of receiving ADB funds by 16 percentage points. Because this predicted probability differential is smaller than that for population, one can only say that ADB eligibility reflects humanitarian factors when setting aside China and India before 1987. However, doing so reduces the magnitude and significance of the coefficient on GDP per capita. The predicted probability differential from the above difference in GDP per capita falls to five percentage points.

The democracy index consistently enters with a positive and significant coefficient. With

other variables set at the sample mean, the predicted probability of receiving ADB funds increases by 18 percentage points when moving from the lowest democracy rating in the sample (-9) to the highest (10). Thus, a country's chances of receiving ADB funds increase with its level of democratization.[16]

Small donor aid share ($s^{SD}$) enters with a negative though fairly small and statistically insignificant coefficient across the selection equation estimates (though approaching significance in the UN alignment sample). Thus, ceteris paribus, countries that receive more small donor aid (for humanitarian or other reasons) are not more likely to get ADB funding.

Turning to trade variables, World exports enter with a positive and significant estimated coefficient. The predicted probability of receiving ADB funds increases by 48 percentage points when moving from zero to the mean level of World export share (6.1%).[17] The differential impact of Japan importing goods from the country is also positive and statistically significant though smaller; the equivalent probability differential is 14 percentage points. This positive result is consistent with the political economy of Japanese trade policy. A significant amount of Japanese imports from less developed Asian countries are essential raw materials or intermediate goods in the supply chain orchestrated by Japanese firms. Japanese exports also enter with a positive coefficient though it is substantially smaller and statistically insignificant.[18]

In contrast, the sizeable negative and significant estimated coefficient for U.S. exports does not fit well with the political economy of U.S. trade policy; countries that buy a larger share of U.S. exports are less likely to receive ADB funds, ceteris paribus. This link is robust in a number of respects. It persists across the three specifications in Table 2 and across different time periods. It is not driven by a few countries (such as Korea and Singapore–which trade a lot with U.S. but have effectively graduated from the ADB–or China and India). Finally, it does not appear to be driven

by outliers as a quadratic term proves insignificant. Ceteris paribus, a one standard deviation increase in U.S. exports (from the mean of 6.1% to 13.7%) decreases the predicted probability of receiving ADB funds by 40 percentage points. One could imagine that the U.S. looks at export growth potential (as proxied by a small share of current U.S. exports). However, the same story does not carry-over to the level of ADB funding.[19]

The share of U.S. imports coming from the country also enters negatively–in this case consistent with the political economy of U.S. trade policy which vilifies countries selling to the U.S. as dumping goods and stealing jobs–but the coefficient is small and statistically insignificant throughout.

Both Japanese and U.S. bilateral aid shares ($s^{J}_{t}$ and $s^{US}_{t}$) enter positively and significantly. Going from no Japanese aid to the average share increases the predicted probability of receiving ADB funds by seven percentage points while the same comparison for U.S. aid predicts a six percentage point increase. Recalling the earlier result, the probability of receiving ADB funds increases with Japanese or American bilateral aid but does not increase with aid from the small donors.

Column 2.2 reports results for the UN sample without UN variables. The sample shrinks from 574 to 516 observations as Bangladesh, China, Republic of Korea and Taiwan have no UN data for certain years. Comparing column (2.2) with those on the left and right, it is evident that the (few) changes are due to the reduced sample (2.1 to 2.2) rather than the inclusion of the UN variables (2.2 to 2.3).

The first notable difference is the estimated trade coefficients. All decrease in absolute value except the Japanese and U.S. export coefficients. The change is particularly striking for the import variables, with the World import coefficient shrinking by a factor of 17 (though insignificant

in both specifications) and U.S. and Japanese import coefficients falling by two thirds or more. With the drop in magnitude, the Japanese import coefficient is no longer statistically significant. Conversely, the estimated coefficient on Japanese exports doubles in magnitude and approaches statistical significance.[20] It comes as no surprise that trade coefficients change substantially since the data points omitted are for very large traders (China, Korea, Taiwan) and very small traders (Bangladesh).

The second change is a slight reversal between the Japanese and U.S. aid share coefficients with the latter gaining in size and statistical significance and the former falling in size and statistical significance. Repeating the previous simulations, going from no Japanese aid to a 6.1% share increases the predicted probability of receiving ADB funds by three percentage points while the same change for U.S. aid share results in a six percentage point increase.

Turning to UN voting alignment, the Japanese UN voting coefficient is positive but statistically insignificant. The U.S. UN voting coefficient is about the same magnitude but negative and again statistically insignificant. The sign of the Japanese coefficient is consistent with Japan's much publicized bid for a seat on the security council (Drifte, 2000); Japanese influence over access to ADB funds could be used to reward countries that vote with Japan in the UN. A more strategic approach (akin to a swing voter model) might target countries that are neither clear allies nor clear enemies; however, the data show no evidence of such a strategy.[21] Thus, as measured by UN alignment with Japan or the U.S., there is no evidence that UN voting has a significant influence on ADB eligibility in the full sample.

What is the overall importance of recipient need versus donor interest in determining access to ADB funding? While GDP per capita and democracy go in the "right" direction, population and small donor aid (though not significant) do not. In a one to one comparison, the effect of GDP per

capita is larger than that of either Japanese or U.S. bilateral aid but smaller than the trade effects (Japanese imports or U.S. exports). Democracy is on par with bilateral aid effects but also smaller than trade effects. Simulations based on (2.1) confirm the dominance of donor interests. Increasing "recipient need" by one standard deviation (population up from 6.1% to 18.3%, GDP per capita down from $3,676 to 0, and democracy up from 0.28 to 6.90) should raise the predicted probability of receiving ADB funds. Decreasing the unambiguous donor interest variables by one standard deviation (Japanese imports from 6.1% to 0, Japanese aid share from 6.1% to 0, and U.S. aid share from 6.1% to 0) should decrease the predicted probability. The combined effect of these changes is a 56 percentage point decrease in the predicted probability of receiving ADB funds. Repeating the exercise but excluding the effects of China and India pre-1987, the predicted probability falls by over 70 percentage points.[22] Thus, by this measure, the donor interest variables appear to dominate eligibility for ADB funds.

[Table 3 about here]

The allocation equation in Table 3 is conditional on selection, i.e., the sample only includes observations with positive values of $s^{ADB}$. As stated above, Table 3 is estimated via feasible GLS that allows for heteroskedasticity across panels and a common AR1 error term. The table's structure mirrors Table 2. Column (3.1) reports results for the full sample (466 observations from 1968 to 2002 on 22 countries), column (3.2) reports results for the UN sample (435 observations from 1968 to 2002 on 22 countries) excluding UN variables, and column (3.3) includes UN variables. As before, (3.2) demonstrates that differences arising from including UN variables are due to the reduced sample size rather than the introduction of the variables per se.

Table 3 includes a quadratic term for population.[23] The estimates indicate that the share of ADB funds a country receives increases with its population up to a population share of 19%, i.e.,

for all countries except China and India. The decreasing marginal return from the negative quadratic term implies that, ceteris paribus, India would receive 6.4% of ADB funds based on its population share of 32%, comparable to what Pakistan or Indonesia would receive based on their population shares. China, with a population share of 42%, receives a 13 percentage point smaller ADB loan share than would an otherwise identical country with average population. Excluding China and India from the estimation sample, the quadratic term is insignificant and, dropping it, the estimated population coefficient is 1.6: a one percentage point higher population share is associated with a 1.6 percentage point higher ADB loan share, ceteris paribus. Thus, there are both parallels and contrasts with the selection equation. In both cases, there is "discrimination" against China and India due to their size (and potential to absorb the bulk of the ADB's funds). However, setting aside China and India, population is an important determinant for allocation but not for selection.

GDP per capita enters negatively in all allocation specifications. The estimated equation predicts that a $1000 higher PPP GDP per capita is associated with a 0.23 percentage point lower in ADB loan share. Measured in terms of standard deviations from the mean, this is about one tenth the size of the population effect. The estimated coefficients for Democracy and Small Donor aid share are insignificant and small in all specifications.[24] One control variable, World import share, does approach significance (p=0.07), entering with a positive coefficient.

The insignificant coefficient for Small Donor aid share contrasts sharply with work on the World Bank (Fleck and Kilby, 2005) where small donor aid exhibits a strong, positive link with World Bank lending. One possible explanation is that Small Donor aid within Asia is less tightly linked with humanitarian considerations than it is on a global scale. However, the correlation between small donor aid and the other humanitarian measures suggests otherwise. Compared to ADB lending, Japanese aid, and U.S. aid, small donor aid has the largest positive correlation with

population, the largest negative correlation with GDP per capita, and the largest positive correlation with Democracy, all consistent with a strongly humanitarian allocation. In addition, with World Bank lending as the dependent variable in (3.1), Small Donor aid share is significant and positive. This evidence favors a second interpretation, that the role of humanitarian factors is more circumscribed in the allocation of ADB funds, e.g., limited to considerations of population and GDP per capita.

The only other variable with a statistically significant coefficient in the full sample is Japanese aid share ($s^J$). A one percentage point increase in Japanese aid share is associated with a 0.2 percentage point increase in ADB loan share. Gauging this in terms of standard deviations, a one standard deviation increase in Japanese aid share (7.4 percentage points) predicts a 1.5 percentage point increase in ADB loan share from an average of 7.5 percent to 9 percent. This is more than double the effect of a one standard deviation decrease in GDP per capita and about a quarter of the effect of a one standard deviation increase in population share (starting from the sample mean). The estimated coefficients for the other donor interest variables (Japanese and U.S. trade shares and U.S. aid share) are small and far from statistical significance.

Column (3.3) illustrates that UN alignment is not a significant determinant of ADB disbursements in the sample of countries receiving ADB funds across the 1968 to 2002 time period. As in the selection equation, Japanese UN alignment enters with a positive but insignificant coefficient and U.S. UN alignment enters with a negative but insignificant coefficient (and in this case, very small). Other coefficient estimates are largely unaffected by the reduced sample (435 observations, down from 466) or the introduction of the new variables. Japanese aid share, population share, and GDP per capita are again significant with the same signs and magnitude. The estimated coefficient for World import share increases slightly and now boarders on significance.

The question of whether the humanitarian or donor interest variables play a larger role in allocation among eligible countries depends heavily on the metric used. With the quadratic population specification, funding increases with size (in line with the humanitarian rationale) except in the cases of China and India. If one uses the estimates from (3.1) and starts from the sample mean to compare the impact of a one standard deviation increase in the recipient need variables (population increasing, GDP per capita decreasing) with the impact of a one standard deviation increase in the donor interest variables (Japanese aid share increasing), the former clearly dominate with ADB loan share predicted to increase by 5.7 percentage points. However, this clearly does not reflect the experience of the 75 percent of the Asian population living in China and India since the quadratic population term makes simulation results highly dependent on the starting point. One alternative is again to exclude China and India; re-estimating (3.1) and using standard deviations from the restricted sample yields a more modest 2 percentage point increase in the predicted ADB loan share. Another alternative is to estimate (3.1) with only a linear population term so that the simulation does not depend on the starting point. This variation yields a small reversal with a 0.8 percentage point decrease in predicted ADB loan share. Overall, humanitarian factors dominate the allocation of ADB funds between eligible countries only when not considering the disproportionately small allocations to China and India.

[Table 4 about here]

Table 4 compares ADB loan allocation before and after China and India gained access, again conditional on access to ADB funding. Columns (4.1) and (4.2) repeat (3.1) for the 1968 to 1986 and 1987-2002 periods while columns (4.3) and (4.4) repeat (3.3).[25] This breakpoint also conveniently divides the sample relatively evenly. Coefficient estimates for the variables common between the non-UN and UN specifications are comparable so I omit reporting results for the UN

sample without the UN variables.

In column (4.1), the pre-1987 population coefficients (positive linear, negative quadratic) indicate an allocation bias against larger countries even without China and India. The estimated marginal effect of population is negative for population shares over 3% (notably Bangladesh and Indonesia). The post-1986 population coefficients (column (4.2)) more closely mirror those for the overall period with the estimated marginal effect of population negative for shares above 21%, again affecting only China and India. And, as in the overall period, excluding China and India from the estimation sample, the quadratic term is insignificant and, dropping it, the estimated population coefficient is 1.5.

GDP per capita enters with a negative coefficient (consistent with need-based allocation) in both periods but is not statistically significant in either period individually. This appears to be simply the result of the smaller sample sizes as the variation in GDP per capita (in PPP terms and only for countries receiving ADB funding) is essentially the same in the sub-periods as in the overall sample.

The estimated coefficient for Democracy is positive and marginally significant in the earlier period ($p=0.06$); it becomes negative, very small, and far from significant in the second period. This provides evidence that the link between ADB funding and democracy has changed over time but the nature of this change is unclear. The spread of democracy is considerable; in the unconditional sample, the mean of the index is -1.2 in the first period and 1.8 in the second. The sample selection rule may also have changed. The average democracy score is higher in the ADB eligible sample than in the overall sample for the second period (2.5 versus 1.8) but not for the first. Re-estimating the selection equation with separate first and second period democracy variables reveals that the democracy selection effect is basically in the second period. Finally, unconditional estimates –

either an FGLS with AR1 (not correcting for zeros) or a Tobit (not correcting for heteroskedasticity or autocorrelation) on the unconditional sample – find a larger positive coefficient in the first period with a p-value of 0.06. Putting these pieces together, the most straightforward interpretation is that the ADB's consideration of democracy has shifted from allocation to selection but the overall effect may have been to reduce the importance of democracy as a determinant of funding.

Turning to donor interest variables, an interesting pattern of increasing influence emerges. While neither Japanese nor U.S. aid shares are significant in the early period, both enter with positive and significant coefficients in the later period. It is clear that in the overall sample receiving aid (Table 3), the link between Japanese aid share and ADB loan share is driven more by the association in the 1987 to 2002 period which includes lending to China and India. Yet the result is not driven solely by these two countries; even without China and India, Japanese aid share is marginally significant in the 1987-2002 sample (p=0.06) and significant in the 1968-2002 sample (p=0.009). Turning to the U.S., the estimated U.S. aid share coefficient falls in size from the first to second period but becomes statistically significant, a shift unrelated to the inclusion or exclusion of China and India. The estimated U.S. coefficient is about a quarter the magnitude of that for Japanese aid, demonstrating again the tighter link between ADB lending and Japanese aid. Finally, the estimated coefficient on U.S. imports is positive and significant for the second period as compared to negative and insignificant in the first. This change is driven by the addition of China; excluding China, the coefficient is essentially unchanged from the previous period (small, negative and insignificant).

Columns (4.2) and (4.3) include the UN variables in the 1968-1986 and 1987-2002 periods. Interestingly, the relationship between Japanese UN alignment and ADB lending reverses across the periods, with a negative, significant coefficient first and then a positive, significant coefficient. The

latter coefficient become insignificant if either China or India is excluded.

## V. Conclusion

This paper examines the influence of Japan and the United States over the geographic distribution of Asian Development Bank lending. Using panel data from 1968 to 2002 for less developed Asian countries, a two part model points to significant donor influence. The exclusion of China and India (75% of the region's population) from ADB lending prior to the mid-1980s and their restricted level of borrowing thereafter overshadows other, positive humanitarian dimensions of ADB lending. Even setting aside the cases of China and India, donor trade interests and proxies for geopolitical interests appear to play a larger role than do humanitarian factors.

The two part model includes a selection equation and an allocation equation. The selection equation examines the probability that a country will receive funds (eligibility). The allocation equation examines the level of funding among countries that did receive ADB funds. In line with humanitarian principles, the selection equation indicates that poorer and (especially more recently) democratic countries are more likely to receive ADB funds. However, more populous countries are less likely to receive ADB funds and, ceteris paribus, eligibility for ADB funding does not mirror the distribution of bilateral aid from a group of small donors known for their relatively humanitarian aid programs. Japanese trading partners and countries favored by Japanese bilateral aid are more likely to receive ADB funds, suggesting Japanese influence. The link between U.S. variables and selection is more complex: countries favored by U.S. bilateral aid are more likely to receive ADB funds but countries with strong U.S. trade ties are less likely to receive ADB funds. Overall, the estimated effects of Japanese and U.S. interest variables are larger than the estimated effects of humanitarian variables in the selection of countries to receive ADB funds.

Conditional on being selected to receive ADB funds, a country's level of funding increases

with its population–up to a point. Holding other characteristics constant, funding increases with population except for the largest countries (notably Bangladesh and Indonesia before 1987 and China and India since then) which generally receive dramatically less in comparison to their populations. Of the countries receiving funds, poorer countries receive more ceteris paribus. In the allocation equation, democracy appears to have played a role earlier in the sample period. However, as with the selection equation, after controlling for other factors, the level of ADB funding does not mirror the distribution of bilateral aid from a group of small donors known for their relatively humanitarian aid programs. In contrast, World Bank loan allocation does, both within Asia and globally. Donor interest variables, particularly those intended to reflect geopolitics, are significant in the allocation equation primarily in the latter half of the sample period. During that period, higher Japanese bilateral aid and higher U.S. bilateral aid are both associated with more ADB funding, with the link three times larger for Japanese bilateral aid. Voting alignment with Japan in the UN is associated with less ADB funding in the first half of the estimation period and with more ADB funding in the second half, the latter result driven by China and India.

Overall, the evidence suggests that both Japan and the U.S. have systematic influence over the distribution of ADB funds. Whether examining selection or allocation, discrimination against China (attributed to U.S. Cold War politics) and India (driven by Japanese concerns) overshadows other potentially humanitarian aspects of ADB lending. In a similar study of the World Bank, Fleck and Kilby (2005) find that the single largest factor is population with more funds going to larger countries. The influence of U.S. interests is roughly on par with that of humanitarian factors other than population. The ADB case differs in that humanitarian considerations play a less apparent role. In this sense, donor interests more heavily influence the allocation of resources in the ADB than in the World Bank.

## Endnotes

1. The distinction between voting weight (the proportion of overall votes held by a member) and formal voting power (an a priori measure of a member's ability to influence outcomes given the voting weights of each member and the voting rules) is important. For a discussion of these issues and applications to international financial institutions see Strand (1999, 2001, 2003A, 2003B).

2. See Neumayer (2003) for a survey. In the international relations literature, this dichotomy is cast as neo-realist versus idealist explanations for aid flows. Following the literature on aid allocation, I use the term "humanitarian" to describe aid flows that correlate with recipient need and/or development effectiveness; I do not consider whether the donor is truly altruistic or not (e.g., seeking a "warm glow" or the appearance of altruism).

3. The distinction between geopolitical and commercial interests may be spurious for Japan since it is a economic rather than military superpower.

4. For example, discussions about how to allocation aid based on recipient need are unlikely to focus on the aid to GDP ratio. Consider a donor that gives the same absolute amount of aid to every country regardless of GDP. For two countries with the same population size but one poor and one rich, equal aid results in a high aid to GDP ratio in the poor country and a low aid to GDP ratio in the rich country. More generally, negative coefficient estimates in a regression of GDP per capita on the aid to GDP ratio do not necessarily reflect need-based aid allocation. With a log-log specification (when appropriate), the solution is straightforward: $\log(\frac{AID}{GDP}) = \beta \log(\frac{GDP}{POP})$ is equivalent to $\log(\frac{AID}{POP}) = (1+\beta) \log(\frac{GDP}{POP})$, implying need-based allocation only if $\beta<-1$. However, in a linear specification, results are difficult to interpret. In contrast, the aid to GDP ratio may be very appropriate when the issue is a donor rewarding recipient behavior (e.g., UN voting).

5. For example in a probit analysis, countries that trade more with the U.S. and receive more U.S.

bilateral aid are significantly more likely to report infant mortality figures.

6. Rowlands and Ketcheson (2002) examine net ODA disbursement shares to countries in Sub-Saharan Africa. Up through 1990 Dutch aid is positively related to other bilateral aid (including U.S. aid) and negatively related to IMF programs while after 1990 Dutch aid is less closely linked to other bilateral aid and positively linked to the presence of World Bank lending. Swedish aid is positively linked to other bilateral aid but negatively related to U.S. bilateral aid and the presence of World Bank lending in the earlier period but reverses in the later period so that the link with other bilateral aid is negative and with U.S. bilateral aid positive. Canadian aid up through 1990 is positively related to other bilateral aid but negatively related to U.S. aid and unrelated to World Bank or IMF activity but also reverses after 1990 so that the link with other bilateral aid programs is negative and with U.S. bilateral aid and World Bank lending positive.

7. Estimation of a random effects probit had computational problems; results depended on the number of integration points even up to the system's limit (195 for STATA 9). In any case, Guilkey and Murphy (1993) report that a probit with panel corrected standard errors generally performs well when compared with a random effects probit. Incorporating fixed effects via a conditional logit would exclude countries that always or never get ADB funds–over one third of the observations.

8. There are two reasons to expect autocorrelation in the allocation equation. First, disbursements are likely to be correlated over time because loans disburse gradually. Second, institutional budgeting generates inertia for bureaucratic reasons and due to defensive lending. These sources of autocorrelation are primarily institutional so a single autocorrelation parameter is appropriate. For all three specifications in Table 3, a likelihood ratio test strong rejects the null hypothesis of no AR1 ($p \cong 0$ for all three specifications).

The most obvious alternative to an AR1 specification is to include country fixed effects.

However, estimating Table 3 specifications including both fixed effects and AR1 fails to reject the null hypothesis of no fixed effects ($p=0.30$ for specification (3.1), $p=0.23$ for specification (3.2), and $p=0.12$ for specification (3.3)). In contrast, a likelihood ratio test strong rejects the null hypothesis of no AR1 ($p \cong 0$ for all three specifications).

9. Even gross disbursement data have a few negative entries in exceptional circumstances (e.g., seizure of assets by other countries). In these few cases, gross disbursement is set to 0.

10. The denominators of all share variables are sums over the observations in the largest sample used (full sample selection equation in Table 2) so that shares are effectively normalized to sum to one in that sample.

11. For each dyad (Japan-recipient country i or US-recipient country i), I code vote agreement (yes-yes, no-no or abstain/absent-abstain/absent) as a 1, opposite votes (yes-no or no-yes) as a 0, and only one country abstaining/absent (yes/no-abstain/absent or abstain/absent-yes/no) as a 0.5. UN alignment is the mean across all recorded UNGA roll call votes in the given year. Under this method, a country is perfectly aligned with itself. I include all votes rather than a subset so that Japanese and U.S. variables will be more comparable. UN votes are not available for certain country-years: Bangladesh 1972-1973; China 1967-1970, 1972-1973; Republic of Korea 1967-1990; and Taiwan 1974-2001. An alternative measure (Gartzke and Tucker's [1999] UN voting similarity, an application of Signorino and Ritter's [1999] S measure of similarity) is highly correlated with the variable constructed but available only through 1996. In that sample, the two measures give similar results.

12. Due to data availability, the full sample covers: Azerbaijan 1995-2002; Bahrain 1997; Bangladesh 1973-2002, Bhutan 1997; Cambodia 1994-2000; China 1968-2002; Fiji 1971-2000; India 1968-2002; Indonesia 1968-2002; Kazakhstan 1995-2002; Republic of Korea 1968-2002;

Kyrgyz Republic 1995-2002; Laos 1987-1992, 1997; Malaysia 1968-2002; Mongolia 1987-1991, 1997; Myanmar 1969-1990; Nepal 1968-2002; Pakistan 1968-2002; Papua New Guinea 1976-2000; Philippines 1968-2002; Singapore 1968-1997; Sri Lanka 1968-2002; Taiwan 1969-1999; Tajikistan 1997-2002; Thailand 1968-2002; Turkmenistan 1997; and Uzbekistan 1995-1997.

13. The eligibility sample contains one observation on Bhutan (1997). Although this has positive ADB lending, it drops from the allocation sample because of the AR1 specification.

14. The change in the average democracy score is not driven by the start of lending to China in 1986 since India enters in 1987 and the two largely cancel each other.

15. Subsequent predicted probability differentials also hold variables at sample means except as noted.

16. I also explored the Freedom House and Political Terror Scale indices as alternatives to Polity IV. Estimation results with a composite of the Freedom House political rights and civil liberties indices (available starting in 1972) yields the same results as with the Polity measure. However, in the more limited period in which the Political Terror Scale is available, none of the measures (Polity, Freedom House, or Political Terror Scale) were significant in the selection equation probit (since the limited variation in the dependent variable necessitates a large sample). None of the measures proved significant in the allocation equation. Although Munck and Verkuilen's (2002) review of democracy measures notes some shortcomings in conceptualization, measurement and aggregation in Polity IV, their assessment of the Freedom House index is generally less favorable. Given this and differences in coverage, I elected to use the Polity measure. Also note that quadratic terms prove insignificant.

17. This comparison implies incompatible values for the trade variables (i.e., Japanese and U.S. trade cannot be positive when world trade is zero) but does illustrate the magnitude of the effect.

18. An F-test rejects the hypothesis that the Japanese trade variables are jointly insignificant.

However, a specification that sums exports and imports as "trade" gives the opposite result: Japanese trade share is positive but insignificant. Overall, the Japanese import effect is not very robust, falling in size and significance if a few extreme observations are dropped (e.g., early data points for Bangladesh).

19. Simple descriptive statistics reveal the same pattern as in the probit. The sample correlation between ADB eligible and U.S. export share is -0.27; the average U.S. export share is 5.1% for ADB eligible countries and 10.5% for others. A specification that sums exports and imports as "trade" yields comparable results: U.S. trade share is negative and significant. Only when using the actual share of ADB funds rather than the dichotomous variable is a positive correlation evident (0.14 in the overall sample, 0.35 in the ADB eligible sample).

20. An F-test falls to reject the hypothesis that the Japanese trade variables in (2.2) are jointly insignificant . A specification that sums exports and imports as "trade" yields comparable results: Japanese trade share is positive but insignificant.

21. In a quadratic specification, the estimated coefficient on the linear terms are negative and and on squared terms positive (none significant). These are the opposite signs than would be expected in a strategic model; "swing voters" have a lower predicted probability of receiving ADB funding than either strong supporters or strong opponents.

22. Specifically, I re-estimate (2.1) without China and India. In this setting, Japanese trade plays a large role with the estimated coefficients for exports and imports both large and significant. The simulation then varies the statistically significant variables with plausible interpretations (GDP per capita and Democracy for need; Japanese exports and imports and U.S. aid share for donor interests) by one standard deviation in the appropriate direction from their means (means and standard deviations are from the estimation sample excluding China and India). For (2.3), simulation results

are virtually the same with or without China and India, a 60 percentage point decrease.

23. A quadratic population term is insignificant in the selection equation.

24. Small donor aid share does enter as positive and significant in specifications that do not adequately control for population, e.g., excluding population share altogether or including only a linear term in a sample that includes China and India.

25. Although China received some ADB funds in 1986, this observation drops from the sample with the AR1 specification.

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## Table 1–Descriptive statistics

### Selection equation sample

| Variable | Mean | St. Dev. | Min | Max | N | Units |
|---|---|---|---|---|---|---|
| ADB eligible$_t$ | 0.814 | 0.390 | 0 | 1 | 574 | Binary |
| $s^J_t$ | 0.061 | 0.073 | 0 | 0.335 | 574 | Share |
| $s^{US}_t$ | 0.061 | 0.082 | 0 | 0.408 | 574 | Share |
| $s^{SD}_t$ | 0.061 | 0.091 | 0 | 0.536 | 574 | Share |
| Population$_{t-1}$ | 0.061 | 0.122 | 0.0002 | 0.483 | 574 | Share |
| GDP per capita$_{t-1}$ | 3.676 | 3.731 | 0.397 | 24.94 | 574 | $000 PPP 1996 |
| World exports$_{t-2}$ | 0.061 | 0.061 | 0 | 0.334 | 574 | Share |
| World imports$_{t-2}$ | 0.061 | 0.068 | 0 | 0.413 | 574 | Share |
| Japanese exports$_{t-2}$ | 0.061 | 0.070 | 0 | 0.315 | 574 | Share |
| Japanese imports$_{t-2}$ | 0.061 | 0.081 | 0 | 0.438 | 574 | Share |
| U.S. exports$_{t-2}$ | 0.061 | 0.076 | 0 | 0.431 | 574 | Share |
| U.S. imports$_{t-2}$ | 0.061 | 0.083 | 0 | 0.453 | 574 | Share |
| Democracy$_{t-1}$ | 0.277 | 6.618 | -9 | 10 | 574 | -10 to 10 |
| Japanese UN alignment$_{t-1}$ | 0.736 | 0.075 | 0.472 | 1 | 516 | 0 to 1 |
| U.S. UN alignment$_{t-1}$ | 0.401 | 0.131 | 0.216 | 0.923 | 516 | 0 to 1 |

### Allocation equation sample

| Variable | Mean | St. Dev. | Min | Max | N | Units |
|---|---|---|---|---|---|---|
| $s^{ADB}_t$ | 0.075 | 0.080 | 0.00008 | 0.519 | 466 | Share |
| $s^J_t$ | 0.067 | 0.074 | 0 | 0.335 | 466 | Share |
| $s^{US}_t$ | 0.064 | 0.079 | 0 | 0.390 | 466 | Share |
| $s^{SD}_t$ | 0.059 | 0.074 | 0 | 0.341 | 466 | Share |
| Population$_{t-1}$ | 0.044 | 0.094 | 0.0003 | 0.433 | 466 | Share |
| GDP per capita$_{t-1}$ | 3.265 | 2.608 | 0.405 | 14.786 | 466 | $000 PPP 1996 |
| World exports$_{t-2}$ | 0.053 | 0.058 | 0 | 0.334 | 466 | Share |
| World imports$_{t-2}$ | 0.053 | 0.066 | 0 | 0.413 | 466 | Share |
| Japanese exports$_{t-2}$ | 0.054 | 0.066 | 0 | 0.315 | 466 | Share |
| Japanese imports$_{t-2}$ | 0.059 | 0.086 | 0 | 0.438 | 466 | Share |
| U.S. exports$_{t-2}$ | 0.051 | 0.065 | 0 | 0.296 | 466 | Share |
| U.S. imports$_{t-2}$ | 0.055 | 0.077 | 0 | 0.453 | 466 | Share |
| Democracy$_{t-1}$ | 0.717 | 6.503 | -9 | 10 | 466 | -10 to 10 |
| Japanese UN alignment$_{t-1}$ | 0.739 | 0.072 | 0.472 | 1 | 435 | 0 to 1 |
| U.S. UN alignment$_{t-1}$ | 0.395 | 0.132 | 0.216 | 0.923 | 435 | 0 to 1 |

**Table 2–Selection Equation**

Probit with PCSE, Dependent Variable: Receives ADB disbursements

| | (2.1) | (2.2) | (2.3) |
|---|---|---|---|
| | Full sample | UN sample | UN sample |
| $Population_{t-1}$ | -14.529 | -15.520 | -15.499 |
| | (4.42)** | (4.36)** | (4.36)** |
| $GDP\ per\ capita_{t-1}$ | -0.318 | -0.347 | -0.355 |
| | (3.33)** | (2.78)** | (2.81)** |
| $Democracy_{t-1}$ | 0.131 | 0.150 | 0.150 |
| | (3.62)** | (3.52)** | (3.58)** |
| $s^{SD}_t$ | -5.820 | -8.387 | -8.429 |
| | (1.33) | (1.70) | (1.78) |
| $World\ Exports_{t-2}$ | 38.449 | 29.714 | 30.079 |
| | (3.64)** | (2.65)** | (2.65)** |
| $World\ Imports_{t-2}$ | -17.228 | -0.569 | -0.948 |
| | (1.07) | (0.03) | (0.05) |
| $Japanese\ Exports_{t-2}$ | 6.905 | 13.556 | 13.651 |
| | (0.97) | (1.80) | (1.74) |
| $Japanese\ Imports_{t-2}$ | 18.203 | 6.289 | 6.112 |
| | (2.20)* | (0.69) | (0.62) |
| $s^{J}_t$ | 12.315 | 10.379 | 9.935 |
| | (3.00)** | (2.22)* | (2.13)* |
| $Japanese\ UN\ alignment_{t-1}$ | | | 2.037 |
| | | | (0.70) |
| $US\ Exports_{t-2}$ | -24.764 | -27.327 | -27.679 |
| | (4.55)** | (5.13)** | (5.03)** |
| $US\ Imports_{t-2}$ | -3.811 | -1.352 | -0.608 |
| | (0.73) | (0.28) | (0.13) |
| $s^{US}_t$ | 10.637 | 16.076 | 15.967 |
| | (2.52)* | (3.21)** | (3.13)** |
| $U.S.\ UN\ alignment_{t-1}$ | | | -1.997 |
| | | | (0.75) |
| Observations | 574 | 516 | 516 |
| Number of Countries | 27 | 27 | 27 |
| Pseudo-R2 | 0.572 | 0.559 | 0.563 |

Robust z statistics in parentheses; * significant at 5%; ** significant at 1%

All specification include year dummies.

**Table 3–Allocation Equation**

FGLS with common AR1, Dependent Variable: share of ADB disbursements

Sample conditional on selection (positive ADB disbursements)

| | (3.1) | (3.2) | (3.3) |
|---|---|---|---|
| | Full sample | UN sample | UN sample |
| $Population_{t-1}$ | 1.427 | 1.535 | 1.473 |
| | (4.85)** | (5.31)** | (5.10)** |
| $Population_{t-1}^2$ | -3.831 | -4.096 | -3.942 |
| | (5.36)** | (5.93)** | (5.71)** |
| $GDP\ per\ capita_{t-1}$ | -0.00231 | -0.00222 | -0.00249 |
| | (2.25)* | (2.32)* | (2.49)* |
| $Democracy_{t-1}$ | 0.00007 | 0.00007 | 0.00005 |
| | (0.29) | (0.34) | (0.22) |
| $s^{SD}_t$ | 0.0217 | 0.0371 | 0.0377 |
| | (0.34) | (0.61) | (0.62) |
| $World\ Exports_{t-2}$ | -0.0791 | -0.0292 | -0.00879 |
| | (0.23) | (0.08) | (0.02) |
| $World\ Imports_{t-2}$ | 0.689 | 0.739 | 0.712 |
| | (1.83) | (2.03)* | (1.95) |
| $Japanese\ Exports_{t-2}$ | 0.0472 | -0.0302 | -0.0461 |
| | (0.21) | (0.13) | (0.20) |
| $Japanese\ Imports_{t-2}$ | -0.220 | -0.213 | -0.197 |
| | (1.26) | (1.23) | (1.13) |
| $s^J_t$ | 0.241 | 0.184 | 0.182 |
| | (3.57)** | (2.71)** | (2.67)** |
| $Japanese\ UN\ alignment_{t-1}$ | | | 0.0191 |
| | | | (1.58) |
| $US\ Exports_{t-2}$ | -0.0747 | -0.1543 | -0.143 |
| | (0.34) | (0.65) | (0.61) |
| $US\ Imports_{t-2}$ | 0.0836 | 0.1296 | 0.124 |
| | (0.44) | (0.71) | (0.68) |
| $s^{US}_t$ | 0.0451 | 0.0301 | 0.0363 |
| | (1.00) | (0.69) | (0.83) |
| $U.S.\ UN\ alignment_{t-1}$ | | | -0.00195 |
| | | | (0.12) |
| Observations | 466 | 435 | 435 |
| Number of Countries | 22 | 22 | 22 |
| AR1 coefficient | 0.55 | 0.55 | 0.55 |

Absolute value of z statistics in parentheses; * significant at 5%; ** significant at 1%

All specification include year dummies.

**Table 4–Allocation Equation in sub-periods**

FGLS with common AR1, Dependent Variable: share of ADB disbursements

Sample conditional on selection (positive ADB disbursements)

| | (4.1) | (4.2) | (4.3) | (4.4) |
|---|---|---|---|---|
| | l968-1986 | 1987-2002 | l968-1986 | 1987-2002 |
| $Population_{t-1}$ | 3.759 | 1.627 | 5.553 | 1.695 |
| | (3.05)** | (5.09)** | (4.60)** | (5.26)** |
| $Population_{t-1}^2$ | -65.263 | -3.910 | -79.405 | -4.051 |
| | (3.50)** | (5.13)** | (4.74)** | (5.28)** |
| $GDP\ per\ capita_{t-1}$ | -0.00374 | -0.00144 | -0.00194 | -0.00222 |
| | (1.24) | (1.27) | (0.63) | (1.72) |
| $Democracy_{t-1}$ | 0.00085 | -0.00009 | 0.00073 | -0.00015 |
| | (1.86) | (0.32) | (1.53) | (0.53) |
| $s^{SD}_t$ | 0.00128 | 0.0474 | 0.0439 | 0.0186 |
| | (0.01) | (0.60) | (0.48) | (0.24) |
| $World\ Exports_{t-2}$ | 0.0281 | -0.479 | 0.157 | -0.677 |
| | (0.07) | (0.86) | (0.33) | (1.21) |
| $World\ Imports_{t-2}$ | 0.0871 | -0.100 | 0.187 | -0.0286 |
| | (0.19) | (0.21) | (0.43) | (0.06) |
| $Japanese\ Exports_{t-2}$ | 0.486 | -0.0381 | 0.244 | 0.109 |
| | (1.56) | (0.14) | (0.65) | (0.40) |
| $Japanese\ Imports_{t-2}$ | 0.225 | 0.318 | 0.295 | 0.301 |
| | (1.07) | (1.37) | (1.57) | (1.31) |
| $s^J_t$ | 0.168 | 0.242 | -0.130 | 0.225 |
| | (1.58) | (3.43)** | (1.15) | (3.24)** |
| $Japanese\ UN\ alignment_{t-1}$ | | | -0.283 | 0.0309 |
| | | | (2.48)* | (2.38)* |
| $US\ Exports_{t-2}$ | -0.0294 | -0.142 | -0.148 | -0.175 |
| | (0.10) | (0.62) | (0.47) | (0.75) |
| $US\ Imports_{t-2}$ | -0.181 | 0.495 | -0.110 | 0.549 |
| | (0.77) | (2.11)* | (0.53) | (2.39)* |
| $s^{US}_t$ | 0.147 | 0.0653 | 0.0116 | 0.0694 |
| | (1.46) | (1.97)* | (0.11) | (2.10)* |
| $U.S.\ UN\ alignment_{t-1}$ | | | 0.157 | 0.00823 |
| | | | (1.87) | (0.43) |
| Observations | 224 | 241 | 199 | 235 |
| Number of Countries | 14 | 20 | 13 | 20 |
| AR1 coefficient | 0.38 | 0.58 | 0.39 | 0.59 |

Absolute value of z statistics in parentheses; * significant at 5%; ** significant at 1%

All specification include year dummies.