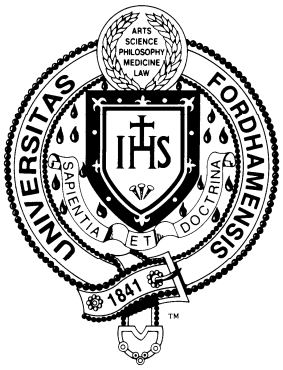


**Fordham University**
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# Will the global financial crisis lead to lower foreign aid? A first look at United States ODA

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# Will the global financial crisis lead to lower foreign aid? A first look at United States ODA

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DISCUSSION DRAFT

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ABSTRACT

Analyzing US economic and foreign aid data from 1967 to 2007, this paper investigates whether adverse economic and financial conditions are negatively linked to official development assistance (ODA). It finds empirical evidence that US ODA has tended to decline as its economic conditions worsen. A 1 unit increase in the misery index (sum of inflation and unemployment) is associated with a roughly 0.01 percentage point decline in US ODA expressed as a share of GNI. Furthermore, an increase in financial volatility from 1 percent to 2 percent (measured by the standard deviation of the rate of return of the S&P500) is associated with a decrease in US ODA by about $2.78 billion. Informed by the empirical results in this paper, and based on very rough guesstimates, a potential decline in US ODA of anywhere from 13 to 30 percent could occur depending on the severity of the economic conditions in 2009. This predicted decline in ODA is much lower than some of the guesstimates so far by different analysts. Based on the US historical pattern, ODA is indeed at risk; nevertheless, it need not decline significantly during adverse economic times.

JEL: F35, G01, O10
Key words: ODA, foreign aid, financial crisis, misery index

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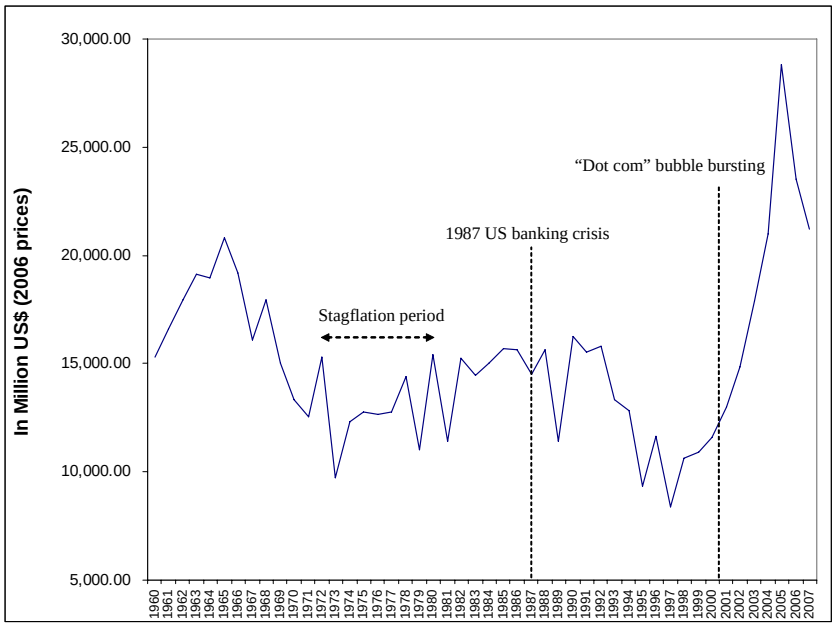
## Introduction

The financial crisis originating in the mature market economies is expected to create ripple effects across the entire global economy. In addition to its implications on stock market volatility, international trade, private capital flows and remittances, there is also growing concern over its impact on foreign aid. Analysts now warn that the imminent economic slowdown in many donor countries could lead to a contraction in official development assistance (ODA).[1] Should a decline in aid occur, this could have serious consequences for the poorest and most vulnerable countries that depend on this aid, and on the achievement of international development goals, including the Millennium Development Goals (MDGs).

It is not yet clear to what extent the crisis will affect total net ODA, since historical data from some donors suggest that aid *need not decline* at least for some types of economic instability and financial crisis episodes (i.e. these obviously differ in severity). For instance, there is some cursory evidence to suggest that in the last systemic banking crisis in the US in 1987, it may have resulted in a decline in net ODA (expressed in 2006 US dollars). However, there is less evidence of a negative relationship if one considers the period of stagflation in the 1970s and the "dot com" bubble bursting in the early 2000s (figure 1).

**Figure 1. US Net ODA**
(In millions of 2006 US dollars)




Source: OECD-DAC Aid Statistics [http://www.oecd.org/dataoecd/50/17/5037721.htm].

[1] A very preliminary analysis of Nordic countries' net ODA at the Center for Global Development suggests that donor countries facing financial crisis are likely to see their aid decline, recovering only when the economy has also picked up. See http://blogs.cgdev.org/globaldevelopment/2008/10/history_says_financial_crisis.php.

It is also important to consider that US ODA declined sharply in recent years—in 2006 and 2007 this was due largely to each prior year's one-time debt relief operations in Iraq (for 2005) and the Democratic Republic of Congo and Nigeria (for 2006). Furthermore, recent analysis by Radelet and others (2008) points out that excluding aid to Iraq, Afghanistan and spent on HIV/Aids, US ODA has increased only modestly since 2000 (i.e. by a mere 15 percent) (Radelet and others, 2008:1). It is therefore critical to examine whether even this modest increase is at risk if economic conditions in the US worsen.

Even as the present crisis is still evolving, it is important to begin to examine the evidence on its possible impact on aid flows, based on historical data. This brief paper undertakes a more formal empirical analysis of the possible relationship between indicators of economic and financial conditions in the United States and its official development assistance (ODA) during the period from 1967 to 2007. The main objective is to draw on the empirical findings in order to provide a rough guesstimate of the impact of the crisis on ODA flows.

This paper finds some empirical evidence that US ODA is adversely affected by more difficult economic conditions (as indicated by the misery index) and financial volatility (indicated by the volatility in S&P500 returns). Nevertheless, the empirical results suggest that the historical decline in aid associated with adverse economic conditions is of a much smaller magnitude compared to the present guesstimates of aid decline due to the global financial crisis.

## 1. Brief Literature Review

There is now an extensive literature examining the potential factors and motivations behind the supply of aid. Many of these studies find evidence that donors' political, economic and strategic interests appear to dominate altruistic and development-centered motivations in their foreign aid programs. For example, Alesina and Dollar (2000) examined OECD-DAC countries' bilateral aid data from 1970-1994, and concluded that factors such as colonial ties and strategic considerations (i.e. proxied by the degree of correlation in the donor and recipient countries' voting records at the UN) are among the factors that could influence the flow of bilateral aid.

Boschini and Olofsgård (2002) analyzed the effect of the end of the Cold War on donor countries' aid allocations. Using aid data for 17 donor countries during the period 1970-1997, these authors found empirical evidence that total aid is significantly and positively affected by the external threat faced by the donor countries (i.e. indicated by the military budgets of the former Easter bloc). Furthermore, Younas (2008) examined bilateral aid data for 22 OECD-DAC countries during the period 1992-2003, and he found that bilateral aid is allocated to recipient countries with a greater tendency to import goods which their donors have a comparative advantage in producing.

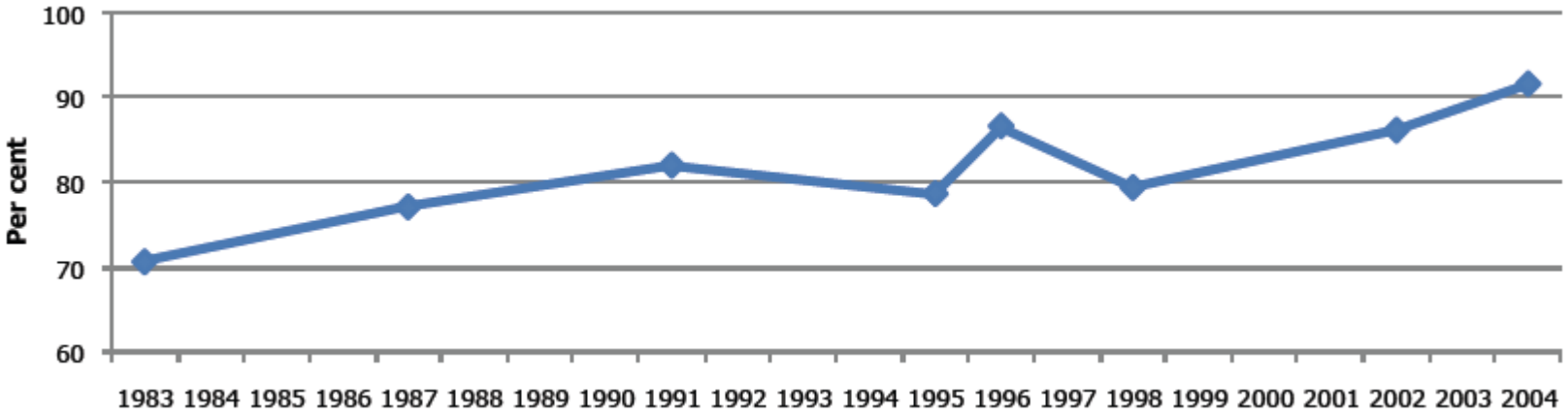
Recent studies have also turned to survey-based data in order to shed more light on the characteristics of people from donor countries that tend to support foreign aid. For instance, Chong and Gradstein (2008) looked into the possible motivations behind foreign aid of OECD-DAC countries. Turning first to an analysis of individual attitudes, they examine data for over 10,000 individuals surveyed in 1995-1997 and 1999-2000 in connection with the World Value Survey, which contains demographic information and a wide range of information reflecting religiosity, an international focus, and political leaning. They found evidence suggesting that donor populations' satisfaction with their government's performance and their individual income are positively linked to the willingness to provide foreign aid. As a follow-up, these authors next turned to an analysis of total aid disbursements, finding evidence that, in donor countries, corruption, political leaning (i.e. using a dummy variable to reflect if the chief executive's party is a left wing party), and tax revenues were also linked to aid flows. These authors also found that richer and more egalitarian countries are more likely to provide higher aid.

In addition, Paxton and Knack (2008) examined data on about 5700 individuals in nine donor countries drawn from the 1995 World Values Survey, and data on over 6000 individuals in 17 donor countries drawn from the 2002 Gallup "Voice of the People." Analyzing the responses from these two sets of databases, these authors find evidence that individuals who are more likely to support foreign are those that: attend religious services, watch TV, believe the poor can escape poverty and trust others. Trust in the United Nations and the World Bank also appeared to be a more important factor behind aid support as compared to trust in the respondents' own government. In the same vein as earlier studies, these authors also found that support for foreign aid is positively linked to an individual's income.

A critical finding in a number of these studies is that various measures of national income appear to be positively linked to foreign aid—or at the level of the individual, higher personal income is linked to stronger support for foreign aid. This might suggest that a negative shock to the income of the donor countries, such as what may be brought about by a financial crisis and a global economic slowdown, may adversely affect political support for providing aid, and eventually become reflected in lower net aid disbursement.

Nevertheless, recent opinion polls suggest that public support for aid remains high among the OECD-DAC countries, despite the financial crisis that erupted in 2008. For instance, in July of 2008 and later in October of the same year, 79 percent and 76 percent of French people polled said the budget for aid to developing countries should be increased or maintained. (Compare this with 64 percent in a similar earlier poll in June 2007.) Thus the general support for aid still appears strong (Zimmerman, 2008:1). Indeed, drawing on the Eurobarometer and national surveys, the support for foreign aid appears to be on a general upward trend since the early 1980s until 2004 despite the occurrences of economic and financial problems in donor countries throughout this period (Figure 2).

**Figure 2. Estimated Percentage of the OECD-DAC Population Supporting Aid to Developing Countries, 1983-2004**




Source: Eurobarometer and national surveys for non-EU countries, as reported by Zimmerman (2008:2).

## 2. Empirical Model and Results

The empirical methodology here builds on the regression model developed by Chong and Gradstein (2008), wherein ODA is explained by variables such as: real GDP per capita, indicators of inequality and corruption, tax revenues, and political orientation of the government. Indicators linked to financial volatility and worsening economic conditions—proxy indicators for the general public sentiment—are added to the regression model in order to examine their potential influence on aid.[2]

One of the variables of interest is the misery index, which is an indicator reflecting unemployment and inflation created by Arthur Okun and popularized during Jimmy Carter's Presidential campaign in 1978. An "augmented misery index" has recently been developed by Hufbauer, Kim and Rosen (2008) in order to reflect asset prices (i.e. housing and stock market). The underlying logic is that more difficult economic circumstances in the donor country could make people feel worse off, and therefore erode public support for foreign aid. In addition, indicators of stock market volatility as a proxy for financial volatility are also considered. A dummy variable for the post-Monterrey Consensus period is also added, in order to examine whether there has been a marked change in US aid trends during this period. Table A1 presents a summary of the variables and their expected signs.

Both US total ODA and its bilateral sub-component will be examined as dependent variables, in order to determine whether these two might behave differently. It is possible that bilateral ODA may be less affected by economic instability and more difficult economic conditions, to the extent that the US government has more control over this sub-component of ODA. Adverse economic conditions might also be associated with more volatile and less predictable ODA in the future, given that the resolution of economic instability and financial crises are often difficult to predict and this creates uncertainty about the availability of resources. In order to try and examine this additional dimension, regressions using the standard deviation of total and bilateral US ODA (in $2000 and based on the five year forward figures) as dependent variables were also examined.

The regression results are reported in table A2 (Dependent: ODA in 2000 US dollars), table A3 (Dependent: ODA expressed as a share of US GNI), table A4 (Bilateral ODA in 2000 US dollars) and table A5 (Bilateral ODA expressed as a share of total US ODA). Tables A6 and A7 present the results using the volatility of aid as the dependent variable.

Over-all the regression results suggest that the party affiliation of the US President and tax revenues do not seem to be significant factors in determining US ODA or bilateral US ODA. The post-Monterrey dummy is positive and statistically significant,

[2] One departure from the original model is that we did not use a corruption variable anymore as an explanatory variable. Because corruption in the US is not expected to vary much during the period examined, this was not expected to be an important omission. Nevertheless, we acknowledge that in a multi-country variant of this study, the corruption variable should ideally be included.

and the coefficient suggests that this period is characterized by an increase in US ODA (in 2000 US dollars). The significance of the coefficients for the real GDP per capita and the Gini coefficient are inconsistent, rendering inference on these variables inconclusive. The results also suggest that aid could be adversely affected by financial volatility and adverse economic conditions.[3]

- *Aid and Financial Volatility*. US ODA is negatively linked to stock market volatility. The results suggest that an increase in financial volatility from 1 percent to 2 percent (measured by the standard deviation of the rate of return of the S&P500) is associated with a decrease in US ODA by about $2.78 billion (see regression 8, table A2). Similarly, bilateral US ODA also tends to decline with increasing financial volatility (see regression 8 in table A4).

- *Aid and Economic Adversity*. There is little evidence that US ODA expressed in level terms is affected by adverse economic conditions (see regressions 5, 6 and 7, table A2). Nevertheless, a 1 unit increase in the misery index results in roughly a 0.01 percentage point decline in US ODA expressed as a share of GNI (see regressions 5 and 6, table A3). Contrary to what was expected, US bilateral ODA, whether expressed in level terms or as a share of total ODA, appears to decline as economic conditions deteriorate (see regressions 5 and 6, tables A4 and A5). This suggests that bilateral ODA is more sensitive to the economic milieu. This could be the case if ODA allocated through multilateral organizations and channels are more stable, whereas bilateral ODA is more easily adjusted based on domestic economic conditions. This explanation coheres with recent analysis by the OECD, which forecasts that a possible change in aid composition in 2009 would emphasize allocations through multilateral channels such as the World Bank and the IMF. This, in turn, might tend to favor middle income over lower income countries (Mold and others, 2008).

- *Aid volatility.* The results using the future volatility of total and bilateral aid are reported in tables A6 and A7 respectively. The results are mixed: the future volatility of total and bilateral ODA does not appear to be linked to financial volatility. Furthermore, the coefficients for some of the misery indicators are statistically significant and negative, which is the reverse of what was expected. These results suggest, instead, that more difficult economic conditions are associated with lower future aid volatility. A potential explanation for this is that even as aid declines during periods of volatility and economic decline, it also tends to be less volatile. It is possible that as aid approaches a lower threshold level, more adjustments are made in the composition of aid and in its deployment. This explanation is also compatible with efforts to preserve contributions to

[3] There is a risk of multicollinearity among the right hand side variables. Real GDP per capita, for example, could be highly correlated with explanatory variables like the misery index and tax revenues. Nevertheless, dropping the real GDP per capita variable did not materially change the regressions results. In addition, we also ran regressions using inflation and unemployment separately as explanatory variables. The regression results suggest that these variables individually are less compelling explanatory variables. These additional regressions are no longer reported here; but they are available from the authors upon request.

multilateral agencies, as well as resources devoted to the production of regional and global public goods. Nevertheless, a potential concern, as noted earlier, is that resources channeled to low income countries might be sacrificed in this aid reallocation.

## 3. Conclusion

The analysis in this paper is a first attempt to examine the potential impact of financial and economic crises in donor countries on their ODA. The focus here is on the United States, which is the center of the recent financial volatility in the mature markets. This paper finds some empirical evidence that US ODA is adversely affected by more difficult economic conditions (as indicated by the misery index) and financial volatility (indicated by the volatility in S&P500 returns). There appears to be no evidence that adverse financial and economic conditions are associated with more volatile ODA.

Informed by the empirical results in this paper, one can begin to make a few rough guesstimates of how US ODA could be impacted by the evolving global financial crisis. For instance, if the US monthly unemployment rate were to increase to 8 percent at some point in 2009 as some unofficial sources estimate,[4] and assuming this translates roughly to a 2 percentage point increase from its 2008 value, then US ODA expressed as a share of GNI could go down by 0.02 percentage points based on the coefficient estimate in this paper. Since the 2008 US ODA figure is still not available, we could use the 2007 figure to help place this potential ODA decline in perspective. In 2007, US ODA expressed as a share of GNI was 0.16 percent. If this goes down to 0.14 percent, then this represents a decline of about $2 billion. Put differently, this represents a roughly 13 percent decline in US ODA compared to its 2007 level.

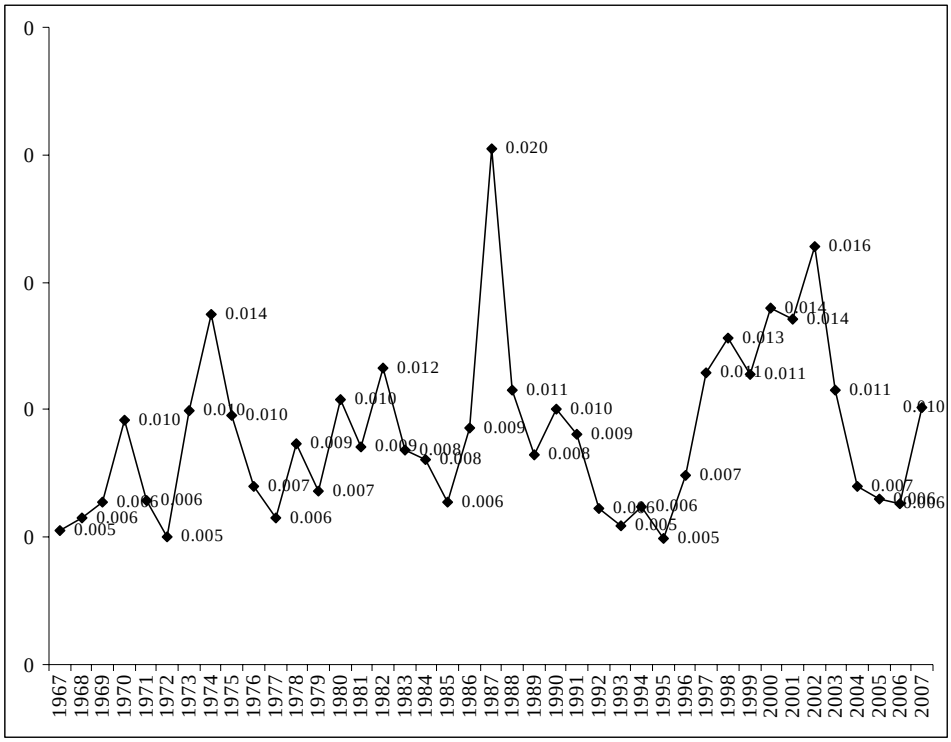
Another scenario could focus on financial volatility. The standard deviation of S&P500 rates of return increased from 1 percent to 2.6 percent during the period from January 1, 2008 to December 10, 2008.[5] Given this, figure 3 shows that 2008 will likely be the year with the highest financial volatility, when measured by the standard deviation of S&P500 returns. Using the empirical estimate in this study, a 1.6 percentage point increase in financial volatility could be associated with a $4.45 billion decrease in US ODA, amounting to about a quarter of 2007 US ODA.

It is important to note that these estimates are illustrative. Other regression specifications could generate results that imply up to a one-third decline in US ODA based on similar scenarios.[6] Nevertheless, based on the array of results, it is possible to empirically substantiate an estimated potential decline of about 13 percent to 30 percent in ODA based on plausible scenarios. This is much lower than some of the guesstimates so far by different analysts. For instance, some have cited the case of Finland during its

[4] See Revell (2008).
[5] Authors' calculations based on data from the Bloomberg Terminal.
[6] We also ran regressions wherein the financial volatility variable was expressed in log form. These results are no longer reported but are available from the authors upon request.

1990-1993 banking crisis—its GDP fell by about 11 percent and its development aid declined by 60 percent (Mold and others 2008, 1).[7] The results in this paper suggest that ODA—at least based on the US historical pattern—need not decline significantly during adverse economic times. This supports the earlier observation that public support for foreign aid appears to be strong in many OECD-DAC countries, even as the financial crisis appears to have worsened.

**Figure 3. Standard Deviation of S&P500 Returns, 1967-2007**




Source: Authors' calculations based on data from the Bloomberg Terminal.

Nevertheless, the analysis herein is subject to a number of caveats, and it could clearly be expanded in several directions. First, the results are used to try and predict the effect of the present crisis on ODA flows. Nevertheless, the present crisis appears to be of an unprecedented nature and size; and it has already generated interactions with the recent food and fuel price spikes which are still little understood. The combined effects of the food, fuel and financial crises in 2008 creates a somewhat unique combination of pressure factors. All this suggests that drawing on empirical relationships based on past data must be taken with a grain of salt.

In addition, this paper has taken as a starting point that a decline in ODA will be harmful to international development goals and aid recipients' progress in human development. Yet, clearly, there are many types of ODA, such as aid channeled to support the development work of multilateral agencies or that deployed in the form of

[7] Various guesstimates place the possible aid slowdown anywhere from 40 percent to 62 percent. See http://www.irinnews.org/report.aspx?ReportId=81319.

bilateral aid. In addition, there are also possible qualitative differences such as that of tied versus untied aid. The literature on aid effectiveness has helped to underscore the ambiguity in the ultimate growth and development impact of aid. The determinants of its impact include the way in which aid is channeled to the recipient, and the way that the recipient absorbs aid so that it leverages good policies (Easterly, 2006). Hence, it is not just the level of aid that is relevant—the way it is deployed by the donor, and its use by the recipient are both critically important. It total aid is under threat of declining, then there is added relevance to try and improve how aid is deployed and used, in order to try and increase aid effectiveness. This is a potential silver lining in the crisis – it presents an opportunity and impetus to try and improve on how aid is deployed and used.

Finally, even as this paper has attempted to study bilateral ODA separately from total ODA, it is still unclear which sub-components of aid will be much more sensitive to worsening economic conditions. A finer disaggregation of ODA is required, in order to explore this. One hypothesis could be that aid used in ways that promote the donor's strategic interests (and it is possible that this could be incoherent with the recipients' development objectives) is less likely to be affected. There is also the potential risk that aid reallocation could occur in ways that result in a *de facto* decrease in the share of lower income countries. For example, in recent years, US ODA to sub-Saharan Africa has reflected a declining preference for the poorest and best-governed countries in this region (Radelet and others, 2008). If aid is at risk of contracting and with aid re-allocation likely, then this is clearly an important area for close monitoring.

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## Table A1. Summary of Variables and Expected Signs

| VARIABLE | DEFINITION | EXPECTED SIGN | SOURCE |
|---|---|---|---|
| DEPENDENT | | | |
| ODAGNI | ODA expressed as a share of total GNI | | OECD-DAC Statistics Online |
| ODA2000 | Net ODA expressed in constant 2000 US dollars | | OECD-DAC Statistics Online |
| BILATODA2000 | Net bilateral ODA expressed in constant 2000 US dollars | | OECD-DAC Statistics Online |
| BILATODASH | Net bilateral ODA expressed as a share of total net ODA | | OECD-DAC Statistics Online |
| SDTOTAL5 | Standard deviation of total net ODA for each 5-year period moving forward (e.g. for 1967, the value is the standard deviation of total net ODA for 1967-1971) | | Authors' calculations |
| SDBILAT5 | Standard deviation of bilateral net ODA for each 5-year period moving forward | | Authors' calculations |
| INDEPENDENT | | | |
| RGDPPERCAP | Real GDP per capita expressed in constant year 2000 US dollars | Positive (for ODA): Richer societies are expected to provide more aid<br>Negative (for ODA volatility): Richer societies are expected to provide less volatile aid | WDI Online |
| DEMOCRAT | Dummy variable takes the value 1 if the US President is from the Democratic Party | Positive (for ODA): Higher ODA for Democrats if they tend to provide more support for foreign aid<br>Negative (for ODA volatility): Less volatile ODA for Democrats if they tend to support more stable aid flows | |

Table A1 continued…

| | | | |
|---|---|---|---|
| GINI | Indicator of income inequality | Negative (for ODA): More egalitarian societies are expected to provide more aid<br>Positive (for ODA volatility): More egalitarian societies might tend to support more stable aid flows | US Bureau for Labor Statistics |
| TAXREVGDP | Tax revenue expressed as a share of GDP | Positive (for ODA): Higher tax revenues indicates more resources available for foreign aid<br>Negative (for ODA volatility): Higher tax revenues could imply donor's greater capacity to keep more stable aid flows | US Bureau for Labor Statistics |
| MISERYORIG | Original misery index which is a combination of the inflation and unemployment rates; figure is an average of the bi-annual misery index reported by Hufbauer, Kim and Rosen (2008) | Negative (for ODA): Greater economic difficulty will lead to lower support for foreign aid programs<br>Positive (for ODA volatility): ODA could become more volatile under more difficult economic circumstances | Arthur Okun, as reported in Hufbauer, Kim and Rosen (2008) |
| MISERYAUG | Augmented misery index is a combination of the inflation and unemployment rates as well as an indicator of housing price movements; figure is an average of the bi-annual augmented misery index reported by Hufbauer, Kim and Rosen (2008) | Negative (for ODA): Greater economic difficulty will lead to lower support for foreign aid programs<br>Positive (for ODA volatility): ODA could become more volatile under more difficult economic circumstances | Hufbauer, Kim and Rosen (2008) |
| MONTERREY | Dummy variable for the post-Monterrey Consensus period | Positive (for ODA): Higher ODA in the post-Monterrey period if the US has kept up with its commitments to increase ODA<br>Negative (for ODA volatility): Less volatile ODA in the post-Monterrey period if attention to more stable aid flows and quality of aid has also improved | |
| STOCKSDPRCH | Standard deviation of the daily percentage changes in the S&P500 (for each year) | Negative (for ODA): Higher stock market volatility is a proxy for financial volatility and economic uncertainty. These, in turn, are expected to be negatively linked to ODA<br>Positive (for ODA volatility): Higher financial volatility and economic uncertainty could weaken the support for more stable aid flows | Bloomberg Terminal |

**Table A2. Dependent Variable: US ODA**
(In $2000)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| RGDPPERCAP | 0.180413 | 1.024136 | 0.79793 | 0.217712 | 0.377723 | 0.356612 | 0.216065 | 0.414773 |
| | [0.078941]* | [0.320902]** | [0.333235]* | [0.296688] | [0.316701] | [0.319683] | [0.305906] | [0.287419] |
| GINI | | -1.97E+05 | -1.44E+05 | -6.82E+04 | -1.18E+05 | -1.11E+05 | -6.77E+04 | -9.67E+04 |
| | | [72967.536452]* | [76164.389983] | [63504.921899] | [72870.435816] | [73860.494043] | [66686.497545] | [60283.974859] |
| DEMOCRAT | | | -1894.722687 | -664.073248 | -508.431562 | -714.632897 | -661.748344 | -1111.434801 |
| | | | [1,008.466056] | [855.344514] | [853.859350] | [899.006148] | [870.953835] | [816.978623] |
| MONTERREY | | | | 6,936.79 | 6,814.41 | 6,592.17 | 6,947.30 | 5,860.10 |
| | | | | [1,512.136955]** | [1,498.315159]** | [1,533.946143]** | [1,573.408839]** | [1,472.900695]** |
| STOCKSDPRCH | | | | | | | | -2.78E+05 |
| | | | | | | | | [1.09727e+05]* |
| MISERYAUG | | | | | | | 3.323754 | |
| | | | | | | | [111.311719] | |
| MISERYORIG | | | | | -194.884591 | -212.434298 | | |
| | | | | | [145.121012] | [147.699820] | | |
| TAXREVGDP | | | | | | -1.31E+04 | | |
| | | | | | | [16870.859822] | | |
| Constant | 7,667.94 | 69413.05318 | 53243.94492 | 35055.97096 | 54027.44258 | 54039.6307 | 34851.84812 | 44809.45629 |
| | [2,166.740409]** | [22952.382532]** | [23832.555250]* | [19599.194929] | [23985.801967]* | [24123.660894]* | [21019.626561] | [18678.527220]* |
| Observations | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 |
| R-squared | 0.12 | 0.26 | 0.32 | 0.57 | 0.59 | 0.6 | 0.57 | 0.64 |

Standard errors in brackets
* significant at 5%; ** significant at 1%

**Table A3. Dependent Variable: US ODA**
(In % of GNI)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| RGDPPERCAP | -0.00001 | 0 | -0.000001 | -0.000011 | -0.000003 | -0.000003 | -0.00001 | -0.000009 |
| | [0.000001]** | [0.000006] | [0.000006] | [0.000006] | [0.000005] | [0.000005] | [0.000006] | [0.000006] |
| GINI | | -2.511546 | -2.08457 | -0.80313 | -3.252029 | -3.347206 | -1.271718 | -1.137018 |
| | | [1.268156] | [1.372614] | [1.180994] | [1.124569]** | [1.142337]** | [1.201982] | [1.181426] |
| DEMOCRAT | | | -0.015138 | 0.005774 | 0.013456 | 0.016217 | 0.003665 | 0.000542 |
| | | | [0.018174] | [0.015907] | [0.013177] | [0.013904] | [0.015698] | [0.016011] |
| MONTERREY | | | | 0.117875 | 0.111835 | 0.114811 | 0.108342 | 0.105281 |
| | | | | [0.028121]** | [0.023123]** | [0.023724]** | [0.028360]** | [0.028865]** |
| STOCKSDPRCH | | | | | | | | -3.246841 |
| | | | | | | | | [2.150387] |
| MISERYAUG | | | | | | | -0.003016 | |
| | | | | | | | [0.002006] | |
| MISERYORIG | | | | | -0.009618 | -0.009383 | | |
| | | | | | [0.002240]** | [0.002284]** | | |
| TAXREVGDP | | | | | | 0.175137 | | |
| | | | | | | [0.260927] | | |
| Constant | 0.486594 | 1.273579 | 1.144397 | 0.835334 | 1.771637 | 1.771474 | 1.020555 | 0.949415 |
| | [0.036229]** | [0.398906]** | [0.429504]* | [0.364484]* | [0.370160]** | [0.373100]** | [0.378866]* | [0.366056]* |
| Observations | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 |
| R-squared | 0.61 | 0.65 | 0.65 | 0.77 | 0.85 | 0.85 | 0.78 | 0.78 |

Standard errors in brackets
* significant at 5%; ** significant at 1%

**Table A4. Dependent Variable: US Bilateral ODA**
(In $2000)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| RGDPPERCAP | 0.201437 | 0.924089 | 0.670458 | 0.011882 | 0.277456 | 0.266351 | 0.041862 | 0.228884 |
| | [0.080390]* | [0.335844]** | [0.346284] | [0.290386] | [0.294616] | [0.299173] | [0.298091] | [0.274392] |
| GINI | | -1.69E+05 | -1.09E+05 | -2.33E+04 | -1.06E+05 | -1.02E+05 | -3.27E+04 | -5.47E+04 |
| | | [76365.017185]* | [79146.738817] | [62156.059896] | [67788.839129] | [69121.824439] | [64982.702062] | [57551.634578] |
| DEMOCRAT | | | -2124.434855 | -727.587016 | -469.265129 | -577.729181 | -769.906987 | -1220.216938 |
| | | | [1,047.954294]* | [837.176761] | [794.315740] | [841.328587] | [848.701546] | [779.949485] |
| MONTERREY | | | | 7,873.60 | 7,670.48 | 7,553.58 | 7,682.37 | 6,687.96 |
| | | | | [1,480.018750]** | [1,393.830628]** | [1,435.532721]** | [1,533.209294]** | [1,406.142226]** |
| STOCKSDPRCH | | | | | | | | -3.06E+05 |
| | | | | | | | | [1.04753e+05]** |
| MISERYAUG | | | | | | | -60.501936 | |
| | | | | | | | [108.467779] | |
| MISERYORIG | | | | | -323.454189 | -332.685518 | | |
| | | | | | [135.001044]* | [138.223839]* | | |
| TAXREVGDP | | | | | | -6880.434826 | | |
| | | | | | | [15788.475638] | | |
| Constant | 4,303.43 | 57188.37768 | 39058.96097 | 18414.71306 | 49902.07654 | 49908.48762 | 22130.33885 | 29155.15035 |
| | [2,206.517778] | [24021.080767]* | [24765.760300] | [19182.902640] | [22313.159688]* | [22575.958565]* | [20482.589138] | [17831.932542] |
| Observations | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 |
| R-squared | 0.14 | 0.24 | 0.31 | 0.62 | 0.67 | 0.67 | 0.62 | 0.69 |

Standard errors in brackets
* significant at 5%; ** significant at 1%

**Table A5. Dependent Variable: US Bilateral ODA**
(In percent share of total ODA)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| RGDPPERCAP | 0.000261 | 0.000615 | 0 | -0.001279 | -0.000219 | -0.000144 | -0.001058 | -0.000876 |
| | [0.000240] | [0.001063] | [0.001121] | [0.001153] | [0.001169] | [0.001180] | [0.001170] | [0.001188] |
| GINI | | -82.553145 | 62.814272 | 229.01368 | -99.623335 | -124.996945 | 159.570959 | 170.650047 |
| | | [241.757349] | [256.243390] | [246.739738] | [268.868032] | [272.675375] | [255.120802] | [249.229941] |
| DEMOCRAT | | | -5.153788 | -2.441546 | -1.410716 | -0.674683 | -2.754182 | -3.356195 |
| | | | [3.392829] | [3.323325] | [3.150461] | [3.318917] | [3.331985] | [3.377606] |
| MONTERREY | | | | 15.288075 | 14.477519 | 15.270804 | 13.875343 | 13.086729 |
| | | | | [5.875203]* | [5.528292]* | [5.662964]* | [6.019349]* | [6.089362]* |
| STOCKSDPRCH | | | | | | | | -567.548055 |
| | | | | | | | | [453.638737] |
| MISERYAUG | | | | | | | -0.446955 | |
| | | | | | | | [0.425842] | |
| MISERYORIG | | | | | -1.29074 | -1.228097 | | |
| | | | | | [0.535449]* | [0.545273]* | | |
| TAXREVGDP | | | | | | 46.690324 | | |
| | | | | | | [62.283201] | | |
| Constant | 69.745127 | 95.612898 | 51.631713 | 11.547039 | 137.19698 | 137.153475 | 38.996011 | 31.488447 |
| | [6.585660]** | [76.046245] | [80.180971] | [76.150007] | [88.499750] | [89.058818] | [80.414240] | [77.221985] |
| Observations | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 |
| R-squared | 0.03 | 0.03 | 0.09 | 0.23 | 0.34 | 0.35 | 0.26 | 0.27 |

Standard errors in brackets
* significant at 5%; ** significant at 1%

**Table A6. Dependent Variable: Standard Deviation of US ODA**
(In $2000, and based on 5 year forward figures)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| RGDPPERCAP | 0.098239 | 0.183277 | 0.161657 | 0.111063 | 0.205455 | 0.213389 | 0.125869 | 0.092298 |
| | [0.025364]** | [0.111903] | [0.116395] | [0.110385] | [0.114534] | [0.115949] | [0.098875] | [0.120378] |
| GINI | | -1.86E+04 | -1.31E+04 | -8783.061223 | -3.69E+04 | -3.95E+04 | -1.76E+04 | -5829.541967 |
| | | [23860.099840] | [25174.387140] | [23518.777848] | [26184.783507] | [26633.909733] | [21246.578962] | [24837.229971] |
| DEMOCRAT | | | -227.435598 | -35.402341 | 51.44617 | 118.934234 | -135.29624 | -5.013904 |
| | | | [307.808933] | [297.267416] | [286.114891] | [303.100836] | [268.017493] | [309.683161] |
| MONTERREY | | | | 1,628.98 | 1,598.98 | 1,620.41 | 1,215.92 | 1,614.39 |
| | | | | [664.022901]* | [632.391527]* | [638.014229]* | [609.814819] | [673.616902]* |
| STOCKSDPRCH | | | | | | | | 19744.59573 |
| | | | | | | | | [46872.899946] |
| MISERYAUG | | | | | | | -111.08689 | |
| | | | | | | | [37.061950]** | |
| MISERYORIG | | | | | -101.667094 | -96.576239 | | |
| | | | | | [49.029781]* | [49.912172] | | |
| TAXREVGDP | | | | | | 4,185.54 | | |
| | | | | | | [5,793.449579] | | |
| Constant | -721.418467 | 4,991.01 | 3,272.69 | 2,595.94 | 13168.7096 | 13278.8783 | 6,895.10 | 1,632.76 |
| | [663.243321] | [7,349.492816] | [7,755.923334] | [7,231.211263] | [8,567.395546] | [8,635.574977] | [6,626.190203] | [7,674.518838] |
| Observations | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| R-squared | 0.3 | 0.31 | 0.32 | 0.43 | 0.5 | 0.51 | 0.56 | 0.43 |

Standard errors in brackets
* significant at 5%; ** significant at 1%

**Table A7. Dependent Variable: Standard Deviation of US Bilateral ODA**
(In $2000, and based on 5 year forward figures)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| RGDPPERCAP | 0.133887 | 0.172345 | 0.116955 | 0.067709 | 0.144541 | 0.16334 | 0.078947 | 0.016284 |
| | [0.026883]** | [0.119468] | [0.119272] | [0.114149] | [0.121524] | [0.118682] | [0.108866] | [0.122318] |
| GINI | | -8421.607917 | 5,837.54 | 9,997.09 | -1.29E+04 | -1.91E+04 | 3,273.90 | 18091.12376 |
| | | [25473.169144] | [25796.670042] | [24320.645389] | [27782.719606] | [27261.595412] | [23393.464021] | [25237.429809] |
| DEMOCRAT | | | -582.680851 | -395.765358 | -325.072749 | -165.169227 | -471.585347 | -312.486731 |
| | | | [315.417628] | [307.402683] | [303.575158] | [310.244063] | [295.099630] | [314.673055] |
| MONTERREY | | | | 1,585.57 | 1,561.15 | 1,611.91 | 1,272.05 | 1,545.57 |
| | | | | [686.662616]* | [670.983453]* | [653.050414]* | [671.434260] | [684.470824]* |
| STOCKSDPRCH | | | | | | | | 54109.48992 |
| | | | | | | | | [47628.158362] |
| MISERYAUG | | | | | | | -84.315528 | |
| | | | | | | | [40.806917]* | |
| MISERYORIG | | | | | -82.754581 | -70.692512 | | |
| | | | | | [52.021842] | [51.088460] | | |
| TAXREVGDP | | | | | | 9,917.04 | | |
| | | | | | | [5,929.984747] | | |
| Constant | -1982.103875 | 601.25258 | -3801.010652 | -4459.731039 | 4,146.25 | 4,407.28 | -1196.640245 | -7099.27701 |
| | [702.950270]** | [7,846.357513] | [7,947.641148] | [7,477.757816] | [9,090.224029] | [8,839.090976] | [7,295.741229] | [7,798.177603] |
| Observations | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| R-squared | 0.41 | 0.42 | 0.47 | 0.55 | 0.58 | 0.62 | 0.6 | 0.56 |

Standard errors in brackets
* significant at 5%; ** significant at 1%

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