

To Invest or Insure? A Comment on Wright (2008)

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Abstract:

Wright (2008) investigates how the impact of foreign aid on GDP growth in dictatorships depends on the dictator's time horizon, i.e., how much longer the dictator expects to be in office. The empirical analysis finds a strong positive impact of aid on growth for dictators with long time horizons and a strong negative impact for dictators with short time horizons. Rerunning Wright's specifications, we find the positive effect depends on two outlier observations for Jordan. Omitting these observations, aid has no effect in long time horizon dictatorships but continues to have a negative impact in short time horizon dictatorships. Thus, Wright's core result—the dependence on leadership tenure expectations—survives, but the policy implications are radically different.

Since the publication of *Assessing Aid* (World Bank, 1998) and subsequently Burnside and Dollar (2000), academic and policy debates have raged over the impact of foreign aid on GDP growth. The results of Burnside and Dollar resonated with aid practitioners (and perhaps aligned with the bureaucratic interests of donor agencies), justifying a major shift toward more selectivity in the allocation of foreign aid. Subsequent academic work, however, found these results fragile at best (Easterly et al., 2004; Rajan & Subramanian, 2008) and alternative approaches yield quite different estimates (Clemens et al., 2012; Minoiu & Reddy, 2010). This literature has also been criticized for dealing inadequately with heterogeneity and causal mechanisms (Deaton, 2010; Kilby & Dreher, 2010).

Wright (2008) pushes the frontier of the aid and growth literature by examining a new dimension of heterogeneity, the time horizon of authoritarian governments. Drawing on Olson (1993), Wright argues that aid should promote growth more effectively in authoritarian regimes that expect to hold power for a long time as compared to authoritarian regimes with shorter time horizons. Wright's empirical findings strongly support this hypothesis and this study has been widely cited, including a number of citations in top Political Science journals (Dionne, 2011; Hankla & Kuthy, forthcoming; Hyde & Nikolay, 2012; Krebs & Rapport, 2012).

Drawing on Olson's (1993) observation that a "stationary bandit" will limit confiscation and provide more public goods relative to a "roving bandit," Wright argues that an autocrat who expects to remain in power for some time is more likely to use foreign aid in ways that promote growth than is an autocrat who expects a short tenure. The secure dictator is more likely to invest aid in public goods to increase the size of the future economic pie (aid promotes growth) while the insecure dictator is more likely to use aid to buy off rivals, fund repression, and fill off-shore bank accounts (aid does not promote growth).

In fact, the theory's predictions are more limited. We can only state that aid outcomes will be better under long time horizon dictators than under short time horizon dictators. The theory has little to say about whether this difference in aid outcomes is: (1) a positive effect versus a less positive effect; (2) a positive effect versus no effect; (3) a positive effect versus a negative effect; or (4) a negative effect versus a more negative effect. Aid could have such positive effects that it spurs economic growth even under insecure dictators (case (1), e.g., as in a two gap model) or have such negative effects that it reduces growth even under the most secure dictators (case (4), e.g., because of Dutch disease or the undermining of domestic institutions). Thus, Wright's formal hypothesis (page 977) goes beyond the theory when limiting predicted outcomes to (2) and (3).

To test his hypothesis, Wright estimates a growth model that includes aid as a share of GDP (Aid) and the autocrat's time horizon as captured by an estimate of the probability that the regime will end in the current period ($P(Fail)$). The model also includes an interaction between aid and regime stability ($Aid * P(Fail)$). The theory predicts that the coefficients on $P(Fail)$ and $Aid * P(Fail)$ will be negative while the stated hypothesis translates into a positive coefficient on Aid and a negative coefficient on $Aid * P(Fail)$.

The results presented by Wright strongly support his stated hypothesis. In the 22 specifications that include the critical interaction term (the baseline plus a multitude of robustness checks), the estimated coefficient on Aid is positive and sizable and is significantly different from zero in 20 cases. The estimated coefficient on the $Aid * P(Fail)$ term is negative and sizable and is statistically significant in all 22 specifications. As Wright's Figure 3 demonstrates, this translates into a positive effect of aid on growth for the more stable half of

dictators and a negative effect of aid on growth for the least stable quarter of dictators (with the effects not significantly different from zero for those in between).

Before drawing conclusions from the estimation results, two other characteristics should be considered. First, when the $Aid * P(Fail)$ interaction term is included, the estimated coefficient on $P(Fail)$ becomes insignificant, with a positive point estimate in most cases. This positive sign is unexpected since theory does not suggest that the negative effect of a shortsighted dictator operates solely through the dictator's misuse of aid. Second, the statistical significance of the Aid coefficient hinges on just two observations.

Figure 1 presents a partial regression plot (using Stata's *avplot* command) illustrating the link between Aid and GDP growth (gdp) controlling for the other factors in Wright's Table 2, Column 2 specification (the baseline model). The strength of the estimated link between aid and growth is evidently influenced by the observations $JOR3$ and $JOR4$ (values for Jordan averaged over 1974-1977 and 1978-1981).

[Figure 1 about here]

Table 1 presents the key coefficient estimates with and without these two observations. Estimates with the two observations replicate results presented in Wright (2008) Table 2, Columns 2 to 7, Table 3, Columns 1 to 10, and Table 4, Columns 1, 2, 3, and 6. We generate these estimates using Wright's replication data set and Stata code posted at AidData.org. Below each set of replication coefficient estimates are matching estimates from identical specifications for samples omitting the two outliers, $JOR3$ and $JOR4$. For both sets of samples, we report coefficient estimates for Aid and $Aid * P(Fail)$.¹

[Table 1 about here]

¹ Other results are little changed by omitting $JOR3$ and $JOR4$.

Wright's estimates of and conclusions about $Aid * P(Fail)$ are consistent across samples; the data robustly support the claim that aid is less effective in short time horizon dictatorships. However, the positive effect of aid in long time horizon dictatorships effectively vanishes when the two outliers are dropped. In 19 of the 20 specifications, Aid is not a statistically significant factor and in three cases, the point estimates are actually negative.

The influence of these two observations is particularly important because Jordan's aid and economic experiences during this period (1974-1981) were anything but typical. Following the Arab oil embargo in the mid 1970s, aid from oil-producing Arab states to Jordan spiked from \$33 million in 1972 to \$970 million in 1975. In response to the Camp David Accords, several Arab countries pledged still larger sums to Jordan at the Baghdad Conference in 1979, recognizing Jordan's position as a "front line state" in regard to both Israel and the Palestinians and the strategic value of keeping Jordan out of a deal with the U.S. Reflecting this, Arab aid to Jordan jumped to nearly \$2.5 billion in 1979, an increase of over 7000% in less than 10 years.² Peters & Moore (2009, 270) describe this as Jordan's "rentier period" when foreign aid averaged 30% of GDP and up to 86% of the government budget. At the same time, Jordan's economy also benefited from several other external events. The reopening of the Suez Canal spurred trade (especially with Iraq) through the port of Aqaba. In response to civil war in nearby Lebanon, the financial epicenter of the Middle East shifted from Beirut to Amman. With greater oil wealth in neighboring countries, remittances (especially from the many Jordanian doctors, teachers, and engineers working throughout the Gulf) increased dramatically, reaching 30% of GDP in 1981 (Peters & Moore, 2009, 273). These factors drove a real estate and construction boom in Jordan and economic growth averaged over 10 percent between 1974 and 1981 (Roberts, 1984).

² Figures are net official development assistance (ODA) in constant 2010 USD from OECD (2012).

Given the limitations identified, the conclusions drawn from Wright's work need some modification. Wright (2008, 992) concludes that

...the evidence suggests that in authoritarian regimes with long time horizons (a low probability of regime failure), there is a robust positive relationship between aid and growth. The real abusers of aid, it appears, are dictators with short time horizons. This suggests that there is considerable variation within authoritarian regimes over how they use aid, which means that simply giving aid to democracies may miss a valuable opportunity to spur growth in some types of authoritarian regimes.

If we discount the impact of Jordan, there is instead no statistically significant relationship between aid and growth for authoritarian regimes with long time horizons. The data show that dictators with short time horizons are *worse* abusers of aid than dictators with long time horizons but the data do not exonerate the latter group completely. Thus, the policy take away is quite different. Whereas Wright implies that donors interested in growth should consider aid to stable authoritarian regimes, no such conclusion appears warranted from this research.

Switching from policy to theory, Wright provides important but mixed evidence. The key theoretical prediction that the impact of aid on growth is lower for dictators with shorter time horizons is robustly confirmed. However, theory suggests that growth performance should also be lower independent of aid and there is no evidence of this in the data.

If interpretation of this work needs modification, does this require re-evaluation of subsequent research that has drawn on Wright's conclusions? Fortunately, the majority of the literature building on Wright (2008) does so in ways that implicitly rely only on the differential

effect, i.e., the result that proves robust. A few papers either explicitly or implicitly present Wright's work as "finding" that aid to long time horizon dictators has a positive effect on economic growth but this is not central to their arguments (Kalyvitis & Vlachaki, 2009; Winters, 2010; Ezrow & Frantz, 2011). Perhaps the largest concern is that Wright's results appear to be very policy-relevant (Hankla & Kuthy, forthcoming). Policy makers need to be cautioned that there is no robust empirical evidence of aid promoting growth in dictatorships.

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http://aiddata.org/weceem_uploads/_ROOT/File/Wright/Replicate%20Wright%20CPS08_Insure%20or%20Invest.zip

Figure 1: Partial Regression Plot

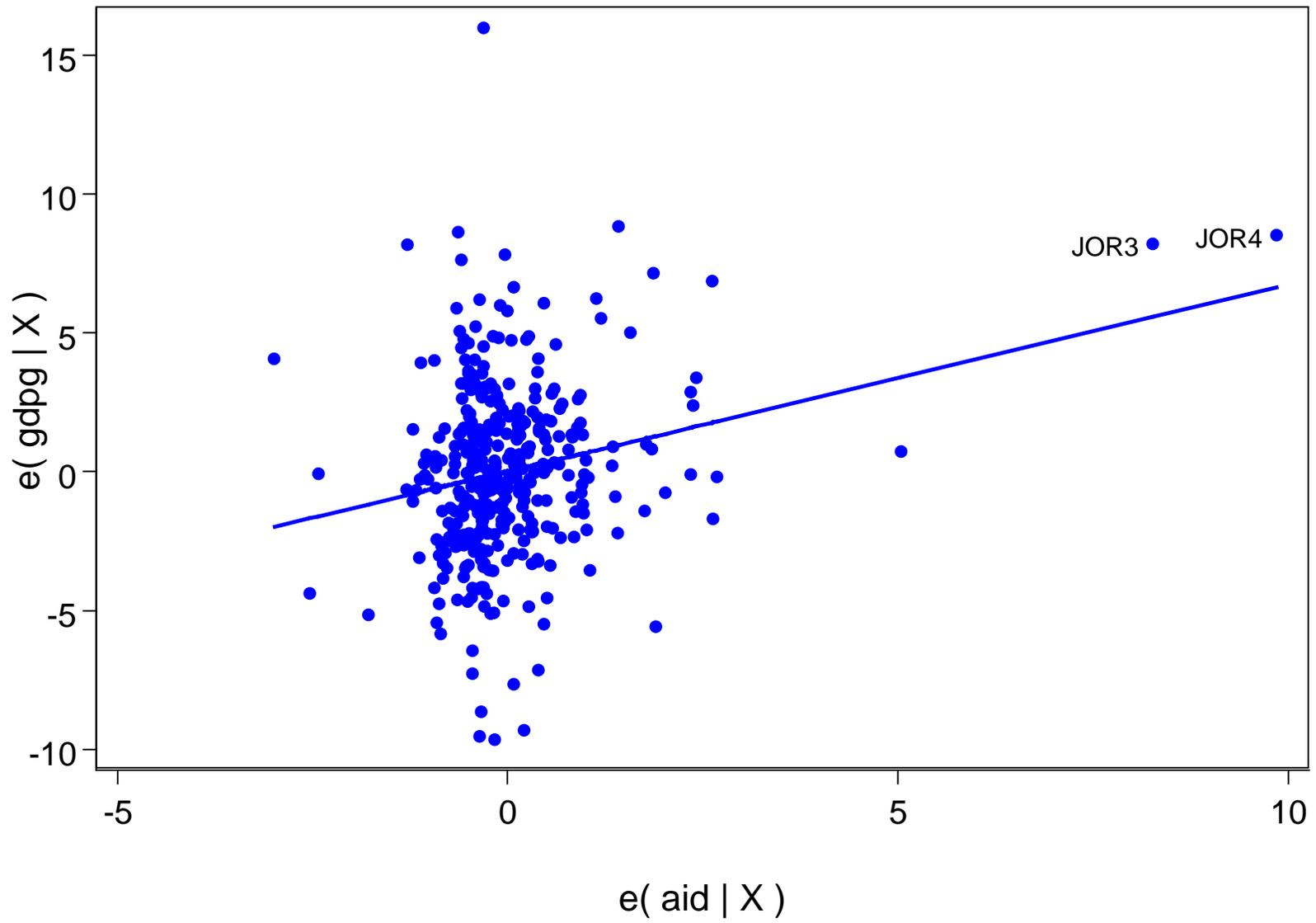


Table 1: Re-estimating Wright tables 2-4 dropping outliers

	(2.2)	(2.3)	(2.4)	(2.5)	(2.6)	(2.7)				
	Original Sample									
<i>Aid</i>	1.111** (0.16)	1.109** (0.16)	1.118** (0.16)	1.172** (0.14)	1.150** (0.14)	1.144** (0.15)				
<i>Aid*P(Fail)</i>	-40.35** (8.37)	-39.42** (8.17)	-39.41** (9.09)	-42.11** (7.57)	-41.90** (7.35)	-38.69** (7.60)				
<i>N</i>	375	370	362	375	375	375				
	Excluding 2 Jordan outliers									
<i>Aid</i>	0.187 (0.99)	0.257 (0.97)	0.439 (0.94)	0.138 (0.97)	0.0436 (0.98)	0.746 (0.72)				
<i>Aid*P(Fail)</i>	-32.84** (12.63)	-32.46** (12.34)	-33.77** (13.06)	-31.85** (11.97)	-31.04** (11.70)	-35.03** (9.84)				
<i>N</i>	373	368	360	373	373	373				
	(3.1)	(3.2)	(3.3)	(3.4)	(3.5)	(3.6)	(3.7)	(3.8)	(3.9)	(3.10)
	Original Sample									
<i>Aid</i>	1.154** (0.23)	1.183** (0.17)	1.055** (0.15)	1.203** (0.17)	1.220** (0.21)	1.092** (0.18)	1.183 (1.06)	1.080** (0.17)	1.239** (0.22)	0.949** (0.17)
<i>Aid*P(Fail)</i>	-50.50** (10.17)	-42.25** (8.85)	-39.68** (8.47)	-38.73** (8.39)	-47.44** (10.66)	-47.96** (10.38)	-48.08** (14.52)	-36.24** (9.00)	-55.35** (11.06)	-35.18** (9.44)
<i>N</i>	506	441	391	423	289	289	289	315	304	234
	Excluding 2 Jordan outliers									
<i>Aid</i>	0.969 (2.08)	1.947 (1.22)	0.189 (0.86)	2.166* (1.25)	0.360 (0.73)	0.309 (0.78)	1.170 (1.09)	-0.125 (0.86)	-0.418 (1.13)	0.490 (1.68)
<i>Aid*P(Fail)</i>	-48.82** (19.17)	-53.01** (16.54)	-32.62** (11.83)	-51.62** (16.62)	-37.90** (12.91)	-39.25** (13.30)	-46.28** (14.71)	-24.00* (12.61)	-38.69** (15.50)	-31.72* (16.71)
<i>N</i>	504	439	389	421	287	287	287	313	302	232

Table 1: Re-estimating Wright tables 2-4 dropping outliers (continued)

	(4.1)	(4.2)	(4.3)	(4.6)
	Original Sample			
<i>Aid</i>	1.282**	0.980**	0.901**	1.137**
	(0.21)	(0.13)	(0.16)	(0.18)
<i>Aid*P(Fail)</i>	-52.91**	-28.89**	-20.75**	-43.37**
	(16.34)	(8.17)	(8.21)	(10.57)
<i>N</i>	259	291	108	375
	Excluding 2 Jordan outliers			
<i>Aid</i>	1.060	0.301	-0.147	0.666
	(1.93)	(0.93)	(1.16)	(0.74)
<i>Aid*P(Fail)</i>	-50.52	-23.94**	-12.27	-38.59**
	(31.82)	(10.12)	(13.19)	(13.64)
<i>N</i>	257	289	106	373

Standard errors in parentheses; * p<.1, ** p<.05

Original sample for (4.4) excludes countries without legislatures and so already excludes Jordan in the relevant period (1974-1981).

Could not replicate (4.5) from available data set.